Raspberry Pi

Its a pocket sized computer which also have GPIO pins for connecting it to other sensors & peripherals which makes it a good platform for embedded engineers. It has an ARM architecture ~~professor~~ processor based board designed for electronic engineers & hobbyists. The Pi is one of the most trusted project development platforms out there now. With higher processor speed and high RAM. the Raspberry Pi can be used for many high profile projects like Image processing and Internet of Things. Raspberry Pi 4 with 8GB RAM is the high end version available for sale now. It also has other lower version with 4GB and 2GB RAM.

Components Required

Connection pins

220 Ω or

1k Ω resistor

LED

Bread Board

Circuit

Connect an LED between PIN40 (GPIO21) and PIN39 (GROUND).

Aim Write a program to light an LED through Python program on Raspberry Pi

One of the biggest selling points of the Raspberry Pi is its GPIO or General Purpose Input Output ports. They are the little pins sticking out of the circuit board and allow you to plug various devices into your Raspberry Pi. With a little programming, you can then control or detect what they are doing.

Components :

a breadboard, an LED and a 330 ohm resistor

Raspberry Pi GPIO pins:

GPIO is a way the Raspberry Pi can control & monitor the outside world by being connected to electronic circuits. The Raspberry Pi can control LED's turning them on or off. , or motors or many other things. Its also able to detect whether a switch has been pressed or temperature or light. The new 40 pin Raspberry Pi's shares exactly the same layout of pins for the top 13 rows of GPIO pins. In the Can Jam Edukit you'll learn to control LED's & a buzzer and detect when a button has been pressed.

Building the Circuit :-

The circuit consists of a power supply, an LED that lights when the power is applied and a resistor to limit the current that can flow through the circuit. You'll be using one of the GND to act like -ve or 0 volt ends of battery. The +ve end of the battery will be provided by a GPIO pin. Here we'll use pin 18. When they're taken high which means its output is 3.3V, the LED will light.

Code :-

Create new text file "LED.py" by typing the following:-

nano. LED.py.

Type in the following code:

```
import RPi.GPIO as GPIO
import time
GPIO.setmode (GPIO.BCM)
GPIO.setwarnings (False)
 GPIO setup (18. GPIO.OUT)
 print ("LED on"
GPIO. output (18, GPIO. HIGH)
 time -sleep 1)
print "LED off"
 GPIO output (18, GPIO, LOW)
```

Once you've typed all the code & checked it, save & exit the text editor with "Ctrl x", "y", "enter"