MISS EXAM

Name		**User-ID**	
Date		**Subject**	**UNIX**
Marks	50	**Duration**	3 hours

- Write your Name and Date on every answer sheet.
- Write scripts on the answer sheet before logout.
- Exam login path: /home/VLSI/missad03/EXAMS/UNIX/EXAM_ID
- Change to Exam login path.

Q1) According to Cadence 5X directory structure, the organization of circuit database follows the format as shown below

Library -> Cell -> View -> files

But due to some mistakes the database we got for **AIP project** is in structure different from cadence 5X structure. The directory structure of the database we got is as follows

View -> Library -> Cell -> files

Additionally, the database includes an **Information** directory. This directory contains files with details about team members, such as their **usernames, VNC IDs, and email IDs**. The file names in this directory start with the library name, indicating which IP the data belongs to. However, some of this information has been recorded incorrectly.

The list of view and Library are given below

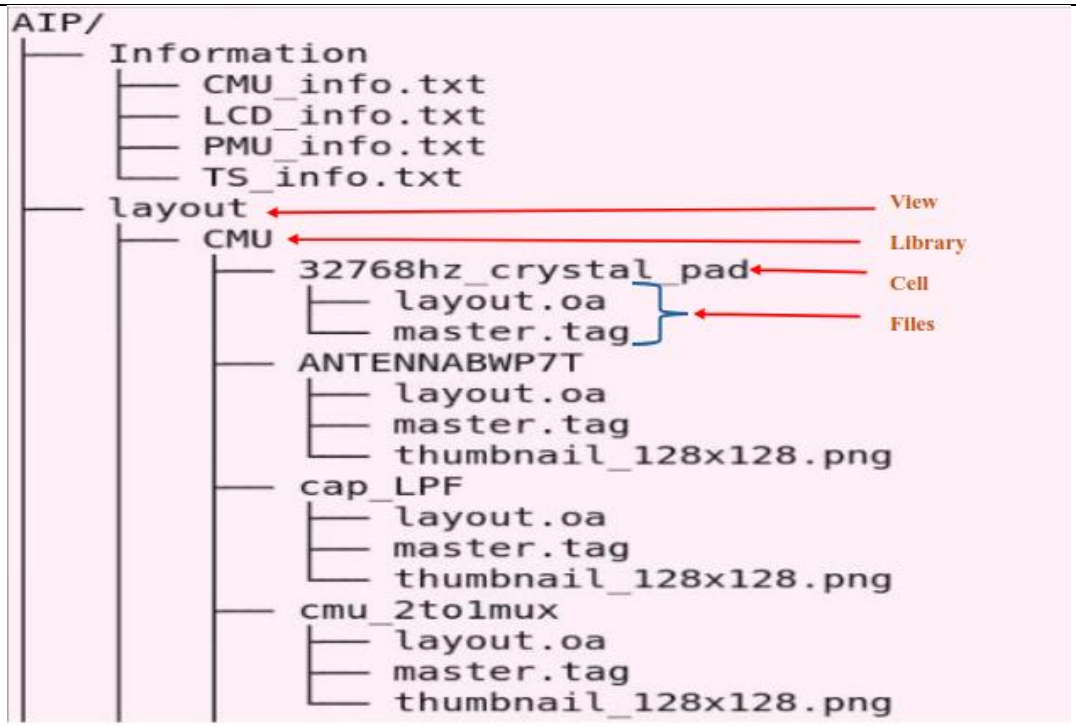
List of Views:

Schematic
Layout
Symbol

List of Libraries:

PMU
CMU
LCD
TS

Example directory structure is shown in the image below. You may look into the directory structure of directory AIP in your EXAM loginID.



We need to develop C-shell script which will work on above source directory and produces new database in the destination directory in required cadence 5x structure as described below.

1) C- shell script name: **2cadence5x.sh**

2) Script has two command line arguments. The first one is the source directory name, and the second one is destination directory name which are **AIP & LIB** respectively.

3) Script should check if two command line arguments are provided or not. If two command line arguments are not provided, then it should stop executing script normally and indicate to the user that required number of command line arguments are not provided. If more than two command line arguments are provided, then it should continue executing script and provide warning to the user by notifying that only first two arguments are considered for execution.

4) Check for existence of source directory and if it is directory or file. If not present or if it is file, notify the user and stop executing the script.

5) Check for existence of destination directory. If it does not exist, create a new one. If it is already present, then get approval (Y/N) from user whether to overwrite the directory or not. If user provides N response, then exit the script normally else removes the existing destination directory and creates new one.

6)

   a) Correct the directory structure to match the standard **Cadence 5X structure** (**Library → Cell → View → Files)**.

   b) Copy all the files into their correct locations within the updated directory structure

7)

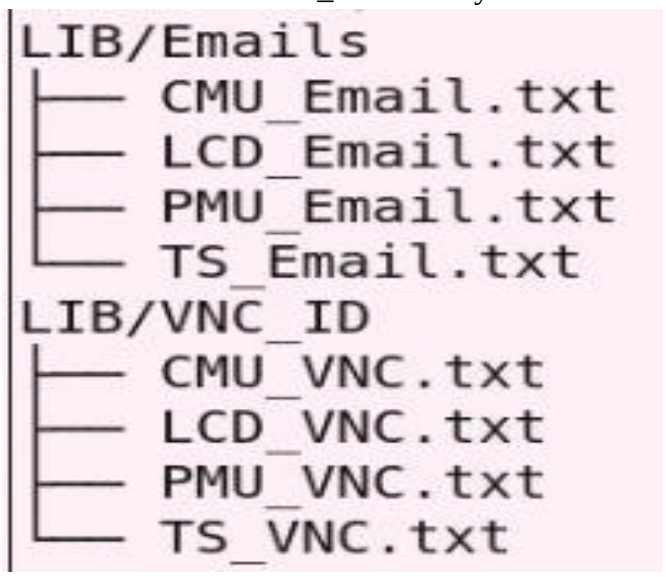
   a) Create two separate directories, **Emails** and **VNC_ID**, within the destination directory (LIB).

b) Extract **valid Email and VNC ID data** from the files in the **Information** directory from source directory (AIP).(refer to page 4 and 5 for valid Emails and VNC format)

c) Create separate files in the **Emails** and **VNC_ID** directories for each IP (based on Library name). These files should contain only valid data from the corresponding source files.

d) Ensure that each file is named as **LibraryName_Email.txt** for Emails data and **LibraryName_VNC.txt** for VNC ID's data in the Emails and VNC_ID directories in destination directory (LIB), respectively.

e) The files in the Emails and VNC_ID directory should be like this



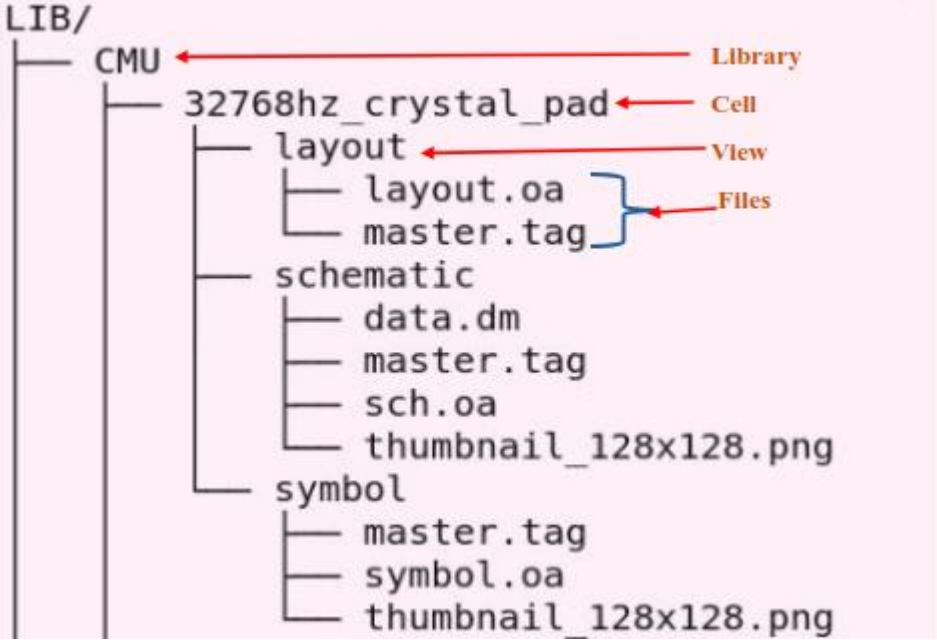
8) Also generate a summary report in the corrected directory i.e., destination directory for every library inside it with name as **LibraryName_report.txt**. The file should contain contents as follows

Library

No.of Schematics in Library:
No.of Layouts in Library:
No.of Symbols in Library:
Size of the Library(in human readable format**):**
No.of Cells in Library:
No.of Valid Emails:
No.of Valid VNC_ID's:

9) Command execution should be as shown below. Command should be executed from **/home/VLSI/missad03/ EXAMS/exam_id**
%2cadence5x ./AIP ./LIB

10) After successful execution of the above command destination directory **LIB** should contain data as shown below



NOTE:

1) **Valid Email Address Rules:**
   - **a)** The email address should follow the format **local-part@domain.**
   - b) Local-Part Rules:
     - i) Can contain letters (a–z, A–Z), digits (0–9), and special characters like ., _, -, and +.
     - ii) Cannot start or end with a special character.
   - c) Domain Rules:
     - i) Should have at least one . separating the domain name and the top-level domain (e.g., example.com).
     - ii) Each part of the domain (separated by .) must consist of letters and digits only.
     - iii) The domain must not start or end with ..

d) Example:

mosad1_9@examplecom (Invalid Email)

mosad2_19@online.net (Valid Email)

2) Valid VNC (IPv4) Address Rules:

a) An IPv4 address consists of **four decimal numbers** separated by dots (.).
b) Each number (octet) must be in the range **0 to 255**.
c) Octets must not have leading zeros (e.g., 192.168.01.1 is invalid). But it can have only one zero.
d) Each octet must contain 1 to 3 digits.

**********ALL THE BEST **********