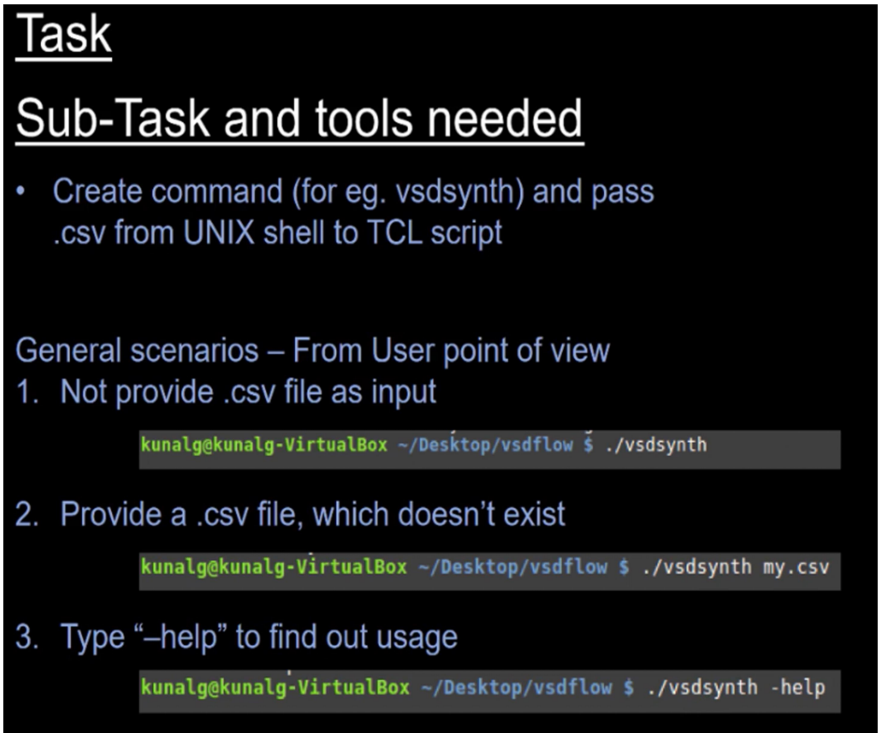
VSD TCL WORKSHOP

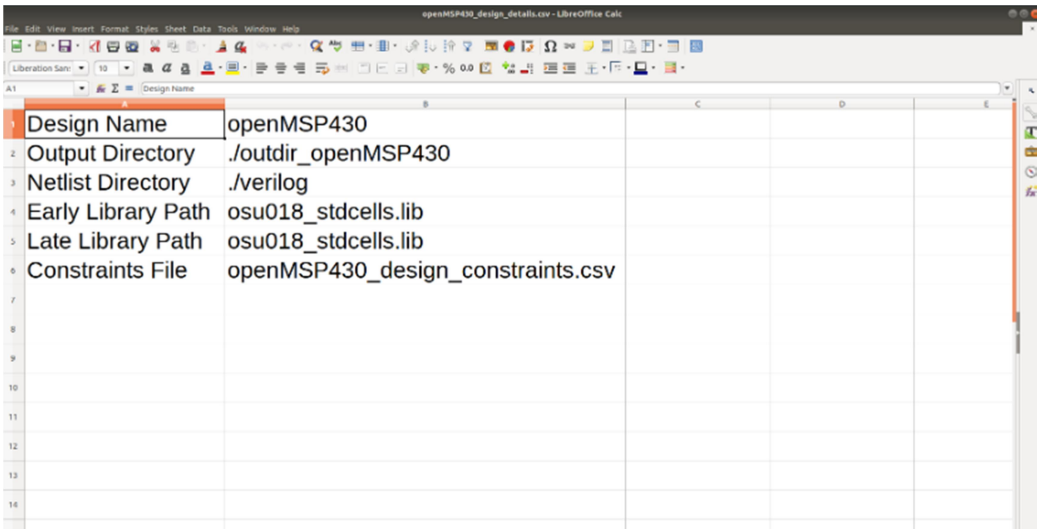
DAY 1

Day 1's task is to create a command (in my case, synui) and pass a .csv file from the UNIX shell to the TCL script, taking into consideration mainly the general scenarios from the user's point of view.

Task:



Inputs File:



Implementation:

1. Creating the ./synui command by writing a bash script to cover the general scenarios of input file present or not.

Script:

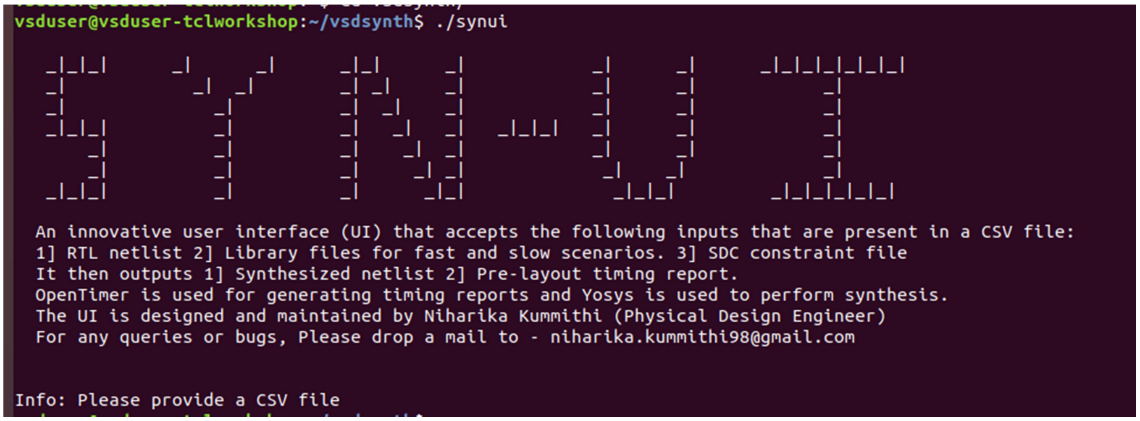
```
#!/bin/bash
echo
echo "   _|_|_|      _|      _|      _|_|      _|            _|      _|      _|_|_|_|_|_|_|_|   "
echo "   _|            _|  _|        _| _|    _|            _|      _|            _|         "
echo "   _|              _|          _|  _|   _|            _|      _|            _|         "
echo "   _|_|_|          _|          _|   _|  _|   _|_|_|   _|      _|            _|         "
echo "         _|        _|          _|    _|  _|           _|      _|            _|         "
echo "         _|        _|          _|      _| _|           _|    _|             _|         "
echo "   _|_|_|          _|          _|       _|_|            _|_|_|         _|_|_|_|_|_|    "
echo
echo "  An innovative user interface (UI) that accepts the following inputs that are present in a CSV file:"
echo "  1] RTL netlist 2] Library files for fast and slow scenarios. 3] SDC constraint file"
echo "  It then outputs 1] Synthesized netlist 2] Pre-layout timing report."
echo "  OpenTimer is used for generating timing reports and Yosys is used to perform synthesis."
echo "  The UI is designed and maintained by Niharika Kummithi (Physical Design Engineer)"
echo "  For any queries or bugs, Please drop a mail to - niharika.kummithi98@gmail.com"
echo
echo
#Code to handle the scenario where user does not give any file, does not give .csv file, gives more than one file as argument

if [ $# -eq 0 ]
then
        echo "Info: Please provide a CSV file"
        exit 1
elif [ $# -gt 1 ]
then
        echo "Info: Please provide only 1 CSV file"
        exit 1
else
        if [[ $1 != *.csv  &&  $1 != "-help" ]]
        then
                echo "Info: Please provide a .csv format file"
                exit 1
        fi
fi
# Code to check if the .csv file is present in directory or not, and also to display information for -help argument.
if [ ! -f $1 ] || [ $1 == "-help" ]
then
```

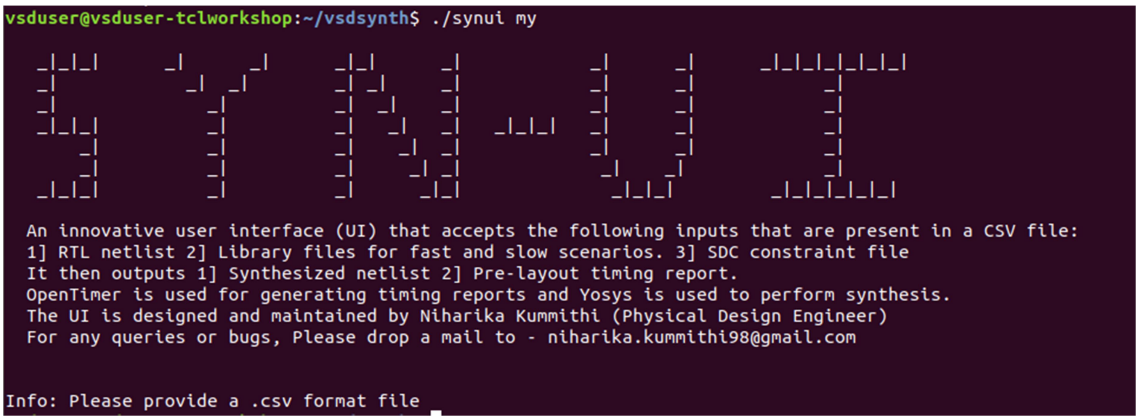
```
# Code to check if the .csv file is present in directory or not, and also to display information for -help argument.
if [ ! -f $1 ] || [ $1 == "-help" ]
then
        if [ $1 != "-help" ]
        then
                echo "Error: The file $1 is not found in current directory."
                exit 1
        else
                echo "USAGE: ./synui <csv_file>"
                echo
                echo " where <csv file> consists of 2 columns, below keyword being in 1st column and is Case Sensitive. Please reques
t Niharika for sample csv file."
                echo
                echo " <Design Name> is the name of top level module."
                echo
                echo " <Output Directory> is the name of output directory where you want to dump synthesis script, synthesized netlis
t and timing reports."
                echo
                echo " <Netlist Directory> is the name of directory where all RTL netlist are present."
                echo
                echo " <Early Library Path> is the file path of the early cell library to be used for STA."
                echo
                echo " <Late Library Path> is file path of the late cell library to be used for STA."
                echo
                echo " <Constraints file> is csv file path of constraints to be used for STA."
                exit 1
        fi
else
        #Code to execute if the proper CSV file exists.
        echo "Info: CSV file accepted"
        tclsh synui.tcl $1
fi
```

Results

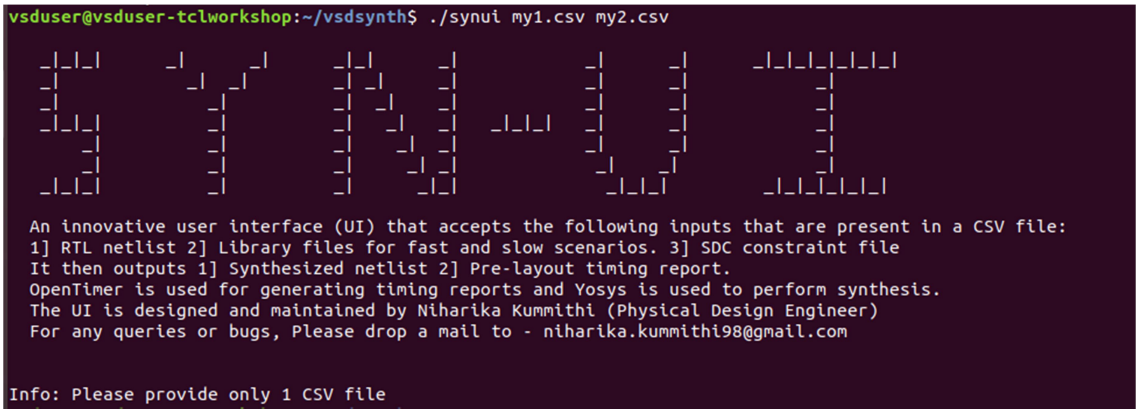
Case 1: No input file



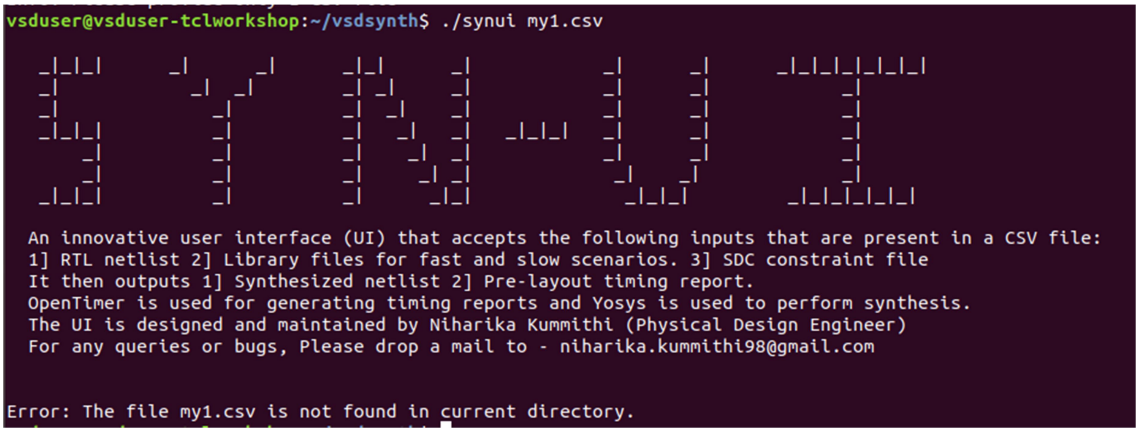
Case 2: File not of .csv format



Case 3: More than 1 file given as input



Case 4: The .csv file provided is not present in current directory.



Case 5: Result of using the option '-help'