

PRACTICAL 9

Write a program for A/D Conversion

Code -

```
import math

flag_levels = True
while(flag_levels):
    try:
        number_of_levels = int(input("Please Enter Number of Levels : "))
        flag_levels = False
    except:
        print("----- Please Enter Valid Input-----")

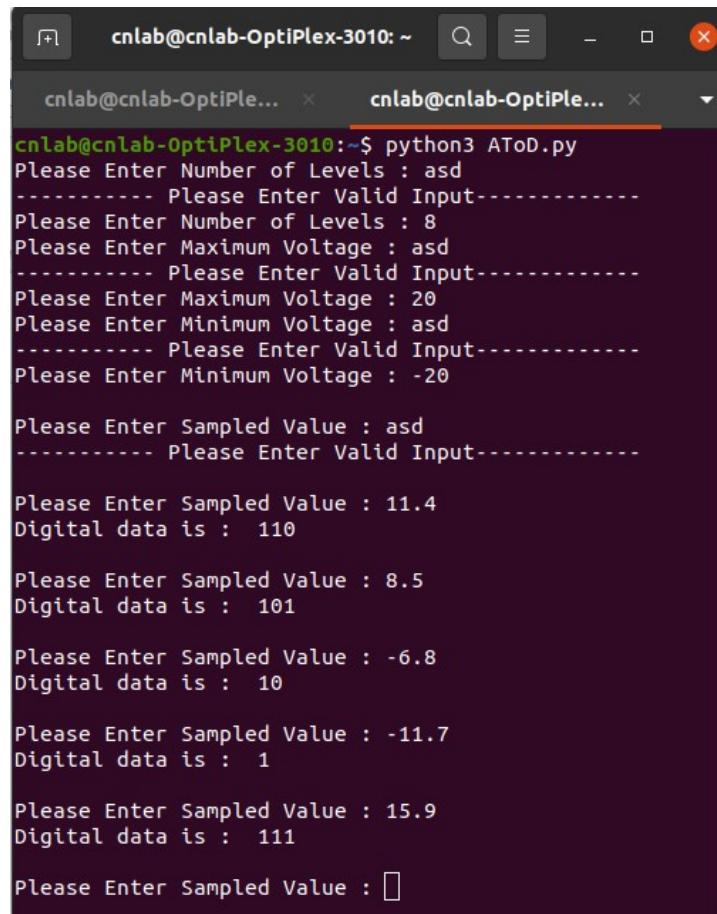
flag_max_volt = True
while(flag_max_volt):
    try:
        maximum_voltage = int(input("Please Enter Maximum Voltage : "))
        flag_max_volt = False
    except:
        print("----- Please Enter Valid Input-----")

flag_min_volt = True
while(flag_min_volt):
    try:
        min_voltage = int(input("Please Enter Minimum Voltage : "))
        flag_min_volt = False
    except:
        print("----- Please Enter Valid Input-----")

while(True):
    flag_sampled_value = True
    while(flag_sampled_value):
        try:
            print("")
            sampled_value = float(input("Please Enter Sampled Value : 
"))
            flag_sampled_value = False
        except:
            print("----- Please Enter Valid Input-----")

    d = (maximum_voltage - min_voltage)/number_of_levels
    normalised_value = sampled_value/d
    quantised_value = math.floor(normalised_value) + 0.5
    quantised_code = quantised_value + ((number_of_levels/2)-0.5)
    print("Digital data is : " , format(int(quantised_code),"b") )
```

Screenshot of Output -



```
cnlab@cnlab-OptiPlex-3010: ~  
cnlab@cnlab-OptiPlex-3010:~$ python3 AToD.py  
Please Enter Number of Levels : asd  
----- Please Enter Valid Input-----  
Please Enter Number of Levels : 8  
Please Enter Maximum Voltage : asd  
----- Please Enter Valid Input-----  
Please Enter Maximum Voltage : 20  
Please Enter Minimum Voltage : asd  
----- Please Enter Valid Input-----  
Please Enter Minimum Voltage : -20  
  
Please Enter Sampled Value : asd  
----- Please Enter Valid Input-----  
  
Please Enter Sampled Value : 11.4  
Digital data is : 110  
  
Please Enter Sampled Value : 8.5  
Digital data is : 101  
  
Please Enter Sampled Value : -6.8  
Digital data is : 10  
  
Please Enter Sampled Value : -11.7  
Digital data is : 1  
  
Please Enter Sampled Value : 15.9  
Digital data is : 111  
  
Please Enter Sampled Value : 
```