



KIDS & TEENS FREELANCING TRAINING INSTITUTE

# Raspberry Pi Course Outline

## Module 1: What is Raspberry Pi?

- Introduction to Raspberry Pi as a small, affordable computer
  - Real-life example: Building a weather station or home automation system
  - Overview of different Raspberry Pi models and accessories
  - Setting up Raspberry Pi with Raspberry Pi OS (formerly Raspbian)
  - Activity: Set up your Raspberry Pi and explore the desktop interface
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## Module 2: Connecting Raspberry Pi to Peripherals

- Connecting your Raspberry Pi to a monitor, keyboard, and mouse
  - Real-life example: Setting up a Raspberry Pi to control lights or sensors
  - Using GPIO (General Purpose Input/Output) pins for physical computing
  - Activity: Connect an LED to your Raspberry Pi and control it
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## Module 3: Using Raspberry Pi with Python

- Introduction to programming with Python on Raspberry Pi
  - Writing Python scripts to interact with hardware
  - Real-life example: Blinking an LED, controlling motors, or reading sensors
  - Activity: Write a Python script to make an LED blink
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## Module 4: Networking & Remote Access

- Connecting your Raspberry Pi to the internet (Wi-Fi/Ethernet)
- Accessing your Raspberry Pi remotely using SSH
- Real-life example: Remotely controlling your Pi or managing projects
- Activity: Set up SSH and control your Raspberry Pi from another device

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## **Module 5: Raspberry Pi as a Media Center**

- Installing Kodi or Plex for media streaming
  - Turning your Raspberry Pi into a media server or player
  - Real-life example: Streaming movies, music, or TV shows on your TV
  - Activity: Set up a media center and stream content to your devices
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## **Module 6: Raspberry Pi and Internet of Things (IoT)**

- Understanding IoT and how Raspberry Pi is used in IoT projects
  - Connecting sensors, cameras, and devices to Raspberry Pi for IoT
  - Real-life example: Building a home automation system with Raspberry Pi
  - Activity: Create an IoT project that controls home devices from the internet
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## **Module 7: Setting Up Web Servers and Projects**

- Installing a web server (Apache, Nginx) on Raspberry Pi
  - Creating a local website or web app hosted on the Pi
  - Real-life example: Running a personal website or blog with Raspberry Pi
  - Activity: Host a basic website on your Raspberry Pi and access it remotely
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## **Module 8: Raspberry Pi Projects for Fun and Learning**

- Fun project ideas: Build a robot, create a smart mirror, or make a game console
  - Real-life example: Turning Raspberry Pi into a retro gaming console (RetroPie)
  - Integrating different components like sensors, motors, and displays
  - Activity: Choose a fun Raspberry Pi project to complete (e.g., a mini arcade or weather station)
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## **Bonus Materials**

- Raspberry Pi GPIO pinout guide and troubleshooting tips
- Mini projects: Home automation, smart mirror, temperature sensor
- Access to free Raspberry Pi resources and communities
- Certificate of Completion for Raspberry Pi Projects

