**BASIC ELECTRONICS**

Introduction to 20 Electronics Component

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| **LED** | **Diode** | **Transistor** | **DC Motor** |
| **Resistor** | **Capacitor** | **Transformer** | **Switch** |
| **Connectors** | **PCB** | **IC’s/ IC Base** | **Variable Resistor** |
| **LDR** | **Condenser Mic** | **Speaker/Buzzer** | **7 Segment Display** |
| **Relay** |  |  |  |

<Add 3 more components to complete 20 in all>

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| **USING BREAD BOARD** |

<List of items used for using bread board>

<Bread board internal connection diagram>

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| **ANY TWO MINI PROJECTS ON BREAD BOARD** | |
| NAME OF MINI PROJECT | PATH |
| **AUTOMATIC STREET LIGHT** | **embedded-projects\pcb\_designs\mini\_projects** |
| **CLAP SWITCH** | **embedded-projects\pcb\_designs\mini\_projects** |
| **OBJECT COUNTER** | **embedded-projects\pcb\_designs\mini\_projects** |
| **MELODY GENERATOR USING LM 66** | **embedded-projects\pcb\_designs\mini\_projects** |

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| **INTRODUCTION TO SOLDERING** |

<List of items used while doing soldering>

<do’s and dont’s while doing soldering>

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| **MAKE ANY TWO MINI PROJECTS WITH SOLDERING** | |
| NAME OF MINI PROJECT | PATH |
| **AUTOMATIC STREET LIGHT** | **embedded-projects\pcb\_designs\mini\_projects** |
| **CLAP SWITCH** | **embedded-projects\pcb\_designs\mini\_projects** |
| **OBJECT COUNTER** | **embedded-projects\pcb\_designs\mini\_projects** |
| **MELODY GENERATOR USING LM 66** | **embedded-projects\pcb\_designs\mini\_projects** |

**PCB DESIGNING**

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| **WORKING ON EAGLE WIN** |
| **CREATING PCB LAYOUT** |

<Provide circuit diagrams>

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| **MAKE MINI PROJECTS ON EAGLE WIN(ANY TWO)** | |
| **NAME OF THE PROJECTS** | **PATH** |
| **CLAP SWITCH** | **embedded-projects\pcb\_designs\mini\_projects** |
| **OBJECT COUNTER** | **embedded-projects\pcb\_designs\mini\_projects** |
| **AUTOMATIC STREET LIGHT** | **embedded-projects\pcb\_designs\mini\_projects** |
| **MELODY GENERATOR USING UM66** | **embedded-projects\pcb\_designs\mini\_projects** |
| **5 ITEMS USED IN PCB ETCHING PROCESS** | |

**<List the items and their purpose>**

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| **MAKE MINI PROJECTS OR MODULES WITH PCB ETCHING(ANY TWO)** | |
| **NAME OF THE PROJECTS/MODULES** | **PATH** |
| **CLAP SWITCH** | **embedded-projects\pcb\_designs\mini\_projects** |
| **OBJECT COUNTER** | **embedded-projects\pcb\_designs\mini\_projects** |
| **AUTOMATIC STREET LIGHT** | **embedded-projects\pcb\_designs\mini\_projects** |
| **MELODY GENERATOR USING UM66** | **embedded-projects\pcb\_designs\mini\_projects** |
| **RELAY DRIVER** | **embedded-projects\pcb\_designs\modules** |

**8051 PROGRAMMING**

|  |  |  |  |
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| **PIN DIAGRAM AND PORTS OF 8051** | | | |
| **INTRODUCTION TO 8051** | **NO OF PORS IN 8051** | **PIN DESCRIPTION OF** | **GENERAL BASIC CIRCUIT** |

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| **AVR PROGRAMMER FOR 8051 PROGRAM UPLOADING** |
| **INTRODUCTION TO KEIL SOFTWARE** |

**<Provide AVR Programmer connection diagram with 8051>**

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| **INTERFACING MODULES WITH 8051(ANY 5)** | |
| **NAME OF THE MODULES** | **PATH** |
| **MOTOR DRIVER** | **embedded-projects\pcb\_designs\modules** |
| **DTMF** | **embedded-projects\pcb\_designs\modules** |
| **LCD MODULE** | **Use original** |
| **RELAY DRIVER** | **embedded-projects\pcb\_designs\modules** |
| **IR MODULE** | **embedded-projects\pcb\_designs\modules** |
| **KEYPAD** | **embedded-projects\pcb\_designs\modules** |
| **7 SEGMENT DISPLAY** | **embedded-projects\pcb\_designs\modules** |
| **PIR MOTION SENSOR** | **Use original(connect Vcc, Gnd, Out pin to 8051)** |

<Provide connection diagrams>

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| **2 projects based on 8051.** |

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| **NAME OF THE PROJECT** | **PATH** |
| **BIDIRECTIONAL VISITOR COUNTER** | **embedded-projects\project\_codes\8051\Projects** |
| **PWM MOTOR SPEED CONTROL** | **embedded-projects\pcb\_designs\major\_projects** |
| **ELECTRONIC LOCK** | **embedded-projects\pcb\_designs\major\_projects** |
| **RS 232 BASED DATA TRANSFER** | **embedded-projects\pcb\_designs\major\_projects** |

**ARDUINO PROGRAMMING**

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| **PIN DIAGRAM AND PORTS OF ATMEGA328/ARDUINO** |
| **USING ARDUINO IDE FOR UPLOADING PROGRAMS TO ARDUINO** |

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| **INTERFACING MODULES WITH ARDUINO (ANY 8)** | | | |
| **MOTOR DRIVER** | **LCD MODULES** | **IR MODULES** | **7 SEGMENT DISPLAY** |
| **DTMF MODULES** | **RELAY DRIVER** | **KEYPAD** | **PIR MOTION SENSOR** |

<Provide connection diagrams>

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| **2 projects based on Arduino.** |

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| **NAME OF THE PROJECT** | **PATH** |
| **DTMF ROBOT** | **embedded-projects\project\_codes\arduino\Projects** |
| **TEMPERATURE SENSOR USING LM 35** | **embedded-projects\project\_codes\arduino\Projects** |

**ROBOTICS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **INTRODUCTION TO 10 COMPONENT USED TO MAKE A SIMPLE ROBOT** | | | | |
| **L293D IC** | **FRONT WHEEL** | **WHEELS** | **CHACHIS** | **BATTERY** |
| **CONNECTORS** | **GEAR MOTOR** |  |  |  |

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| **MAKING DIFFERENT CHACHIS BASIS** |
| **USING 3 BASIS MODULES REQUIRE FOR ROBOTICS** |

**<list the modules>**

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| **MAKE 3 ROBOT USING ARDUINO UNO BOARD** | |
| **NAME OF THE PROJECTS** | **PATH** |
| **DTMF ROBOT** | **embedded-projects\project\_codes\arduino\Projects** |
| **TEMPERATURE SENSOR USING LM 35** | **embedded-projects\project\_codes\arduino\Projects** |
| **INFRARED REMOTE SWITCH** | **embedded-projects\project\_codes\arduino\Projects** |

<last 2 are not robots>

**DEMO PROJECTS TO DISPLAY**

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| **2 Demo Project to Display** |

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| **REMOTE CONTROLE MOTOR ON OFF** |
| **WIRELESS POWER TRANSMISSION** |