LESSON 10: Digital to Analogue Conversion

# The mcp4725 Digital to Analogue Converter > Documentation

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link: https://dcsit.twiki.ucc.edu.gh/do/view/UCC\_Course/DigitalToAnalogueConversion

**Goal:**

The exercise session was aimed at introducing the Digital to Analogue Converter &how programming it and how to use it to generate arbitrary wave forms.

**Exercise 1:**

* The pigpio documentation for the device was initially checked in order to understand some of the functions available for the device in the pigpio library. Then the I2 C address of the DAC given for the exercise was checked by using the “i2cdetect -1” command in the terminal. It was obtained to be 0x48.We started the “pigpio daemon” using “sudo pigpiod” command in the terminal.
* The “pigpio” library was initialized in the “C” program created using the “pigpio\_start()” function in the “pigpio” library provided. The I2C bus was also opened using the “i2c\_open()” function also provided in the “pigpio” library provided.
* A random 12bit value was first sent to the DAC through the program and later through command line arguments.
* It was observed that the analogue value on the DAC output recorded on the multi-meter changed in correspondence to the DAC value passed as parameters in the program. A relationship was drawn out of this.

***Exercise 2:***

## A pulse generator was capable of producing a sine function was created in this section.

## The values of the pulse generator were sent to the DAC as parameter values. It was observed that the time between the passing of each parameter value was the same.

**Remarks**

In this exercise session I had to recall and apply the sine wave created in the previous exercises and implement a similar one in this exercise and I also learnt mechanism behind the DAC devices that are important in MP3player amongst others.