



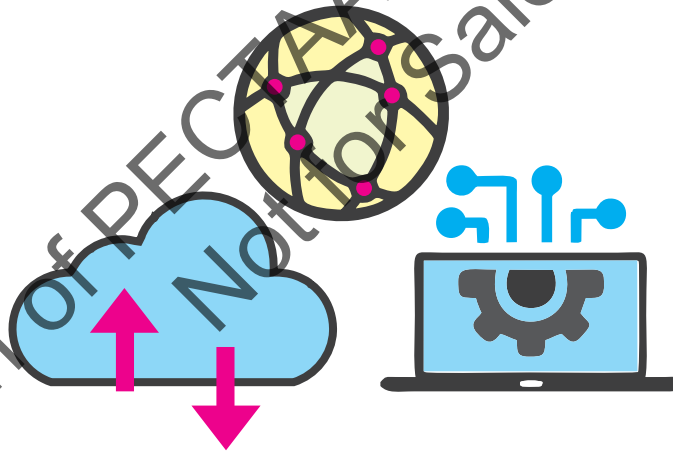
بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(In the Name of Allah, the Most Merciful, the Most Compassionate.)

Practical Notebook

Information and Communication Technologies

Grade 9



PUNJAB EDUCATION, CURRICULUM,
TRAINING AND ASSESSMENT AUTHORITY





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as per syllabus.

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Information and Communication Technologies Grade IX

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GUIDELINES FOR TEACHERS ON PRACTICAL WORK

Teachers are encouraged to teach various concepts through learner-centered activities that promote curiosity, inquiry, creativity and critical discussions through group work and collaboration. The purpose of lab work is to enhance critical thinking skills, experimental design and instrument handling. Students should learn the skills to use tools, devices and apparatus with care and while noting observations and taking readings, they should strive for accuracy and precision. Students should not demonstrate a casual attitude toward practical work but should be active, careful and prioritize safety for themselves and their peers in the lab.

Preparation for Practical Work in the Lab

To optimize the use of limited lab equipment in a school setting, teachers should organize students into groups of 4 to 5 and encourage individual participation in handling apparatus and taking readings. A group-wise practical schedule chart should be prominently displayed in the lab, assigning multiple experiments to keep all groups engaged. The chart should track progress and indicate which group is assigned to each experiment. The lab in-charge should prepare apparatus in advance with teacher assistance, if needed. Teachers should supervise and provide support during lab work, keeping records of students' progress and providing feedback in their practical notebooks.

Bimonthly Practical Based Assessment/ Evaluation

Some bimonthly practical-based assessment papers are provided in the practical manual. The teacher may prepare additional papers following the same pattern if the need arises to overcome the shortage of available apparatus for each group. The teacher should move around to monitor and assess the students' performance by asking prompt questions about their practical work. The teacher should also conduct a Viva-Voce on the experiment they are performing and ask questions that enhance their critical thinking skills. If a student is stuck somewhere, the teacher may address the issue or provide hints to guide him / her back on the right track. Based on the performance record, the teacher can identify students with below average performance and provide them with extra care and personal attention to help them overcome their shortcomings.





UNIT 1

Digital Literacy

In this unit, we will practically learn how to use software for documentation and presentation. We will create and format documents by changing text alignment, font styles, and sizes. We will see how a document gets a professional look and feel by inserting images, tables, and shapes. We will also look into how to add headings and make a table of contents. After working with documents, we will create presentations using different themes. We will also apply basic transitions and animations to slides to make our presentations more attention-grabbing.



PRACTICAL 1

Create and format a document with required text alignment, font styles, font, size and save the document with an appropriate file name.

Steps:

1. Create a new blank document.
2. Type the following leave application.

The Principal,
GPS, Multan.

Subject: Leave Application for One Day

Respected Sir,

I am Nasir Hussain, a student of class 5. I am not feeling well today, so I cannot come to school. Please grant me leave for one day on Sep 12, 2025.

I will be very thankful to you.

Yours obediently,

Nasir

Nasir Hussain,

Class 5

Date: Sep 11, 2025

Figure 1.1: Create and Format a Document For Leave Application

3. Apply the following format to the typed text:
 - Font: Times New Roman or Arial
 - Font Size: 12 pt
 - Alignment: Left-aligned for body, center the heading
 - Line Spacing: 1.5
 - Margins: Keep default margins (Normal)



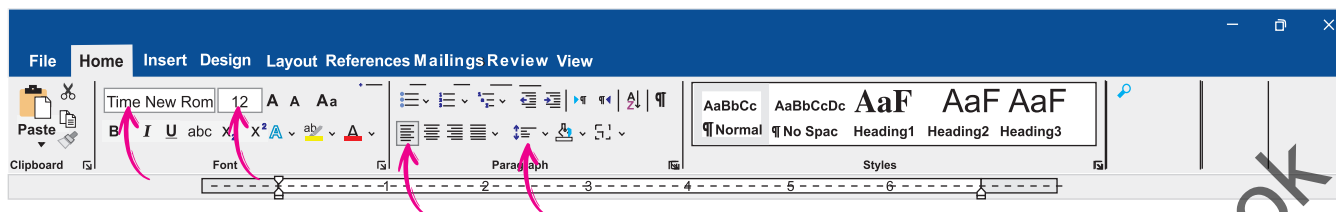


Figure 1.2: Home Tab

4. Save the document with an appropriate file name.
(Example: 10532.docx) (as shown in Figure 1.1)



PRACTICAL 2

Create a job cover letter using built-in templates of word processing software.

Steps:

1. Create a new document in MS Word software.
2. Click the “Office” tab (in templates)
3. Select “Letters” and then pick some template, e.g., “Blue spheres cover letter” or any other template as shown in Figure 1.3.

MUHAMMAD NASIR

Date: Sep 12, 2025

QRP Colony, Multan | 0123-1234567 | email@domain.com

Muhammad Ali

General Manager

Mycrophyte Pvt. Limited

XYZ Colony, Street #5, Lahore

Respected Sir,

I am writing to express my interest in any suitable opportunity at Mycrophyte Pvt. Limited, that matches my skills and experience. With a strong background in Information Technology, I am confident in my ability to contribute effectively to your organization.

I have completed my bachelor's degree in computer science and have gained experience in Software Project Management. I am a quick learner, and passionate about delivering quality work in a team environment.

Sincerely,

Muhammad Nasir

Figure 1.3: Job Cover Letter Created Using Built-in Templates

4. Change all text according to your academic profile.



PRACTICAL 3

Create a document and insert images, tables, shapes and then save the document.

Steps:

1. Create a new blank document.
2. Type a heading at the top of the page.
(Example: “Students Data for Class 9” with word Art utility.)
3. Insert a picture/logo using “Insert tab” into the document.
4. Insert a table with 3 rows and 3 columns, and enter sample data such as:
 - Name
 - Class
 - Roll Number
5. Insert any one shape (e.g., circle, square, or arrow) into the document.
6. Format the image, table, and shape using available formatting tools (resize, change color, reposition, etc.) (Optional).
7. Save the document with an appropriate file name. (Example: 10532.docx) (as shown in Figure 1.4)

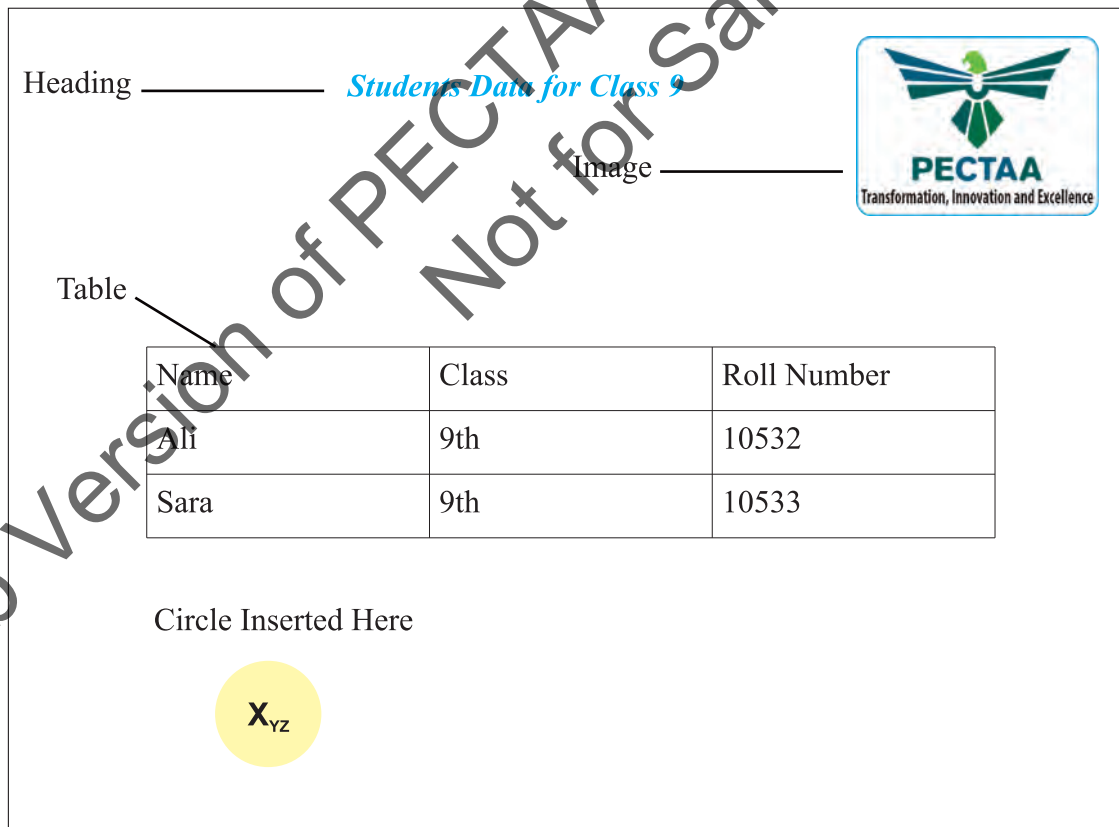


Figure 1.4: Create a Document With Table, Image and Shape





PRACTICAL 4

Create a document and insert headings (Heading 1, Heading 2 and Heading 3) and generate a table of contents. Save the document with an appropriate file name.

Steps:

1. Create a new blank document, and type the following text in your document:

Introduction

This is the introduction to my project.

Chapter 1

This is chapter one.

Chapter 1.1

This is a part of chapter one.

2. Apply heading styles:

- Select Introduction and apply Heading 1 style.
- Select Chapter 1 and apply Heading 2 style.
- Select Chapter 1.1 and apply Heading 3 style.

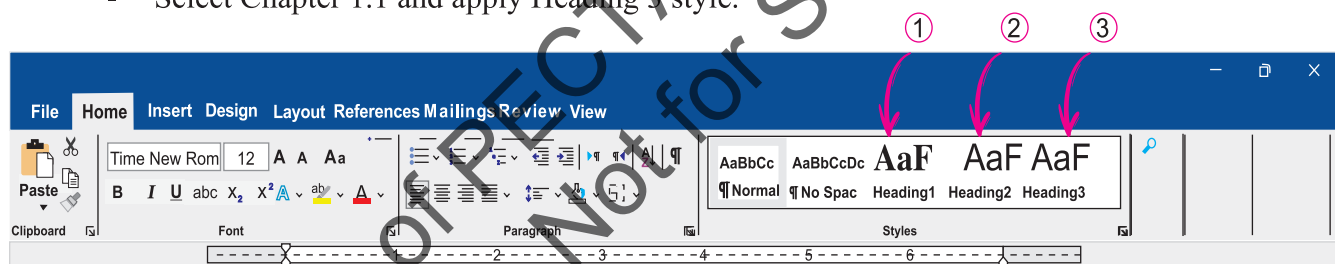


Figure 1.5: Headings in Home Tab

3. Insert a “Table of Contents” using “References tab” at the top of the document.

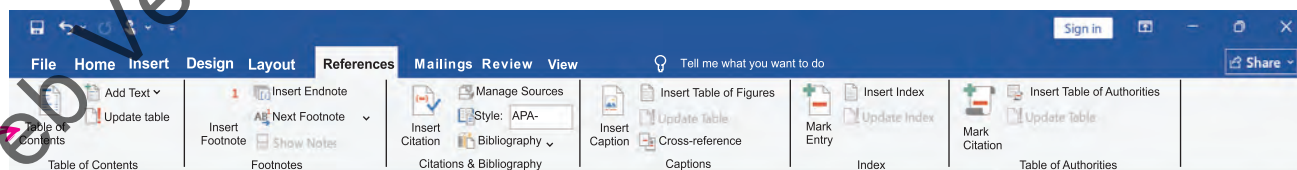


Figure 1.6: Table of Contents in MS Word

4. Save the document with an appropriate file name.
(Example: 10532.docx)



PRACTICAL 5

Design at least three slides in presentation software (i.e., MS. PowerPoint) using relevant themes and insert a table and a chart. Save the presentation with an appropriate file name.

Steps:

1. Apply a Theme to the presentation to make it visually appealing.
2. Create three slides with the following content:
 - Slide 1 – Title Slide
 - Write a suitable title for your presentation (e.g., *My School Project*).
 - Add a few introductory lines about your topic.
 - Slide 2 – Table Slide
 - Insert a table with at least 3 rows and 3 columns.
 - Fill the table with sample data such as *Name* and *Marks*.
 - Slide 3 – Chart Slide
 - Insert a chart (e.g., Bar Chart or Pie Chart) using “Insert tab” based on sample data (such as student marks).
- Save the presentation file with an appropriate file name (For example: 10532.pptx) (as shown in Figure 1.7)

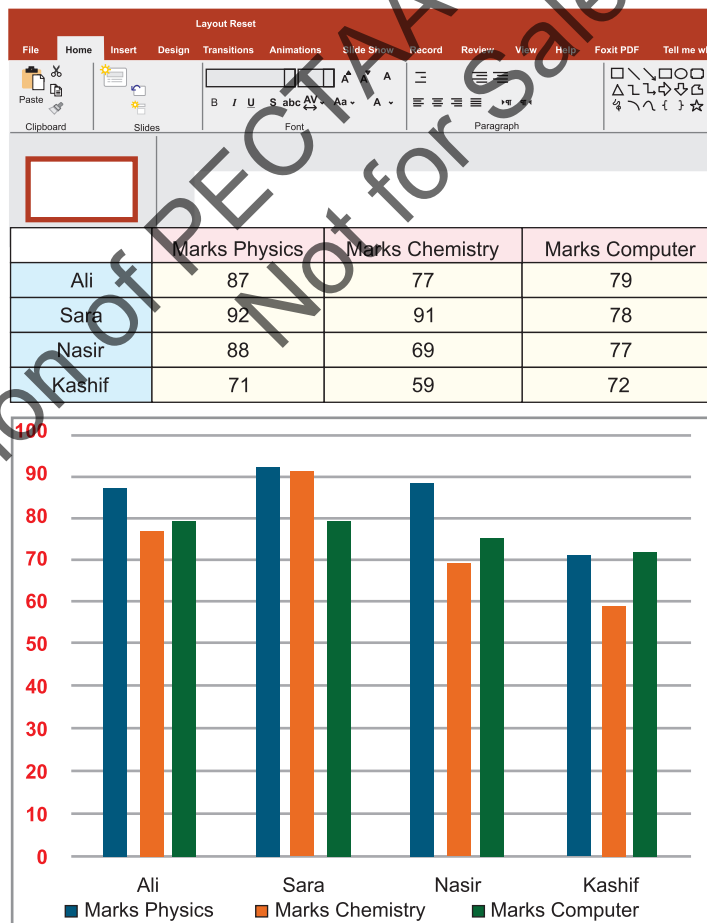


Figure 1.7: Create a Presentation With a Table And a Chart.



**PRACTICAL 6**

Create a presentation, apply basic transitions and animations to slides and text elements, respectively. Save the presentation with an appropriate file name.

Steps:

1. Create a New Presentation with 2 or 3 slides.
2. On each slide, type a title and a short sentence.
Example:
 - Slide 1: Title – *Welcome*
 - Slide 2: Title – *About My School*
 - Slide 3: Title – *Thank You*
3. Apply a Slide Transition to each slide.
 - Choose a transition effect (e.g., *Fade, Push, Wipe*).
 - If you want the same transition for all slides, apply it to all.
4. Add Text Animations
 - Select the text on each slide.
 - Apply an animation effect (e.g., *Fly In, Zoom, Appear*).
 - You may apply different animations to different text boxes.
5. Preview your presentation using the “Slide Show” option.
 - Save the presentation with an appropriate file name. For example, 12345.pptx, where 12345 is a roll number.

**PRACTICAL 7**

Prepare a professional presentation on sports activities in your school.

Steps:

1. Plan Your Slides:
 - Include Title Slide, Introduction, Sports Offered, Achievements, Photos, and Closing Slide.
2. Apply a Consistent Design Theme:
 - Select a clean, school-appropriate theme from the Design tab.
3. Add Proper Graphics and Images:
 - Insert relevant, high-quality images and icons. Align them properly.
4. Use Animations and Transitions Wisely:
 - Add smooth transitions between slides and basic entrance animations.
5. Organize Content Using Bullet Points and Headings:
 - Keep text concise, use bullet points for lists.
6. Ensure Proper Font Size and Colors:
 - Titles: Minimum 32 pt, Content: 20-24 pt, clear contrast.
7. Maintain Visual Balance and Alignment:
 - Align all elements neatly using PowerPoint's alignment tools.
8. Final Slide – Thank You:
 - Add a neat Thank You slide with your name and class.





9. Review Before Submission (as shown in Figure 1.8):

- Check for spelling, alignment, and smooth transitions.



Figure 1.8: Sports Activities in a School



PRACTICAL 8

Prepare a Presentation to Introduce Your Favourite Book.

Steps:

1. Slides to Include:
 - Title Slide, Introduction, Author Information, Book Summary, Key Lessons, and Conclusion.
2. Theme and Design:
 - Use a clean, book-appropriate theme (avoid dark, hard-to-read colors).
3. Images and Icons:
 - Insert book cover image and relevant icons (books, legible symbols)
4. Text Formatting:
 - Titles: 32 pt, Content: 20-24 pt, clear, legible fonts.
5. Animations and Transitions:
 - Smooth transitions between slides, simple animations for key points.
6. Content Structure:
 - Use bullet points to summarize author info and book highlights.
7. Review and Polish:
 - Check spelling, image alignment, and overall slide balance.



**PRACTICAL 9****Create a Presentation for a Science Project or Experiment.****Steps:**

1. Slides to Include:

- Title Slide, Introduction to Topic, Hypothesis, Materials Used, Procedure, Results, Conclusion.

2. Design and Layout:

- Choose a clean, science-appropriate theme with consistent fonts and colors.

3. Diagrams and Images:

- Insert relevant diagrams, experiment photos, or scientific symbols.

4. Text and Formatting:

- Titles: At least 32 pt, Content: 20-24 pt, use bullet points where appropriate.

5. Animations and Transitions:

- Use animations to reveal results or key information

6. Visual Balance and Neatness:

- Ensure all elements are aligned and slides are uncluttered.

7. Review Before Submission:

- Check for spelling, readability, proper alignment, and transitions.

**Viva Questions and Answers****1. How do you create and format a document with specific text alignment, font styles, font, size, and save it?**

Ans: Use the "Home" tab in Word to adjust text alignment, font style, size, and save the document.

2. How can you create a document and insert images, tables, and shapes, then save it?

Ans: Use "Insert" tab to add images, tables, and shapes, then save the file.

3. What steps do you follow to insert headings and generate a Table of Contents in a document, then save it?

Ans: Use "Home" tab and select "styles" section for headings and the "References" tab to insert the "Table of Contents", then save it.

4. How do you design a presentation with at least three slides using relevant themes, insert a table and a chart, and save it?

Ans: Select a theme in PowerPoint, create slides, and use "Insert" tab to add a table and chart, then save it.

5. How can you apply basic transitions and animations to a presentation and save it?

Ans: Apply transitions and animations through the "Transitions" and "Animations" tabs in PowerPoint and then save it.





6. Which tab is used to insert a table in a Word document?

Ans: The "Insert" tab is used to add tables in a Word document.

7. How do you apply different font styles in a Word document?

Ans: Use the "Home" tab to select and change font styles in the Word document.

8. What is the purpose of a "Table of Contents" in a document?

Ans: It provides an automatic list of headings and page numbers for easy navigation in the document.

9. Which option is used to insert a chart in a PowerPoint presentation?

Ans: Use the "Insert" tab and select "Chart" to add a chart in a PowerPoint presentation.

10. How can you apply transition effects to slides in PowerPoint presentation?

Ans: Use the "Transitions" tab to choose and apply transition effects in a PowerPoint presentation.

11. What is the shortcut key to save a document in Word or PowerPoint?

Ans: Press Ctrl + S to save the document quickly.

12. How do you insert a picture from your computer into a Word document?

Ans: Click the "Insert" tab, then choose "Pictures" and select a picture from your computer.

13. How can you change the font size of selected text in Word?

Ans: Go to the "Home" tab and use the Font Size dropdown to select a new size.

14. Which tab do you use to add animations to text or objects in PowerPoint?

Ans: Use the "Animations" tab to add effects to text or objects.

15. What is the function of the "Slide Show" tab in PowerPoint?

Ans: It lets you start and manage your slideshow presentation.

16. How do you align text to the center in a Word document?

Ans: Select the text, go to the "Home" tab, and click the Center alignment button in "Paragraph" section.

17. What is the purpose of using headings in a Word document?

Ans: Headings organize the content and make it easier to create a word document.

18. How do you insert a shape (like a circle or arrow) into a Word or PowerPoint file?

Ans: Click the "Insert" tab, then click "Shapes", and choose the shape you want.

19. How can you view a document before printing it in Word?

Ans: Click on "File" > "Print" to see a Print Preview of your document.

20. What is the purpose of using slide transitions in PowerPoint?

Ans: Transitions make the change between slides smoother and more interesting during a presentation.

21. How would you apply strike through effect in your text?

Ans. Select the text and apply strike through effect from "Font" section in "Home" tab.





Practical Based Assessment 01



Instructions for Teachers

The teacher will divide students into groups and assign a specific practical to each group from given ones. Students are required to list the necessary apparatus, describe the procedure and note precautions. They should also record their observations in the Observation Table, if necessary. The teacher will conduct a Viva Voce with each student to evaluate their performance. The teacher will also provide guidance to students on any discrepancies in their work and award marks accordingly.

Roll No. _____

Class/ Section _____

Maximum Marks: 35

Time Allowed: 2 hours

1. Create a job cover letter using built-in templates of word processing software and save the file against your roll number.

- Perform the task on computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Create a presentation, apply basic transitions and animations to slides and text elements, respectively. Save the presentation with an appropriate file name.

- Perform the task on computer. (5)
- Write step by step procedure on answer sheet. (7)

2. Create a document and insert images, tables, and shapes, and then save the document.

- Perform the task on computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Design at least three slides in presentation software using relevant themes write introduction in first slide, insert a table in second slide and a chart in third slide. Save the presentation with an appropriate file name.

- Perform the task on computer. (5)
- Write step by step procedure on answer sheet. (7)

Practical Work on Copy (checked by Teacher) (5 Marks)

Viva Questions (6 Marks)

- How can you insert images, tables, and shapes, in your document?
- How can you apply basic transitions and animations to a presentation?
- Which option is used to insert a chart in a PowerPoint presentation?
- What is the function of the "Slide Show" in PowerPoint?
- What is the purpose of using slide transitions in PowerPoint?
- How can you apply strike through effect in word document?

Sr.No.	Evaluation Criteria/Tasks	Marks Allotted	Marks Obtained	Remarks





UNIT 2 Emerging Technologies

In this unit, we will practically learn about new and useful technologies that are changing the world. We will perform some practical tasks, like making simple circuits, using sensors, and creating paper circuits. These activities will help us understand how electronics work and how they are used in real life. We will also explore how to connect different components like LEDs, switches, sound sensors, and temperature sensors to build small projects.



PRACTICAL 10

Constructing a simple LED circuit using a battery, switch and resistor.



Materials Required:

- 1 Light Emitting Diode (LED)
- 1 battery (9V or 3V with battery holder)
- 1 switch (push button or toggle switch)
- 1 resistor (220Ω or 330Ω)
- Connecting wires (Jumper Cables)

Steps:

1. Connect positive wire of battery to one side of the switch.
2. Connect the other side of the switch to one end of the resistor.
3. Connect the LED
 - Attach the long leg (positive) of the LED to the other end of the resistor.
 - Connect the short leg (negative) of the LED to the negative wire of the battery.
4. Complete the Circuit (as shown in Figure 2.1)
 - Make sure all parts are connected properly.
 - When you press or turn on the switch, the LED should light up.

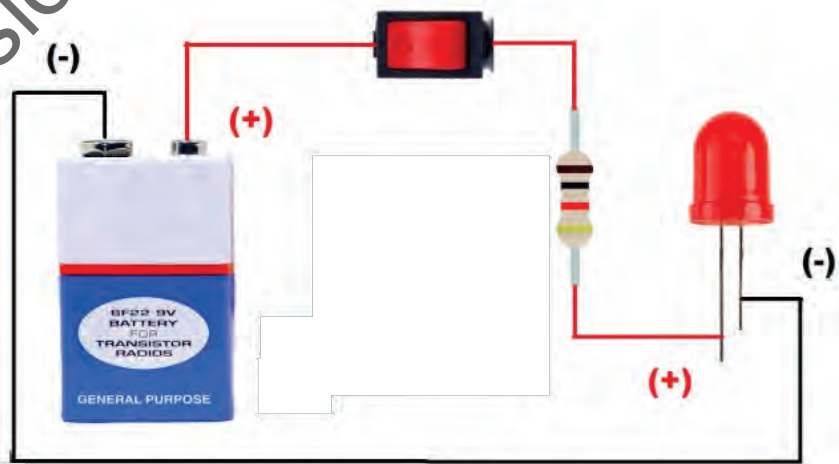


Figure 2.1: A Simple Circuit With a Battery, Switch, And LED



**PRACTICAL 11**

Design a functional paper-circuit using copper tape, an LED and a coin cell battery.

**Materials Required:**

- 1 sheet of paper (A4 or card paper)
- Copper tape
- 1 LED
- 1 coin cell battery (3V – like CR2032)
- Tape or glue
- Pencil or printed template

Circuit Setup:**1. Draw the Circuit Path**

- On the paper, draw a "U" shape path for the circuit.
- Mark where the LED and battery will be deployed.

2. Apply Copper Tape

- Stick copper tape along the drawn path.
- Leave a small gap where the LED legs will be placed.

3. Place the LED

- Insert the LED legs across the gap
- Long leg (positive) on the positive copper line
- Short leg (negative) on the negative copper line
- Use clear tape to fix the LED in place.

4. Add the Battery

- Place the battery at the end of the copper tape path.
- Positive side (+) should touch the copper line going to the LED's long leg.
- Fold part of the paper to press the battery in contact.

5. Complete the Circuit (as shown in Figure 2.2)

- Press down on the battery.
- If all connections are correct, the LED will light up.

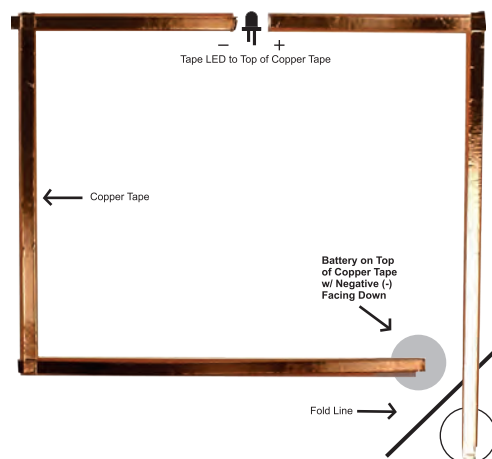


Figure 2.2 A Paper-Circuit Using Copper Tape and LED

**PRACTICAL 12**

Build series and parallel LED circuits to observe brightness and behaviour.

**Materials Required:**

- Breadboard or jumper wires
- 2 LEDs
- 2 resistors (220Ω or 330Ω)
- 9V battery (or 3V coin cell)
- Battery connector or holder
- Connecting wires

Part A: Series LED Circuit**Steps:**

1. Connect the First LED
 - Connect the long leg (positive) of the first LED to one end of the resistor.
 - Connect the other leg of the LED to the long leg of the second LED.
2. Connect the short leg of the second LED to the negative terminal of the battery.
3. Connect the free end of the resistor to the positive terminal of the battery.
4. Observe (as shown in Figure 2.3 Part A)
 - Both LEDs should turn on, but they will be dim in a series circuit.

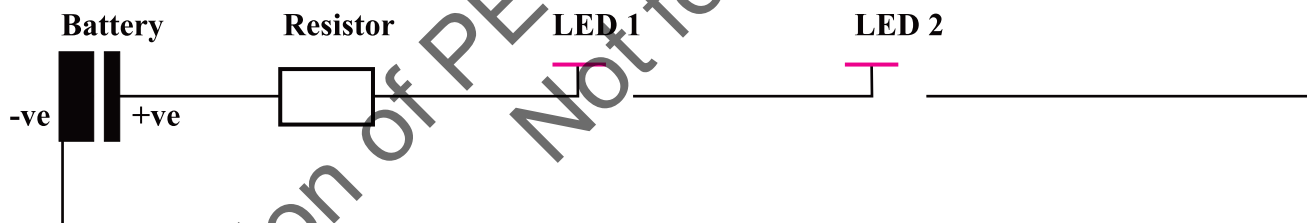


Figure 2.3: Part A: Series LED Circuit

Part B: Parallel LED Circuit**Steps:**

1. Connect both resistors to the positive terminal of the battery.
2. Attach LEDs in Parallel
 - Connect the long leg of each LED to a resistor.
 - Connect both short legs of the LEDs to the negative terminal of the battery.
3. Observe (as shown in Figure 2.3 Part B)
 - Both LEDs will turn on, and they will be brighter than in the series circuit.



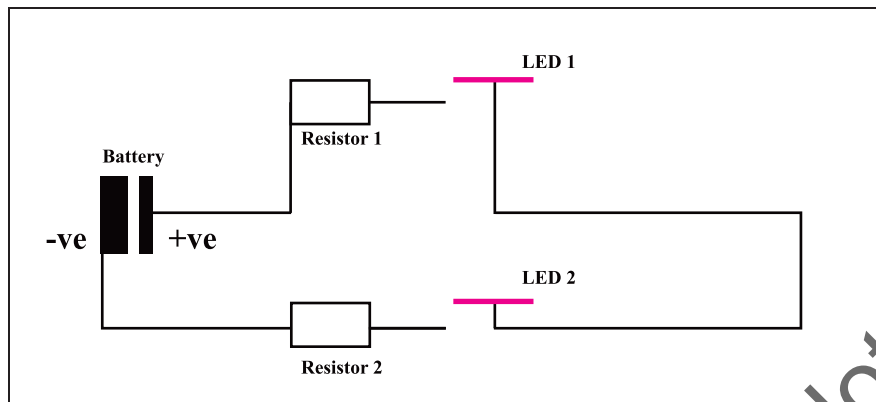


Figure 2.4: Part B: Parallel LED Circuit

**PRACTICAL 13**

Setup an LM35 temperature sensor with Arduino UNO to measure ambient temperature.

**Materials Required:**

- Arduino UNO board
- LM35 Temperature Sensor
- Breadboard
- Jumper wires
- USB cable
- Computer with Arduino IDE software

Circuit Setup:

1. Place the LM35 sensor on the breadboard.
2. Connect (as shown in Figure 2.5):
 - VCC pin of LM35 to 5V pin on Arduino.
 - GND pin of LM35 to GND pin on Arduino.
 - OUT pin of LM35 to A0 (analog pin 0) on Arduino.

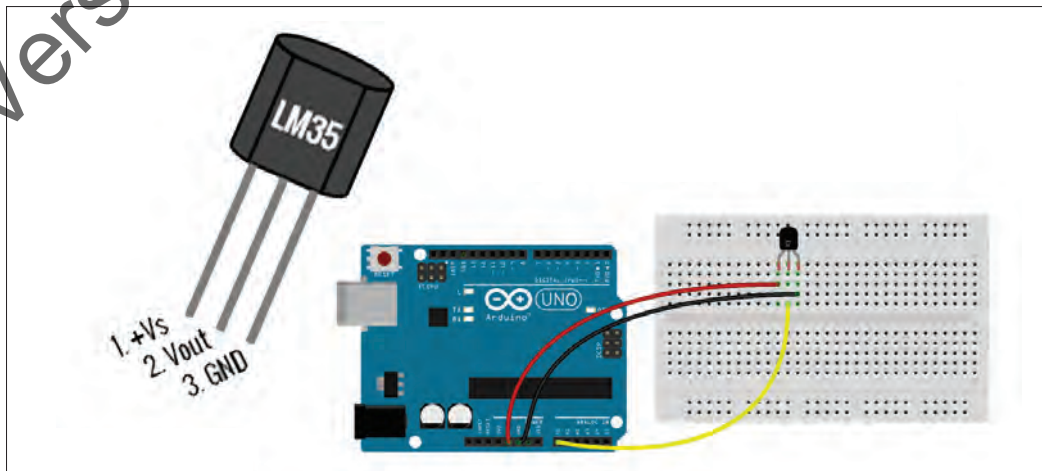


Figure 2.5: A Temperature Sensor





Arduino Code:

```
void setup() {  
  Serial.begin(9600); // Start serial communication  
}  
void loop() {  
  int sensorValue = analogRead(A0); // Read sensor value  
  float voltage = sensorValue * (5.0 / 1023.0); // Convert value to voltage  
  float temperatureC = voltage * 100; // Convert voltage to Celsius  
  Serial.print("Temperature: ");  
  Serial.print(temperatureC);  
  Serial.println(" °C");  
  delay(1000); // Wait 1 second before next reading  
}
```



PRACTICAL 14

Develop a sound-activated alarm system with Arduino using time delay.



Materials Required:

- Arduino UNO board
- Sound Sensor Module (like KY-038 or similar)
- 1 LED (any color)
- 220-ohm resistor
- Breadboard
- Jumper wires
- USB cable
- Computer with Arduino IDE

Circuit Setup (as shown in Figure 2.6):

- Place the Sound Sensor and LED on the breadboard.
- Connect the Sound Sensor:
 - VCC pin to 5V on Arduino
 - GND pin to GND on Arduino
 - OUT pin to Pin 2 on Arduino
- Connect the LED:
 - Long leg (positive) to Pin 4 through a 220-ohm resistor.
 - Short leg (negative) to GND.



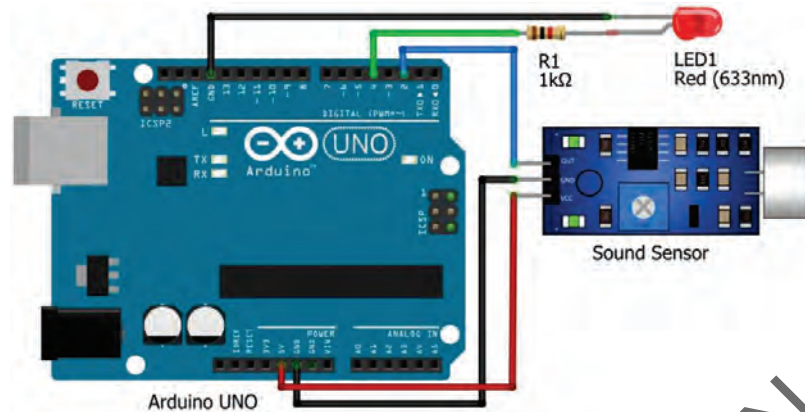


Figure 2.6: An Alarm System Using a Sound Sensor

Arduino Code:

```
int soundSensor = 2; // Sound sensor connected to pin 2
int led = 4;        // LED connected to pin 4
int soundState = 0; // Variable to store sensor status

void setup() {
  pinMode(soundSensor, INPUT);
  pinMode(led, OUTPUT);
  Serial.begin(9600);
}

void loop() {
  soundState = digitalRead(soundSensor);
  if (soundState == HIGH) {
    digitalWrite(led, HIGH); // Turn LED ON
    Serial.println("Sound Detected!");
    delay(3000);             // Keep LED ON for 3 seconds
    digitalWrite(led, LOW);  // Turn LED OFF
  }
}
```



PRACTICAL 15

Build an Automatic Fan using Arduino.

Develop a system that turns On/Off using motion sensing and controls its speed automatically based on temperature change.



Materials Required:

- Arduino UNO
- PIR Motion Sensor
- Transistor
- 7805 Voltage Regulator
- LM35 Temperature Sensor



- 100-ohm Resistor
- Breadboard
- Axial Fan

Circuit setup (as shown in Figure 2.7):

- Firstly, the PIR sensor signal pin is connected to Arduino pin 12, and the VCC pin of PIR is connected to Arduino pin 13. The ground is connected to GND on a breadboard.
- The axial fan is connected to the Arduino board via a transistor. The transistor pin is connected to the Arduino digital pin 3 and other pin of the transistor is connected to the axial fan. The third pin is connected to the GND on a breadboard.
- The temperature sensor LM35 has 3 pins: VCC, Signal pin, and GND.
- A voltage regulator is used to convert the 12V to 5V for all the sensors and Arduino.

Arduino code:

```
#include <avr/io.h>
long unsigned int lowIn;
long unsigned int pause = 500;
boolean lockLow = true;
boolean takeLowTime;
const int pSuhu = A0;
float suhu, outputlm, adc;
int pirPin = 12;
int pirPos = 13;
int kipas = 3;
void setup(){
    Serial.begin(9600);
    pinMode(pirPin, INPUT);
    pinMode(pirPos, OUTPUT);
    pinMode(kipas, OUTPUT);
    digitalWrite(pirPos, HIGH);
    pinMode(pSuhu, INPUT);
    while (digitalRead(pirPin) == HIGH)
    {
        delay(500);
        Serial.print(".");
    }
    Serial.println("SENSOR ACTIVE");
}
void lm35(){
    adc = analogRead(pSuhu);
    suhu = adc / 2.0479;
```





```
outputlm=adc*4.883;
if (suhu >= 25)
{
    analogWrite(kipas,50);
    Serial.println("Kecepatan=50");
}
if (suhu >= 30)
{
    analogWrite(kipas,100);
    Serial.println("Kecepatan=100");
}
if (suhu >= 35)
{
    analogWrite(kipas,150);
    Serial.println("Kecepatan=150");
}
if (suhu >= 40)
{
    analogWrite(kipas,200);
    Serial.println("Kecepatan=200");
}
if (suhu >= 45)
{
    analogWrite(kipas,255);
    Serial.println("Kecepatan=255");
}
}
void loop(){
    if(digitalRead(pirPin) == HIGH){
        lm35();
        if(lockLow){
            lockLow = false;
            Serial.println("---");
            Serial.print("motion detected at ");
            Serial.print(millis()/1000);
            Serial.println(" sec");
            delay(50);
        }
        takeLowTime = true;
    }
}
```





```

if(digitalRead(pirPin) == LOW){
    digitalWrite(kipas,LOW);
    if(takeLowTime){
        lowIn = millis();
        takeLowTime = false;
    }
    if(!lockLow && millis() - lowIn > pause){
        lockLow = true;
        Serial.print("motion ended at ");
        Serial.print((millis() - pause)/1000);
        Serial.println(" sec");
        delay(50);
    }
}
delay(1000);
Serial.print(", Suhu: ");
Serial.print(suhu);
Serial.println();
delay(1000);
Serial.print(", ADC: ");
Serial.print(adc);
Serial.println();
delay(1000);
}

```

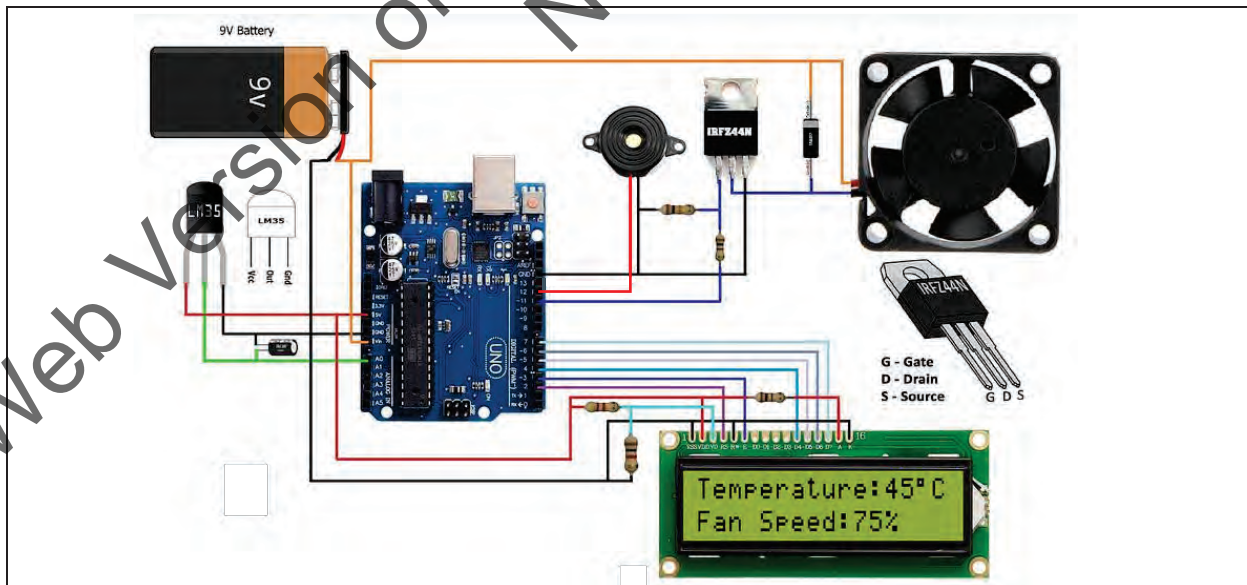


Figure 2.7: A Light-Controlled Fan System



**Arduino code:**

```
// Pin Definitions
const int LDR_PIN = A0; // LDR connected to A0
const int FAN_PIN = 9; // Fan/LED control pin
// Threshold (Adjust as needed)
const int LIGHT_THRESHOLD = 500; // Lower means darker
void setup() {
  pinMode(FAN_PIN, OUTPUT);
  Serial.begin(9600); // For debugging
}
void loop() {
  int lightLevel = analogRead(LDR_PIN);
  Serial.println(lightLevel); // See values in Serial Monitor
  if (lightLevel < LIGHT_THRESHOLD) {
    digitalWrite(FAN_PIN, HIGH); // Turn ON fan/LED
  } else {
    digitalWrite(FAN_PIN, LOW); // Turn OFF fan/LED
  }
  delay(500); // Small delay to stabilize readings
}
```

**PRACTICAL 16****Develop a Password-based door lock security system using Arduino.**

A user enters a password using a keypad. If the password is correct, a servo motor unlocks the door and then locks it again.

**Materials Required:**

- Arduino Nano (or compatible)
- 16x2 LCD Display
- 10k Pot
- SG-90 Servo motor
- 4x4 Keypad
- Buzzer
- Zero PCB
- 12v Power Supply

Circuit Setup (as shown in Figure 2.8):**4x4 Keypad:**

- 8 wires connected to Arduino digital pins (likely D2–D9).
- Provides user input for password/PIN.

16x2 LCD Display (parallel):

- RS, E, D4–D7 connected to Arduino digital pins.





- VSS, RW, and K to GND.
- VDD and A to +5V.
- Potentiometer adjusts LCD contrast (middle pin to V0, side pins to GND and 5V).

Potentiometer:

- Middle pin to V0 pin of LCD (contrast).
- Other two pins to GND and +5V.

Buzzer:

- One side to Arduino digital pin (alarm output).
- Other side to GND.

Servo Motor:

- Signal wire to Arduino digital pin (e.g., D10 or D11).
- VCC to +5V.
- GND to GND.

Arduino Nano:

- Powered by USB or 5V supply.
- Manages inputs (keypad), outputs (LCD, buzzer, servo).

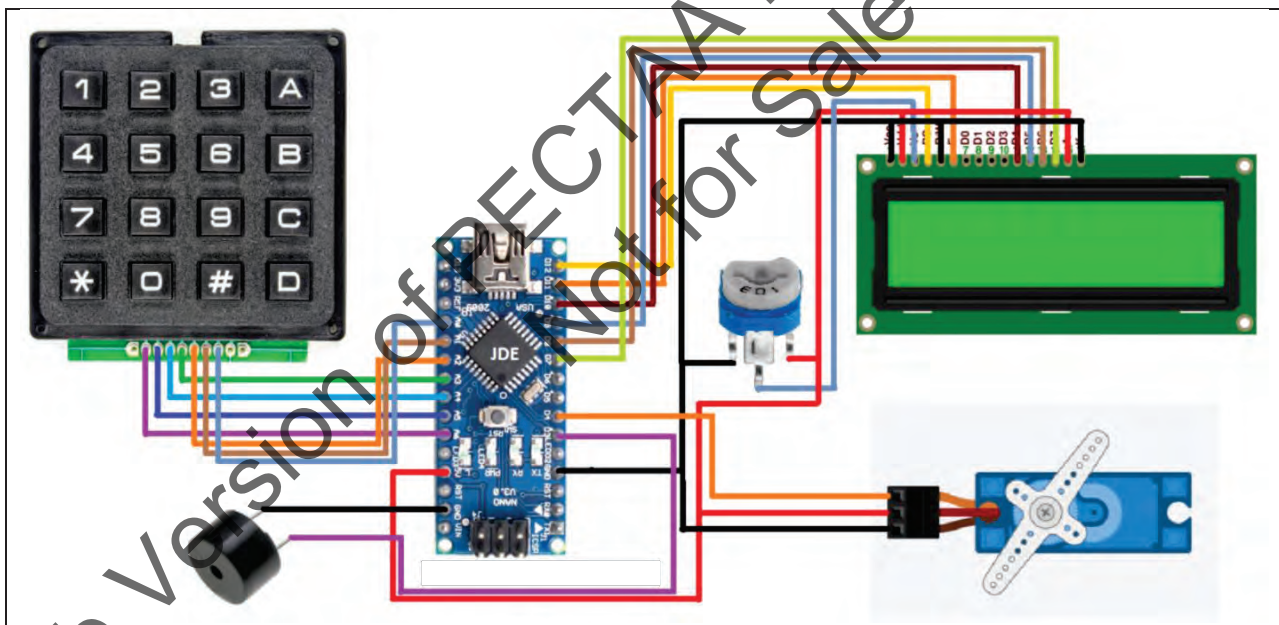


Figure 2.8: A Password-Protected Door Lock System

Arduino code:

```
#include <Keypad.h>
#include <LiquidCrystal.h>
#include <Servo.h>
Servo myservo;
LiquidCrystal lcd(12, 11, 10, 9, 8, 7);
```





```
const byte rows = 4;
const byte cols = 3;
char key[rows][cols] = {
    { '1', '2', '3' },
    { '4', '5', '6' },
    { '7', '8', '9' },
    { '*', '0', '#' }
};

byte rowPins[rows] = { A0, A1, A2, A3 };
byte colPins[cols] = { A4, A5, A6 };
Keypad keypad = Keypad(makeKeymap(key), rowPins, colPins, rows, cols);
char* password = "4567";
int currentposition = 0;
int redled = 6;
int greenled = 5;
int buzz = 4;
int invalidcount = 0;

void setup() {
    Serial.begin(9600);
    pinMode(redled, OUTPUT);
    pinMode(greenled, OUTPUT);
    pinMode(buzz, OUTPUT);
    myservo.attach(4);
    lcd.begin(16, 2);
    displayScreen();
}

void loop() {
    if (currentposition == 0) {
        displayScreen();
    } // end if
    char code = keypad.getKey();
    if (code != NO_KEY) {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("PASSWORD:");
        lcd.setCursor(7, 1);
        for (int i = 0; i <= currentposition; ++i) {
            lcd.print("*");
            keypress();
        }
    }
}
```





```
// end for
if (code == password[currentposition]) {
    ++currentposition;
    if (currentposition == 4) {
        unlockdoor();
        currentposition = 0;
    } //end if
} else {
    ++invalidcount;
    incorrect();
    currentposition = 0;
} // end else
if (invalidcount == 5) {
    torture1();
}
if (invalidcount == 8) {
    torture2();
}
}
}

void unlockdoor() {
    delay(900);
    lcd.clear();
    lcd.setCursor(1, 0);
    lcd.print("Access Granted");
    lcd.setCursor(4, 1);
    lcd.print("WELCOME!!");
    unlockbuzz();
    for (int pos = 180; pos >= 0; pos -= 5) {
        myservo.write(pos);
        delay(5);
    }
    delay(2000);
    counterbeep();
    delay(1000);
    for (int pos = 0; pos <= 180; pos += 5) {
        myservo.write(pos);
        delay(15);
    }
    lcd.clear();
}
```





```
    displayscreen();
}
void incorrect() {
    delay(500);
    lcd.clear();
    lcd.setCursor(1, 0);
    lcd.print("CODE INCORRECT");
    lcd.setCursor(4, 1);
    lcd.print("GET A WAY!!!");
    Serial.println("CODE INCORRECT YOU ARE UNAUTHORIZED");
    digitalWrite(redled, HIGH);
    digitalWrite(buzz, HIGH);
    delay(3000);
    digitalWrite(redled, LOW);
    digitalWrite(buzz, LOW);
    displayscreen();
}

void keypress() {
    digitalWrite(buzz, HIGH);
    delay(50);
    digitalWrite(buzz, LOW);
}

void displayscreen() {
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print("*ENTER THE CODE*");
    lcd.setCursor(1, 1);
    lcd.print("TO _/_ (OPEN)!!");
}

void unlockbuzz() {
    for (int i = 0; i < 2; i++) {
        digitalWrite(buzz, HIGH);
        delay(80);
        digitalWrite(buzz, LOW);
        delay(80);
    }
}

void counterbeep() {
    delay(1200);
}
```





```
lcd.clear();
digitalWrite(buzz, HIGH);
lcd.setCursor(2, 0);
lcd.print("GET IN WITHIN:");
lcd.setCursor(4, 1);
lcd.print("5");
delay(1000);
for (int i = 4; i >= 1; i--) {
    digitalWrite(buzz, LOW);
    lcd.clear();
    lcd.setCursor(2, 0);
    lcd.print("GET IN WITHIN:");
    lcd.setCursor(4, 1);
    lcd.print(i);
    delay(1000);
    digitalWrite(buzz, HIGH);
}
digitalWrite(buzz, LOW);
lcd.clear();
lcd.print("RE-LOCKING");
delay(1500);
lcd.clear();
lcd.print("LOCKED!");
delay(500);
}
void torture1() {
    lcd.clear();
    lcd.setCursor(2, 0);
    lcd.print("WAIT FOR 15 SECONDS");
    digitalWrite(buzz, HIGH);
    delay(15000);
    digitalWrite(buzz, LOW);
    lcd.clear();
}
void torture2() {
    lcd.clear();
    lcd.setCursor(2, 0);
    lcd.print("WAIT FOR 1 MINUTE");
    digitalWrite(buzz, HIGH);
    delay(60000);
```





```
digitalWrite(buzz, LOW);
lcd.clear();
}
```



PRACTICAL 17

Develop a temperature monitoring system with an alert using Arduino.

Build a system that monitors temperature and turns ON an alert (LED or buzzer) when the temperature exceeds a defined threshold.



Materials Required:

- DHT11 Temperature and Humidity Sensor
- Arduino Uno (or any compatible microcontroller)
- Jumper wires
- 220-ohm resistor
- LED (any color)
- MH-FMD Piezo Buzzer Module (you may use an ordinary piezo buzzer)

Circuit setup (as shown in Figure 2.9):

Connect the DHT11 sensor to the Arduino:

- VCC pin of the DHT11 to 5V pin of the Arduino.
- Data/Signal pin of the DHT11 to digital pin 5 of the Arduino.
- GND pin of the DHT11 to GND pin of the Arduino.

Connect the LED:

- Anode (long leg) of the LED to digital pin 6 of the Arduino through a 220-ohm resistor.
- Cathode (short leg) of the LED to GND pin of the Arduino.

Connect the MH-FMD Piezo Buzzer Module:

- Connect the VCC pin to 5V pin of the Arduino.
- Connect the GND pin of the Piezo Buzzer Module to GND pin of the Arduino.
- Connect the I/O pin to pin 10 of the Arduino.

Arduino code:

```
#include <dht.h>
dht DHT11;
#define DHT11_PIN 5 // Digital pin connected to the DHT sensor
int ledPin = 6;
int buzzerPin = 10;
float tempThreshold = 35.0;
void setup() {
    pinMode(ledPin, OUTPUT);
    pinMode(buzzerPin, OUTPUT);
    Serial.begin(9600);
}
void loop() {
```





```

float chk = DHT11.read11(DHT11_PIN);
Serial.print("Temperature = ");
Serial.println(DHT11.temperature);
if (DHT11.temperature >= tempThreshold) {
    digitalWrite(ledPin, HIGH);
    tone(buzzerPin, 1000); // Turn on the buzzer
    delay(1000);           // Wait for 1 second
    digitalWrite(ledPin, LOW);
    noTone(buzzerPin);     // Turn off the buzzer
}
delay(2000); //wait for 2 seconds to take the next reading
}

```

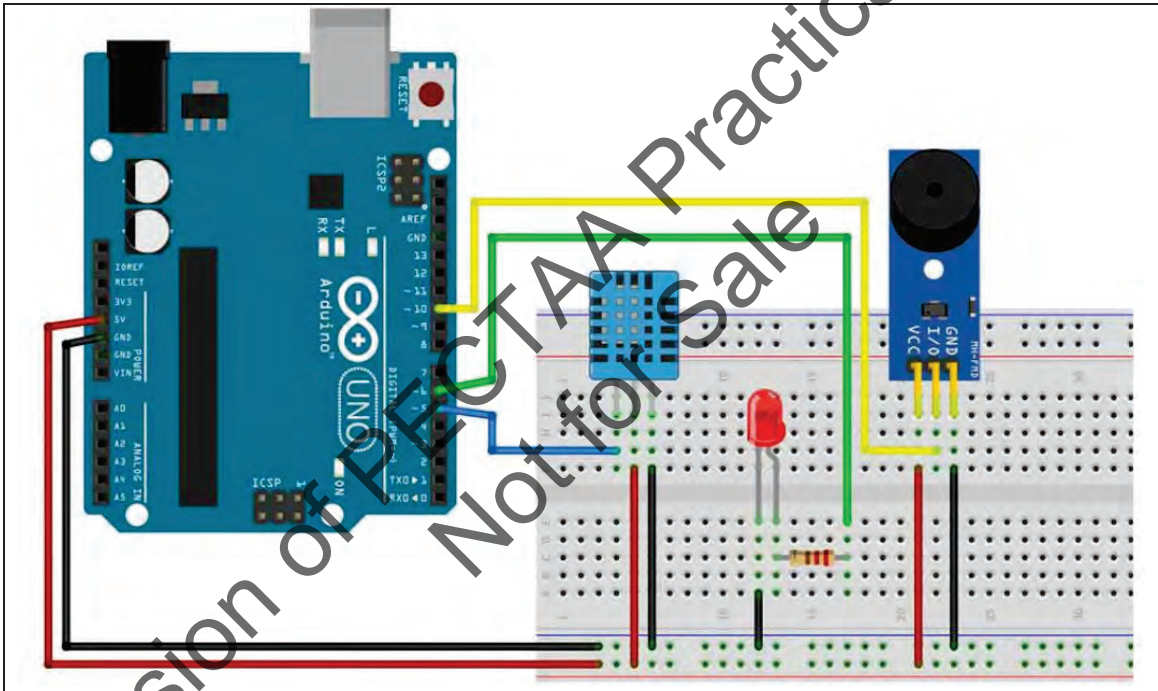


Figure 2.9: A Temperature Monitoring System With Alert

Viva Questions and Answers

1. What are the three main components in a simple LED circuit?

Ans: Battery, Switch, and LED.

2. What is the purpose of the switch in a circuit?

Ans: To turn the circuit ON or OFF.

3. What material is used in a paper circuit to connect components?

Ans: Copper tape





4. Why is copper tape used in paper circuits?

Ans: Because it conducts electricity.

5. What is the difference between series and parallel circuits?

Ans: In series, components are connected one after another. In parallel, they are connected side by side.

6. Which circuit type (series or parallel) makes LEDs brighter?

Ans: Parallel circuit.

7. What sensor is used to measure temperature?

Ans: Temperature sensor (e.g., LM35 or DHT11).

8. What happens when the temperature sensor detects heat?

Ans: It sends a signal to show or measure the temperature.

9. What does a sound sensor detect?

Ans: It detects sound or noise.

10. What is the use of an alarm system in a sound sensor project?

Ans: To make a buzzer or light turn on when sound is detected.

11. What does an LED do when electricity flows through it?

Ans: It lights up.

12. What power source is commonly used in small electronic projects?

Ans: A battery.

13. What tool is used to check if a circuit is complete?

Ans: A multimeter.

14. What happens if you connect an LED the wrong way?

Ans: It won't light up.

15. What is a resistor used for in a circuit?

Ans: To limit the flow of current.

16. Why is it important to connect components correctly in a circuit?

Ans: To make sure the circuit works and components don't get damaged.

17. What part of a circuit acts like a brain to control signals?

Ans: A microcontroller.

18. What type of sensor can detect light?

Ans: A light sensor or LDR (Light Dependent Resistor).

19. What component makes sound in a sound-based project?

Ans: A buzzer.

20. How can you make a paper circuit interactive?

Ans: By adding a switch or sensor.





Practical Based Assessment 02



Instructions for Teachers

The teacher will divide students into groups and assign a specific practical to each group from given ones. Students are required to list the necessary apparatus, describe the procedure and note precautions. They should also record their observations in the Observation Table, if necessary. The teacher will conduct a Viva Voce with each student to evaluate their performance. The teacher will also provide guidance to students on any discrepancies in their work and award marks accordingly.

Roll No. _____

Class/ Section _____

Maximum Marks: 35

Time Allowed: 2 hours

- Construct a simple LED circuit using a battery, switch, and resistor. Write down the material required and steps to make this circuit functional.

- Perform the task and execute it. (5)
- Write step by step procedure on answer sheet. (7)

OR

Setup an LM35 temperature sensor with Arduino UNO to measure temperature of your classroom.

- Perform the task and execute it. (5)
- Write step by step procedure on answer sheet. (7)

- Build series and parallel LED circuits to observe brightness and behavior of the circuit. Write down the material required and steps to make this circuit functional.

- Perform the task and execute it. (5)
- Write step by step procedure on answer sheet. (7)

OR

Design Password-based door lock security system using Arduino.

- Perform the task and execute it. (5)
- Write step by step procedure on answer sheet. (7)

Practical Work on Copy (checked by Teacher) (5 Marks)

Viva Questions (6 Marks)

- What is the purpose of the switch in a circuit?
- Why is copper tape used in paper circuits?
- What sensor is used to measure temperature?
- What happens when the temperature sensor detects heat?
- What is a resistor used for in a circuit?
- What type of sensor can detect light?

Sr.No.	Evaluation Criteria/Tasks	Marks Allotted	Marks Obtained	Remarks





UNIT 3

Graphic Designing and Multimedia

In this unit, we will practically learn basic graphic designing and multimedia skills. We will design a poster for a Parent-Teacher Meeting Day using tools like Canva or Poster Prep. We will also create a flyer to promote a Sports Day event. Then, we will design two images with both Urdu and English text, using the correct size and adding the school logo. Finally, we will learn how to create a Quick Response (QR) code for a web link, such as a YouTube video or channel. These activities will help us understand how to make attractive designs for school and online use.



PRACTICAL 18

Design a poster for a parent-teacher meeting day using any graphic designing tool (Canva, Poster Prep or any other design tool).

Steps:

The poster is supposed to include the following:

1. Poster Size: A4 (210 × 297 mm)
2. Title: “Parent-Teacher Meeting Invitation”
(Make the title bold, large, and centered at the top)
3. Background:
Use a light background color (e.g., light blue, soft yellow, or pale green)
4. Add the following meeting details:
 - Date: [Proposed date here]
 - Time: 9:30 AM to 12:30 PM
 - Venue: School Auditorium (Main Hall)
(Include small icons for date, time, and venue)
5. Invitation Message:
Write a message of your choice. For example:
“We warmly invite you to discuss your child’s progress. Let’s work together for a brighter future!”
6. Graphics & Decoration:
Add decorative elements like:
 - School, books, children, stars, pencils (cartoon-style)
7. Contact Information:
Add this at the bottom:
“For queries, please call: 0123-1234567”
8. Design Guidelines:
 - Use only 1 or 2 fonts
 - Maintain good text readability
 - Ensure space/margins around the content





9. Save the Poster with an appropriate file name.
(Example: 10532.pdf) (as shown in Figure 3.1)

Parent-Teacher Meeting Invitation

 **Date: Saturday, 15th June 2025**

 **Time: 9:30 AM to 12:30 PM**

 **Venue: School Auditorium (Main Hall)**

We warmly invite you to discuss your child's progress. Let's work together for a brighter future!

For queries, Please call: 0123-1234567

Figure 3.1: Parent-Teacher Poster



**PRACTICAL 19**

Design a Flyer for a sports day for the promotions using any graphic designing tool (Canva, Poster Prep or any other basic design tool).

Steps:

1. Open a Graphic Design Tool
 - Use Canva, Poster Prep, or Microsoft Word / PowerPoint.
 - Sign in or use as a guest.
2. Create a New Flyer and Choose Flyer size (A5 or A4).
3. Set Background
 - Use a bright background (e.g., Sky Blue, Bright Green, Light Orange).
 - Alternatively, use a sports-related background.
4. Add Title
 - Insert a heading: "Annual Sports Day 2025!"
 - Use a bold and large font.
5. Insert Event Details
 - Add the following information:
 - Date: [proposed date here]
 - Time: 8:00 AM to 2:00 PM
 - Venue: School Sports Ground



Figure 3.2: Flyer For a Sports Day





6. Add a Slogan
 - Example slogan:
“Join us for a day full of fun, games, and champions! Bring your energy and school spirit!”
7. Add Decorative Elements
 - Include relevant images or icons such as:
 - Trophies
 - Running kids
 - Cheering crowd
8. Add Contact Info (Optional). For example: *“For more information, contact 0123-1234567”*
9. Finishing Touches
 - Use 2–3 fonts maximum.
 - Make sure the design is clean and all text is readable.
10. Save the Flyer
 - Download or export the flyer as a PDF or PNG.
 - Save it with an appropriate file name (Example: 10532.pdf). (as shown in Figure 3.2)

**PRACTICAL 20**

Design two images (with Urdu and English text) with required dimensions containing a school logo.

Steps:

1. Image Size:
 - Width: 600 pixels
 - Height: 400 pixels



Figure 3.3: Part-A: Admission Advertisement English





2. English Image Instructions:

- Use a background that represents school (e.g., books, classroom, students).
- Add your school logo.
- Write the following message in a large, bold font:
"Join us for a better future"
- Align the text clearly in the center or top area.
- Place the logo at the top-center or any corner (as shown in Figure 3.3 Part-A).

3. Urdu Image Instructions:

- Duplicate the layout of the English image.
- Replace the English message with the following Urdu message:
"ایک بہتر مستقبل کے لیے ہمارے سکول میں داخلہ لیں۔"
- Use an Urdu-supporting font (like *Noto Nastaliq Urdu*).
- Align the text from right to left.
- Keep the same background and logo as the English version (as shown in Figure 3.3 Part-B)



Figure 3.3: Part-B: Admission Advertisement in Urdu

4. Saving Instructions:

- Save the English image as: English_Image.png or English_Image.jpg
- Save the Urdu image as: Urdu_Image.png or Urdu_Image.jpg



**PRACTICAL 21****Create a Quick Response (QR) code for a web link (Youtube video/ channel).****Steps:**

1. Copy the web link
 - Open the website you want to share
 - Copy the full link (URL)
Example: <https://www.youtube.com/@PCTBOnlineAcademy>
2. Open a QR Code Maker
 - Search: "Free QR Code Generator" in Google search box
 - Open any website that creates QR codes (e.g www.qr-code-generator.com)
3. Paste the Link
 - Find the box that says "Enter URL" or "Paste Link"
 - Paste the link you copied
4. Create the QR Code
 - Click on the button that says "Generate", "Create QR Code", or similar
 - A QR code will appear on the screen (as shown in Figure 3.4)
5. Save the QR Code
 - Click on Download or Save
 - Save the QR code image to your computer, mobile, or USB
 - You can print it or add it to your project
6. Test the QR Code
 - Use your mobile phone camera or a QR scanner app
 - Point the camera at the QR code and scan it
 - It should open the website link you used

**Figure 3.4: QR Code Of a Youtube Channel/Video**



Viva Questions and Answers

1. When and how should you design a poster for Parent-Teacher Meeting (PTM) day?

Ans: Design the poster before the PTM using a graphic design tool like Canva or Poster Prep by adding the school name, date, time, and relevant images.

2. What should you include and how can you design a flyer for sports day promotion?

Ans: Use a flyer template on tools like Canva or Poster Prep, and add the event name, date, and sports-related images to promote the event.

3. How can you create two images in Urdu and English?

Ans: Use a design tool to create two images with specific dimensions, add Urdu and English text, and include the school logo.

4. Where can you generate a QR code and how do you use it for a YouTube video?

Ans: Go to a free online QR code generator, paste the YouTube link, and download the generated QR code image.

5. Which tool can be used to design school event posters easily?

Ans: Canva is a simple and free online tool to create posters with ready-made templates.

6. Why do we use flyers for events like sports day?

Ans: Flyers help promote events by sharing important information in a creative way.

7. Which file format can we download from Canva?

Ans: Canva allows downloading designs as PNG, JPG, or PDF files.

8. How can you add Urdu text in Canva?

Ans: Copy Urdu text from a typing tool or website and paste it into a text box in Canva.

9. What is the purpose of a QR code for a YouTube video?

Ans: QR codes make it easy for people to open a video by scanning the code with their phone.

10. Where can you find free templates for school flyers or posters?

Ans: You can find free templates in Canva, Adobe Express, or PosterMyWall.

11. What type of images can you add to a school event poster?

Ans: You can add images of students, school buildings, or relevant event activities.

12. How can you share a poster designed in Canva with others?

Ans: You can download it or share a link directly from Canva.

13. When should you use a QR code in a school project?

Ans: When you want to give quick access to a video, website, or online form.

14. What information should be included on a Parent-Teacher Meeting flyer?

Ans: School name, date, time, venue, and contact details.

15. How can you customize a flyer template in PosterMyWall?

Ans: By editing text, changing images, and adjusting colors to match your theme.

16. What's the benefit of adding both Urdu and English to a design?

Ans: It makes the design readable for a wider audience, including both Urdu and English speakers.





17. Where can you upload your school logo to use in your designs?

Ans: You can upload it directly into the design tool like Canva or PosterMyWall.

18. Why is choosing the correct size important for posters or images?

Ans: To ensure they print clearly and fit the space where they will be displayed.

19. What makes a flyer attractive to readers?

Ans: Bright colors, clear text, relevant images, and a clean layout.

20. How do you know if your QR code works properly?

Ans: Test it by scanning it with a mobile phone to see if it opens the correct link.





UNIT 4 Web Development and E-Commerce

In this unit, we will practically learn the basics of web development and online businesses. We will start by creating a simple HTML page with headings, text, images, and links. Then, we will make a login form using textboxes and set their font size. After that, we will use JavaScript to check if the login form is filled correctly. We will also design a bank account form with fields like account number, name, phone, and CNIC. Next, we will learn about the online platforms where we can start online business. Finally, we will list a product with its name, description, image, and price. These practical exercises will help us understand how websites and online stores work.



PRACTICAL 22

Create a simple HTML webpage that contains the heading, text, image and hyperlink.

Steps:

- 1: Open Notepad or any other text editor
- 2: Write This HTML Code

```
<!DOCTYPE html>
<html>
<head>
  <title>My First Webpage</title>
</head>
<body>
  <h1>Welcome to My Webpage</h1>
  <p>This is a simple HTML page made by a Grade 9 student. </p>
  
  <p>Click here to visit <a href="https://www.youtube.com/@PCTBOnlineAcademy"> PECTAA Online
Academy</a>.</p>
</body>
</html>
```

3: Save the file in a folder with “html” extension. For example, “mypage.html”.

4: Add your image by finding the logo of PECTAA on the Internet and save it as “PECTAA.png” in the same folder used in the above step.

5: Open the Webpage by double-clicking the HTML file. You will see the webpage shown in Figure 4.1.





Figure 4.1: A webpage showing a heading, some text, an image and a hyperlink



PRACTICAL 23

Develop an interactive Login Form that includes input fields for both username and password. The design specification requires that the font size within the textboxes be set to 20 pixels, ensuring clarity and ease of reading for the user. This implementation will adhere to basic principles of user interface design to promote usability and accessibility.

Steps:

- 1: Open a text editor.
- 2: Type the HTML Code

```
<!DOCTYPE html>
<html>
<head>
  <title>Login Form</title>
  <style>
    input {
      font-size: 20px;
      margin: 10px;
    }
  </style>
</head>
<body>
  <h2>Login Form</h2>
  <form>
    <label>Username:</label><br>
    <input type="text" name="username"><br>
    <label>Password:</label><br>
```





```
<input type="password" name="password"><br>
<input type="submit" value="Login">
</form>
</body>
</html>
```

3: Save the File, say “login.html”.

4: The HTML file should be opened in a web browser by double-clicking on the file. Upon doing so, a form will be displayed on the screen, as illustrated in Figure 4.2. It is important to note that this login form is currently non-functional, as it has not yet been connected to a web server for backend processing.

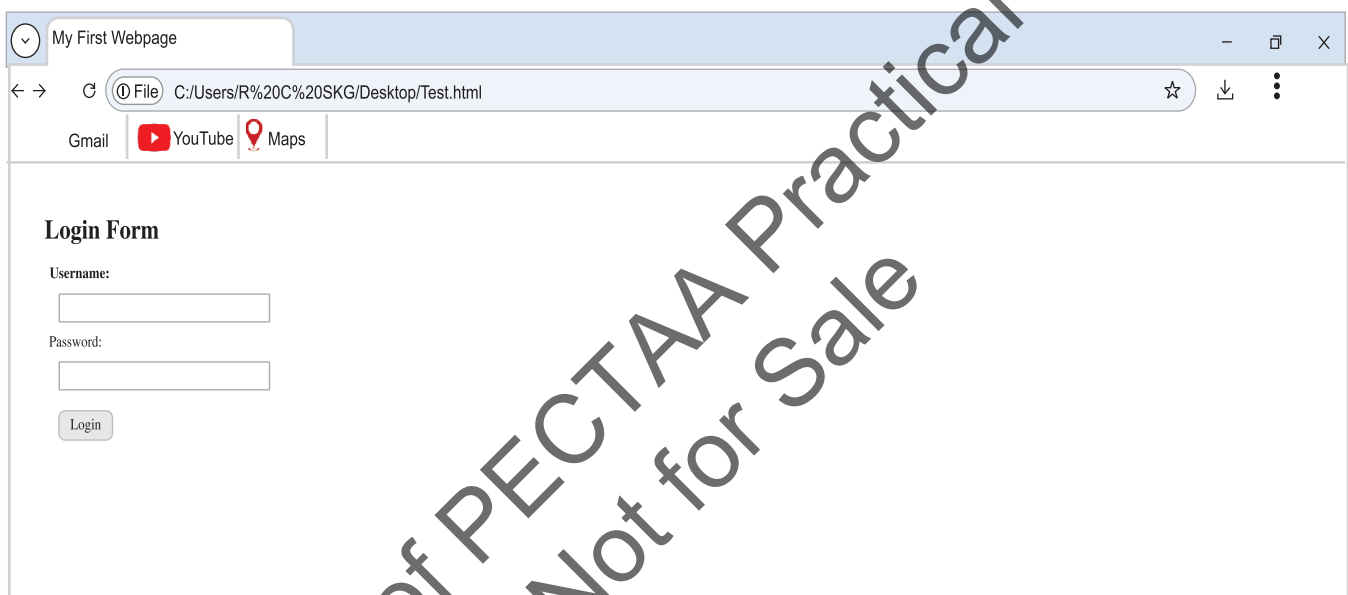


Figure 4.2: A Sample Login Form



PRACTICAL 24

Write a JavaScript code for form validation.

Steps:

- 1: Open Notepad or any text editor
- 2: Type the following HTML and JavaScript:

```
<!DOCTYPE html>
<html>
<head>
  <title>Login Form Validation</title>
  <script>
    function validateForm() {
```





```
var username = document.getElementById("username").value;
var password = document.getElementById("password").value;
if (username == "") {
    alert("Please enter username");
    return false;
}
if (password == "") {
    alert("Please enter password");
    return false;
}
if (username.length < 4) {
    alert("Username must be at least 4 letters");
    return false;
}
if (password.length < 6) {
    alert("Password must be at least 6 characters");
    return false;
}

return true;
}
</script>
</head>
<body>
<h2>Login Form</h2>
<form onsubmit="return validateForm()">
    Username: <input type="text" id="username" name="username"><br>
    Password: <input type="password" id="password" name="password">
    <input type="submit" value="Login">
</form>
</body>
</html>
```

3: Save the File

- Click File > Save As
- Save the file as login.html
- Select All Files in "Save as type"
- Click Save

4: Run the Program

- Go to the folder where you saved the file.





- Double-click the login.html file.
- The form will open in your browser (as shown in Figure 4.3)

The screenshot shows a web browser window displaying a login form titled "Login Form". The form contains two input fields: "Username:" and "Password:". Below the password field is a "Login" button. A validation message box is displayed below the form, showing a red circle icon, the text "www.w3schools.com", and the message "Please enter username". There is an "OK" button in the bottom right corner of the message box.

Figure 4.3: Login Form Validation

5: Test the Form

Try different inputs:

- Leave username or password empty → shows message
- Enter short username or password → shows warning
- Enter correct values → shows "Login successful!"





Practical Based Assessment 03



Instructions for Teachers

The teacher will divide students into groups and assign a specific practical to each group from given ones. Students are required to list the necessary apparatus, describe the procedure and note precautions. They should also record their observations in the Observation Table, if necessary. The teacher will conduct a Viva Voce with each student to evaluate their performance. The teacher will also provide guidance to students on any discrepancies in their work and award marks accordingly.

Roll No. _____

Class/ Section _____

Maximum Marks: 35

Time Allowed: 2 hours

- Design a Flyer for a Prize distribution ceremony of your School using any graphic designing tool (Canva, Poster Prep, or any other basic design tool).

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Create a registration form with Name, Father name, Class, Phone, Email, and Roll Number.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

- Create a Quick Response (QR) code for a web link of your school channel.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Create a product listing with product description, image, and price.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

Practical Work on Copy (checked by Teacher) (5 Marks)

Viva Questions (6 Marks)

- What should you include and how can you design a flyer for promotion of any function?
- Why do we use flyers for events like sports day?
- How can you share a poster designed in Canva with others?
- Why and how do you use JavaScript for login form validation?
- Which HTML tag is used to insert an image on a webpage?
- How do you insert a line break in HTML?

Sr.No.	Evaluation Criteria/Tasks	Marks Allotted	Marks Obtained	Remarks





PRACTICAL 25

Create a bank account form with account number, name, phone, email, address, CNIC, branch address and debit card number.

Steps:

- 1: Open Notepad or any text editor
- 2: Write the Code Below

```
<!DOCTYPE html>
<html>
<head>
  <title>Bank Account Form</title>
</head>
<body>
  <h2>Bank Account Opening Form</h2>
  <form>
    <label>Account Number:</label><br>
    <input type="text" name="account"><br><br>
    <label>Full Name:</label><br>
    <input type="text" name="name"><br><br>
    <label>Phone Number:</label><br>
    <input type="text" name="phone"><br><br>
    <label>Email:</label><br>
    <input type="email" name="email"><br><br>
    <label>Address:</label><br>
    <textarea name="address"></textarea><br><br>
    <label>CNIC Number:</label><br>
    <input type="text" name="cnic"><br><br>
    <label>Branch Address:</label><br>
    <input type="text" name="branch"><br><br>
    <label>Debit Card Number:</label><br>
    <input type="text" name="debitcard"><br><br>
    <input type="submit" value="Submit">
  </form>
</body>
</html>
```

- 3: Save the file with an appropriate file name like “bank_form.html”

- 4: Run the Program by double-clicking the file “bank_form.html”

The form will open in your browser (as shown in Figure 4.4).



Figure 4.4: Bank Account Form

**PRACTICAL 26****Steps:****Perform steps to set up an account on an E-Commerce platform.**

1. Visit the Official Website:
Open your web browser and visit the official website of the e-commerce platform or download its official mobile app.
2. Find the Sign-Up Option:
Look for 'Sign Up', 'Register', or 'Create Account' on the website or app.
3. Enter Your Personal Details:
Fill in required information such as Full Name, Email Address, or Mobile Number, and Password.
4. Verify Your Account:
Complete the verification process by entering the code sent to your email or mobile number.
5. Provide Shipping Address (Optional at Sign-Up):
Enter your full address, city, postal code, and contact number if required.
6. Set Up Payment Method (Optional at Sign-Up):
Add a payment method like Credit/Debit Card, Bank Transfer, or opt for Cash on Delivery where available.
7. Review and Accept Terms:
Read and agree to the platform's Terms & Conditions and Privacy Policy.
8. Account Setup Complete:
Your account is now ready to use. Start browsing, adding items to your cart, and shopping.
9. Optional: Personalize Your Account:
You can add a profile picture, save multiple addresses, and set language or currency preferences.

**PRACTICAL 27****Steps:****Create a product listing with product description, image and price.**

1. Login to your seller account
 - Open your web browser and go to:
<https://sellercenter.daraz.pk>
 - Enter your email and password, then click Login.
2. Go to the product section
 - On the seller dashboard, click:
"Products" > "Add Products"
3. Choose a product category
 - Select the right category for your product. For example:
 - Electronics → Mobile Accessories
 - Fashion → Men's Clothing
 - Beauty → Skin Care





- Click Next to continue.
4. Enter product details
 - Fill in the product form:
 - Product Name: Example – *Men's Cotton T-Shirt*
 - Brand: Write the brand name or select No Brand
 - Model: (Optional – can leave blank)
 - Color/Size: Choose the correct options
 5. Write a product description
 - In the description box, write short details. Example:
"High-quality cotton t-shirt. Soft, comfortable, and perfect for summer. Available in all sizes."
 6. Upload product image
 - Click the "Upload Image" button
 - Select and upload your product picture from your computer or mobile
 7. Enter price and quantity
 - Price: Example – Rs. 999
 - Stock: Number of items you have (e.g., 10)
 - SKU Code: (Optional – for your own use)
 8. Submit the listing
 - Click the "Submit" or "Publish" button
 - Your product will be added to the online store (after approval)



Viva Questions and Answers

1. What elements should you include and how do you create a simple HTML page?

Ans: Use HTML tags like `<h1>` for heading, `<p>` for text, `<img>` for images, and `<a>` for hyperlinks to create a basic webpage layout.

2. How and what should you include to create a login form with a specific font size?

Ans: Use an HTML `<form>` with `<input>` and `<label>` fields for username and password, and set the font size using `style="font-size:20px"`.

3. Why and how do you use JavaScript for login form validation?

Ans: Use JavaScript to ensure both username and password fields are filled before submitting the form, to prevent incomplete logins.

4. What information is needed and how can you design a bank account form?

Ans: Create an HTML form with multiple `<input>` fields to collect account number, name, phone, email, address, CNIC, branch address, and debit card number.



**5. Where and how do you set up an online store account?**

Ans: Go to daraz.pk, click on “Sign Up,” and fill in the necessary personal and store details to create your seller account.

6. When and how can you create a product listing on your store?

Ans: After logging into your store account, use the “Add Product” option to enter the product description, upload an image, and set a price.

7. Which HTML tag is used to insert an image on a webpage?

Ans: The `<img>` tag is used with the `src` attribute to add an image.

8. How do you link one page to another in HTML?

Ans: Use the `<a>` tag with the `href` attribute to create hyperlinks.

9. Which tag is used in HTML to create a form?

Ans: The `<form>` tag is used to create a form in HTML.

10. Why is form validation important in JavaScript?

Ans: It helps check if required fields are filled and prevents empty or wrong submissions.

11. What HTML tag is used to create a drop-down list?

Ans: The `<select>` tag.

12. How can you make text bold in an HTML page?

Ans: Use the `<b>` or `<strong>` tag.

13. What attribute is used in the `<input>` tag to make a field required?

Ans: The `required` attribute.

14. How do you insert a line break in HTML?

Ans: Use the `<br>` tag.

15. What tag is used to group related form elements in HTML?

Ans: The `<fieldset>` tag.

16. Where do you write JavaScript code inside an HTML document?

Ans: Inside the `<script>` tag, usually in the `<head>` or before the closing `</body>` tag.

17. What is the purpose of the `type` attribute in an `<input>` tag?

Ans: It defines the type of input, such as text, password, email, etc.

18. How do you add a comment in HTML?

Ans: Use `<!-- comment -->`.

19. Which tag is used to display a list with bullets in HTML?

Ans: The `<ul>` tag.

20. How can you apply CSS styles directly to an HTML tag?

Ans: By using the `style` attribute within the tag.





UNIT 5 System Troubleshooting and Maintenance

In this unit, we will practically learn how to fix, maintain, and set up computer systems through practical activities. First, we will make a bootable Universal Serial Bus (USB) to install an operating system on a computer. Next, we will learn how to add or remove Random Access Memory (RAM) to improve the computer's performance. We will also add or remove a hard disk to increase storage or replace it if needed. After that, we will manually set up a small network by connecting devices such as a computer, printer, scanner, and switch. Finally, we will install and update antivirus software and use it to scan the computer to keep it safe from viruses. These practical tasks will help us understand how to keep a computer system working well and secure.



PRACTICAL 28

Make a bootable USB for the installation of the Operating System.

Steps:

1. Get a USB drive

Use a USB flash drive with at least 8 GB of space (some OSes require 16 GB or more). Backup your data from the USB.

2. Download the ISO file of the operating system

An ISO file is a disk image that contains all the files needed for installation.

Examples:

- Windows ISO: search for "Download Windows ISO from Microsoft"
- Ubuntu: search "Ubuntu official ISO download"

3. Download a bootable USB creation tool

Popular and trusted tools include:

- Rufus (for Windows)
- balenaEtcher (cross-platform)
- UNetbootin (Linux/Windows/macOS)
- Ventoy (allows multiple ISOs on one USB)

4. Insert and select the USB drive

Plug in the USB drive. Open the tool you downloaded. Select your USB from the list of drives (ensure you're selecting the correct one to avoid accidental data loss).

5. Load the ISO file

In the tool interface, locate the button or menu to 'Select' or 'Browse' the ISO file. Choose the ISO file you downloaded in Step 2.

6. Configure boot options (if applicable)

Depending on the tool, you may need to:

- Choose Partition Scheme: MBR (older BIOS) or GPT (newer UEFI)
- Choose File System: typically, FAT32 or NTFS





7. Start the bootable USB creation

Click on 'Start,' 'Flash,' or 'Create' depending on the tool. Confirm any warnings about data being erased. This process may take a few minutes.

8. Test the bootable USB (optional but recommended)

Restart your PC and enter the boot menu (usually by pressing F12, Esc, or Del during startup). Select your USB from the list. Make sure the installer or live environment loads correctly.



PRACTICAL 29

Add and Remove RAM in a Desktop Computer.

Before opening a desktop computer, make sure you and the computer are safe. First, shut down the computer fully using the shutdown button. When it is off, unplug the power cable and remove other cables like the mouse, keyboard, and monitor. This stops electric shock or damage. Press and hold the power button for five seconds to remove leftover electricity.

To add or remove parts like RAM or a hard disk, you need a few tools. Use a normal screwdriver to open the computer and fix parts. It is good to wear an anti-static wristband to stop static that can harm parts. If you don't have one, touch metal on the case to remove static before touching inside parts.

Steps:

1. Follow the following steps to add RAM.
 - Open the computer case by removing the side panel.
 - Find the RAM slots on the motherboard.
 - Push the side clips of an empty RAM slot outward.
 - Hold the RAM by its edges. Do not touch the gold parts.
 - Match the notch on the RAM with the slot and press it in firmly.
 - The side clips will snap into place when the RAM is seated correctly.
 - Check that the RAM is locked in properly.
2. Follow the following steps to remove RAM.
 - Push the clips on both sides of the RAM outward.
 - Lift the RAM out gently by holding it at the edges.
 - Place the RAM safely in a dry place or anti-static bag if available.



PRACTICAL 30

Add and Remove a Hard Disk in a Desktop Computer.

Steps:

1. To add a Hard Disk
 - Find an empty drive bay inside the case.
 - Place the hard disk into the bay and screw it in securely.
 - Attach a Serial Advanced Technology Attachment (SATA) data cable from the hard disk to the motherboard.
 - Connect a power cable from the power supply to the hard disk.
 - Check that both cables are connected properly.
2. To remove a Hard Disk
 - Unplug the SATA and power cables from the hard disk.





- Unscrew the hard disk from the case or remove its clip.
- Take out the hard disk gently and place it safely on a clean surface.



PRACTICAL 31

Manually configure a computer network with different devices such as a computer, a printer, a scanner and a switch.

Steps:

1. Connect all devices to switch

- Take a network cable (LAN cable).
- Connect one end to the computer's LAN port, and the other to the switch.
- Repeat this step for:
 - Printer
 - Scanner (if it's a network scanner)
 - Other computers

2. Assign IP addresses manually

On each computer:

- Go to:
 - Control Panel → Network and Sharing Center
 - Click on Change adapter settings
 - Right-click Ethernet → Properties
 - Select Internet Protocol Version 4 (TCP/IPv4) → Click Properties
- Manually enter:
 - IP Address: Example: 192.168.1.10 (for PC1), 192.168.1.11 (for PC2), etc.
 - Subnet Mask: 255.255.255.0 (Octet number range is 0 - 255)
 - Leave Gateway empty if not using internet.
- Click OK to save.

3. Assign IP address to printer (if required)

- Go to printer settings panel → network settings
- Assign an IP like 192.168.1.100

4. Test the network

- Open command prompt
- Type ping 192.168.1.11 (to check if Pc2 is connected)
- Type ping 192.168.1.100 (to test printer)
- * If you get replies, the network is working.

5. Add printer to computer

- Go to "Control Panel" > Devices and Printers
- Click "Add Printer" → Choose network printer
- Select the printer with IP 192.168.1.100



**PRACTICAL 32**

Install, update an antivirus and scan your computer thoroughly.

Steps:

1. Choose a reliable antivirus software

Some popular options include:

- Cross-platform: Bitdefender, Kaspersky, Avast, Sophos
- macOS-focused: Intego, Avira
- Linux-supported: ClamAV, Sophos for Linux.

2. Download the antivirus software

- Open your internet browser.
- Search for the official website of your chosen antivirus.
- Locate the download section for your operating system (e.g., Windows, macOS, Linux).
- Download the installer file appropriate for your system.

3. Install the antivirus software

- Open the downloaded file (e.g., .exe for Windows, .dmg for macOS, .deb/.rpm for Linux).
- Follow the installation instructions shown on the screen.
- Accept terms and permissions if prompted.
- Complete the installation process.
- Restart your computer if required.

4. Update virus definitions

- After installation, launch the antivirus software. Locate the update or virus definitions section. Click on "Check for updates" to ensure the antivirus has the latest protection against known threats.

5. Perform a full system scan

- Open your antivirus program.
- Find the Scan or Protection tab.
- Choose a Full Scan or Deep Scan (avoid Quick Scan for thorough checking).
- Start the scan.
- Wait for it to finish—this may take time depending on how many files are on your computer.
- If threats are found, follow the program's instructions (e.g., quarantine, delete, or repair the files).





Viva Questions and Answers

1. What is a bootable USB?

Ans: A USB that can install Operating System (i.e Windows) or other systems.

2. Why do we need a bootable USB?

Ans: To install a new operating system.

3. What do we put in a bootable USB?

Ans: We put the system files.

4. Can we use a normal USB for this?

Ans: Yes, but we must make it bootable first.

5. What is Random Access Memory (RAM)?

Ans: RAM is memory that helps the computer work fast.

6. Why do we add RAM?

Ans: To make the computer work faster.

7. Can we remove RAM?

Ans: Yes, we can remove and change RAM.

8. What tool do we need to open the computer?

Ans: A screwdriver.

9. What is a hard disk?

Ans: It stores files and programs.

10. Why do we add a hard disk?

Ans: To get more storage space.

11. Can we remove a hard disk?

Ans: Yes, we can remove it.

12. What do we do before opening the computer?

Ans: Shut down and unplug it.

13. What is a network?

Ans: Many devices connected together make a network.

14. Name two devices in a network.

Ans: Computer and printer.

15. What does a switch do?

Ans: It connects many devices in a network.

16. Why do we connect a scanner?

Ans: To scan papers to the computer.

17. What is antivirus?

Ans: A program that stops viruses.

18. Why do we update antivirus?

Ans: To keep the computer safe.

19. What does scanning do?

Ans: Finds and removes viruses.

20. Should we scan often?

Ans: Yes, to keep it clean.





Practical Based Assessment 04



Instructions for Teachers

The teacher will divide students into groups and assign a specific practical to each group from given ones. Students are required to list the necessary apparatus, describe the procedure and note precautions. They should also record their observations in the Observation Table, if necessary. The teacher will conduct a Viva Voce with each student to evaluate their performance. The teacher will also provide guidance to students on any discrepancies in their work and award marks accordingly.

Roll No. _____

Class/ Section _____

Maximum Marks: 35

Time Allowed: 2 hours

1. Make a bootable USB for the installation of the Operating System on your Computer.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Write down steps to add hard disk in a desktop computer.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

2. Manually configure a computer network with different devices such as a computer, a printer, a scanner and a switch.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Install an anti virus software, update it, and then thoroughly scan your computer.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

Practical Work on Copy (checked by Teacher) (5 Marks)

Viva Questions (6 Marks)

- Why do we add RAM in our system?
- What tool do we need to open the computer?
- What does a switch do?
- Why do we assign an IP address?
- What is the purpose of using an antivirus software?
- Why Ram is called volatile memory?

Sr.No.	Evaluation Criteria/Tasks	Marks Allotted	Marks Obtained	Remarks



**UNIT 6**

Artificial Intelligence (AI) Technologies

In this unit, we will practically learn how to use Artificial Intelligence (AI) tools through practical activities. First, we will create a business idea by choosing a name, designing a logo, and writing a slogan with the help of AI tools. Next, we will provide our personal and academic information to an AI tool to generate a professional Curriculum Vitae (CV). After that, we will choose a topic from our ICT textbook that we find difficult, ask an AI assistant questions, get clear answers, and then write a short summary in our own words. We will also use AI to plan and create an online content piece such as a blog post, YouTube video idea, or digital poster on a topic that interests us. Finally, we will use AI tools to help write and practice a short speech or presentation on something we are passionate about, and then present it to our class, group, or family. These activities will help us understand how AI can support us in learning, creating, and communicating ideas.

**PRACTICAL 33**

Create a Business Idea with Name, Logo, and Slogan using AI Tools . You can use AI tools to create your own small business idea. These tools can help you to generate a name, design a logo, and write a catchy slogan for your business. Follow the following steps to practically perform this task.

Steps:

1. Think About a Business according to your interest.
 - Take a notebook or open a blank document.
 - Ask yourself:
 - What do I enjoy? (e.g., drawing, baking, pets, games, books)
 - Can I make or sell something related to that?
 - Write down 1–2 fun business ideas. Example: “Pet-themed bookmarks” or “Healthy snacks for kids.”
2. Ask AI to Help You Name Your Business
 - Open ChatGPT (or any other AI chatbot your school allows).
 - Type a prompt like:
“Suggest 5 fun and creative names for a business that sells pet-themed bookmarks.”
 - Pick the name you like best. You can also ask AI to explain the meaning of each name.
3. Create a Logo Using AI
 - Go to a logo generator tool (like Looka, Canva AI, or LogoMakr).
 - Type your business name and choose a symbol (like a cat, book, or plant).
 - Try different designs until it looks fun and professional.
 - Download or save your logo.
4. Write a Catchy Slogan
 - Go back to ChatGPT on your notebook.





- Ask: “Can you help me write a short and catchy slogan for a pet bookmark business called ‘PawPrint Pages’?”
- Choose your favorite or mix and match the words to make it your own.

5. Present Your Idea

- On paper or in a slide, put together:
 - Your business name
 - The logo you made
 - The slogan
 - 1 sentence explaining what your business does



PRACTICAL 34

Prepare your Curriculum Vitae (CV) by providing your personal and academic information to an AI tool.

Steps:

1. Open an AI Tool
 - Go to one of the following websites:
 - <https://chat.openai.com> (ChatGPT)
 - <https://gemini.google.com> (Google Gemini)
 - Log in if needed.
2. Give a Prompt to the AI
 - In the chat box, type:
"Create a CV using the following details:"
 - Then paste or write all your personal and academic information.

- Name: Ali Raza
- Father's Name: Raza Hussain
- Date of Birth: 10 March 2009
- Class: 9th
- School: Govt. High School Lahore
- Skills: MS Word, Typing, Internet Browsing
- Hobbies: Reading, Cricket
- Career Objective: I want to become a software engineer.

3. AI Will Generate Your CV

- The AI will create a neat and clean CV format.
- Read it and check if all information is correct.
- Copy the text and paste it into MS Word or Google Docs.

4. Save or print the CV

- Save the file as “My CV.docx”
- Print the CV if required for a school assignment or personal use.



**PRACTICAL 35**

Choose a topic from your ICT textbook that you find confusing. Use an AI assistant to ask questions, get clear explanations and write a short summary in your own words.

Steps:**1. Choose an ICT Topic You Find Difficult**

- Open your ICT book or revision notes.
- Look for a topic that is confusing or that you didn't understand in class.
- Some examples:
 - *Types of Computer Memory*
 - *The Difference Between Hardware and Software*
 - *Role of the CPU*
 - *Internet and Networking Basics*
- Write the name of the topic in your notebook or worksheet.

2. Ask an AI Assistant for a Simple Explanation

- Open a trusted AI tool like ChatGPT, Khanmigo, or Socratic by Google.
- Type a prompt like:

"Explain the difference between RAM and ROM in simple words for a 7th-grade student."

"Can you explain how a router works in a home network?"

- Read the AI's answer and highlight or note the parts that helped you understand.

3. Ask Follow-Up ICT Questions to Learn More

- If you're still confused or curious, ask the AI follow-up questions like:

"What are the advantages of using a router at home?"

"How is primary memory different from secondary memory?"

"Give 5 examples of output devices and how they work."

- Ask more questions until you feel confident about the topic.

4. Summarize What You Learned

- Use your own words to write 3–5 bullet points about what you've learned.
- This helps you remember better and shows that you really understand it.
- Example:
 - RAM is temporary memory that stores running programs.
 - ROM is permanent memory that stores startup instructions.
 - Both are types of internal memory in a computer.

5. Make a Simple Visual or Teach a Friend

- Turn your notes into a small visual poster, chart, or mind map to display in class or in your ICT folder.
- OR explain the topic to a classmate, teacher, or family member. Teaching someone else helps you remember even more!



**PRACTICAL 36**

Use AI tools to help you plan and create an online content piece. For example, a blog post, YouTube video idea or digital poster on a topic you are interested in.

Steps:**1. Choose a Topic**

- Think about something you love or know a lot about. Some ideas:
 - A hobby (e.g., baking, drawing, coding, football)
 - A helpful tip (e.g., how to stay safe online)
 - A review (e.g., of your favorite app, movie, or book)
- Write your topic idea in a notebook or on your device.

2. Ask AI to Help Plan Your Content

- Open an AI writing tool like ChatGPT or Notion AI.
- Use a prompt like:
 - “Give me an outline for a blog post about how to stay safe on the internet for kids.”
 - “Suggest a YouTube video script for a beginner baking tutorial.”
- Review the outline and edit it if needed. Add your personal ideas too.

3. Create Your Content

- Choose your format:
 - For a blog post or story: use Google Docs, Word, or Notion.
 - For a poster or infographic: use Canva, Adobe Express, or Piktochart.
 - For a video idea: write a script and create a storyboard using drawings or slides.
- Ask AI for help with writing, titles, or slogans if you get stuck.
 - “Give me a catchy title for my blog about pet care for kids.”

4. Check and Polish Your Work

- Use spelling and grammar tools (like Grammarly or built-in checkers) to improve your writing.
- Ask AI to review your content:
 - “Can you check this paragraph for mistakes and make it sound better?”
- Add images, icons, or colors to make your poster or slides attractive.

5. Share or Present Your Work

- You can:
 - Present it in class
 - Print and display it on a school board
 - Post on a class blog or school website (with teacher’s permission)
 - Record yourself reading it and share with friends or family
- Reflect: What did you learn? What would you improve next time?



**PRACTICAL 37**

Use AI tools to help you write and practice a short 1-2 minutes speech or presentation on something you're passionate about and present it to your class fellows, group or family.

Steps:

1. Pick a Topic That You Enjoy Talking About
 - Choose something you know or care about:
 - A favorite game, sport, or activity
 - A person you admire
 - An idea for a business or invention
 - A topic from ICT or science that excites you
 - Write the topic in your notebook.
2. Ask AI to Help You Write a Short Speech
 - Open a writing tool like ChatGPT, QuillBot, or Notion AI
 - Type a prompt like:
 - "Help me write a short speech for school about why I love robotics."*
 - "Write a 2-minute talk for students about how to start a YouTube channel."*
 - Read the response and make changes to reflect your voice. Add your own stories or opinions.
3. Improve the Language and Flow
 - Use AI to help polish the text:
 - "Can you check this speech and make it sound more exciting but still easy to understand?"*
 - Use tools like Grammarly or Hemingway Editor to fix grammar and make it smoother.
4. Create a Simple Visual (Optional)
 - Use Google Slides, PowerPoint, or Canva to make 1–2 slides for your topic.
 - Add your speech title, a picture, and a few key points (no full sentences).
 - Keep it neat and visual.
5. Practice and Present
 - Read your speech a loud several times. Practice in front of a mirror or a friend.
 - Use voice recording tools (on your phone or computer) to listen to how you sound.
 - Make eye contact, speak clearly, and smile when presenting.
 - Present in front of your class, group, or family.

**Viva Questions and Answers****1. What is AI used for in creating a business idea?**

Ans: AI gives ideas for names, logos, and slogans.

2. How can AI help you design a logo?

Ans: AI can create pictures for your business.





3. How does AI help write a slogan?

Ans: AI suggests short lines to explain your business.

4. Which AI tool can help make a business plan?

Ans: Tools like ChatGPT or logo makers can help.

5. How does AI use your information for a CV?

Ans: AI arranges your data into a good CV format.

6. Why is AI better than doing a CV by hand?

Ans: AI saves time and makes it neat.

7. How does AI make a CV look nice?

Ans: It chooses good words and layout.

8. What can AI fix in your CV?

Ans: Spelling, grammar, and design.

9. How does AI help when you don't understand something?

Ans: AI answers questions and explains clearly.

10. How do you use AI to ask for help with a topic?

Ans: You type your question and AI replies.

11. What does AI do with your questions?

Ans: It gives quick, simple answers.

12. How can AI help you write a summary?

Ans: AI explains hard ideas so you can write simply.

13. How can AI help plan online content?

Ans: AI gives ideas for blogs, videos, or posters.

14. Why use AI for online content?

Ans: It makes planning and writing faster.

15. How does AI help design a digital poster?

Ans: AI suggests pictures, words, and layout.

16. How can AI help you write a speech?

Ans: AI helps write clear points for talking.

17. How does AI help you practice a speech?

Ans: It gives tips and checks your words.

18. Why is AI good for speech writing?

Ans: It makes ideas clear and easy to say.

19. What is one benefit of using AI for all these tasks?

Ans: AI saves time and helps you do better work.

20. How does AI help students learn?

Ans: AI explains things, fixes writing, and gives ideas





Practical Based Assessment 05



Instructions for Teachers

The teacher will divide students into groups and assign a specific practical to each group from given ones. Students are required to list the necessary apparatus, describe the procedure and note precautions. They should also record their observations in the Observation Table, if necessary. The teacher will conduct a Viva Voce with each student to evaluate their performance. The teacher will also provide guidance to students on any discrepancies in their work and award marks accordingly.

Roll No. _____

Class/ Section _____

Maximum Marks: 35

Time Allowed: 2 hours

1. Use an AI tool to generate your curriculum vitae (CV).

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Create a business idea with name, logo, and slogan using AI tools.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

2. Write and practice and short 1-2 minute speech using AI tool.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

OR

Use AI tools to help you plan and create an online content piece. For example, a blog post, YouTube video idea, or digital poster on a topic you are interested in.

- Perform the task on the computer. (5)
- Write step by step procedure on answer sheet. (7)

Practical Work on Copy (checked by Teacher) (5 Marks)

Viva Questions (6 Marks)

- How does AI help when you don't understand something?
- Which AI tool can help make a business plan?
- How does AI help students learn?
- What can AI fix in your CV?
- How does AI help design a digital poster?
- How does AI help you practice a speech?

Sr.No.	Evaluation Criteria/Tasks	Marks Allotted	Marks Obtained	Remarks





Instructions for Preparation of Practical of Information & Communication Technologies for Class 9

ESSENTIAL INSTRUCTIONS FOR PRACTICAL EXAM SETTERS

Total Marks: 35

Time Allowed: 2 hours

Part 1:	The section will contain two Practical based Questions. The detail is as follows:	
	Q-1: 1 practical have to be performed out of 2. The detail is as follows: • 1 practical will be taken form Practical No. 1 to Practical No. 9 • 1 practical will be taken form Practical No. 10 to Practical No. 21	$1 \times 12 = 12$
	Q-2: 1 practical have to be performed out of 2. The detail is as follows: • 1 practical will be taken form Practical No. 22 to Practical No.27 • 1 practical will be taken form Practical No. 28 to Practical No.37	$1 \times 12 = 12$
Part 2:	This section will consist of checking Practical Notebooks and conducting Viva Voce . The details are given below:	
	Practical Notebook	6
	Viva Voce	5





Model Practical

Information and Communication Technologies (ICT)

Total Marks: 35**Class: 9****Time Allowed: 2 hours**

1: Design at least three slides in presentation software using relevant theme and insert table and chart. Save the presentation against your roll number.

- a) Perform the task on computer. (5)
- b) Write step by step procedure on answer sheet. (7)

OR

Construct a simple LED circuit using battery switch and resistor

- a) Perform the task and execute it. (5)
- b) Write step by step procedure on answer sheet. (7)

2: Perform steps to set up an account on an e-Commerce platform

- a) Perform the task on computer. (5)
- b) Write step by step procedure on answer sheet. (7)

OR

Create a Business Idea with Name, Logo, and Slogan using AI Tools .

- a) Perform the task on computer. (5)
- b) Write step by step procedure on answer sheet. (7)

3: Practical Notebook (5)

4: Viva voce (6)

