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Vellore Institute of Technology
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Fall Semester 2021-2022

Scripting Languages for VLSI Design Automation

LAB Task – 05

Python – Netlist Analysis

1. Write a Python script which reads the given netlist and identifies the different cell instantiations and the number of occurrences of each cell. Identify the total number of different cells used in the netlist. Also, identify and display the cell name that is instantiated for the maximum number of times and the cell that is instantiated for minimum number of time in the given netlist. You may also save in a separate file using the script.

   Note: As you are familiar with Perl/TCL first you can perform the task using Perl/TCL whichever is convenient, identify the logic to implement the task and then implement in Python. Sample output displaying the different cells and their corresponding count is shown below. Apart from this you need to display the cell that is instantiated for maximum and minimum number of times in the terminal window.

```
Total number of Standard cells found are 41
The list of Standard cells are
ad01d0:- 60
an02d0:- 2
xr02d1:- 31
or02d0:- 2
xn02d1:- 6
ah01d0:- 20
inv0d0:- 47
aor21d1:- 14
an12d1:- 2
nr02d0:- 66
aoi222d1:- 25
nr03d0:- 41
aoim22d1:- 11
mx02d0:- 233
inv0d1:- 117
nd04d0:- 25
nd02d1:- 19
an02d1:- 38
```