# Pulse Wave Modulation

H B CHETAN

EE19MTECH11027
M.Tech (RA)
IIT Hyderabad

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

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## Components

- Icoboard
- LED
- Bread board
- Jumper wires

# Pulse Wave Modulation

## Method

- PWM was implemented using LED. - Four bit inputs were taken. We can display 16 levels of intensity.

- These were passed on to icoboard using GPIO pins of the pi.

- Output was checked using the change in the brightness of LED.

Github link: code

# Pulse Wave Modulation

## Verilog code

```
module LEDPWM(input wire clk,
input wire[3:0] PWMinput,output reg LED);
reg [4:0] PWM;
always @(posedge clk) PWM <= PWM[3:0]+PWMinput;
assign LED = PWM[4];
endmodule
```

# Pulse Wave Modulation

## Python code

```
import RPi.GPIO as GPIO

GPIO.setmode(GPIO.BOARD)
GPIO.setup(12, GPIO.OUT)
GPIO.setup(16, GPIO.OUT)
GPIO.setup(26, GPIO.OUT)
GPIO.setup(36, GPIO.OUT)
GPIO.output(12, 1)
GPIO.output(16, 1)
GPIO.output(26, 1)
GPIO.output(36, 0)
```

# THANK YOU