

| Session | Topic Name | Outcome |
|---------|-----------------------------|--|
| 1 | Arduino IDE + First LED | Write & upload first working Arduino program |
| 2 | Digital Output Control | Control hardware using digitalWrite |
| 3 | Timing with delay() | Create time-based LED blinking |
| 4 | Variables & Pin Mapping | Write clean, reusable code |
| 5 | Multiple Outputs | Control LED and buzzer together |
| 6 | Output Logic Practice | Generate LED & buzzer patterns |
| 7 | Digital Input – Switch | Read user input from switch |
| 8 | Conditional Statements | Control output using conditions |
| 9 | Logical Operators | Apply AND/OR logic to hardware |
| 10 | IR Sensor Basics | Detect object using IR sensor |
| 11 | IR-Based Alert | Trigger buzzer using IR sensor |
| 12 | Input–Output System | Handle multiple inputs logically |
| 13 | for Loop | Generate repeated LED patterns |
| 14 | while Loop | Create continuous looping actions |
| 15 | Loop Comparison | Understand for vs while usage |
| 16 | Loop-Based Automation | Automate LED & buzzer actions |
| 17 | Serial Monitor Basics | Monitor system status via Serial |
| 18 | Serial Data Printing | View sensor values on Serial |
| 19 | Debugging with Serial | Debug logic using Serial Monitor |
| 20 | LDR Sensor Basics | Read light intensity values |
| 21 | Threshold Logic | Build automatic night lamp |
| 22 | PWM Output | Control LED brightness |
| 23 | Analog Debugging | Analyze analog values using Serial |
| 24 | Ultrasonic Sensor Basics | Measure distance accurately |
| 25 | Distance-Based Alert | Trigger buzzer using distance |
| 26 | LCD Display Basics | Display text on LCD |
| 27 | LCD Sensor Display | Show sensor data on LCD |
| 28 | Servo Motor Basics | Control servo angle |
| 29 | Sensor-Controlled Servo | Move servo using sensor input |
| 30 | System Integration Practice | Integrate sensors, LCD & servo |