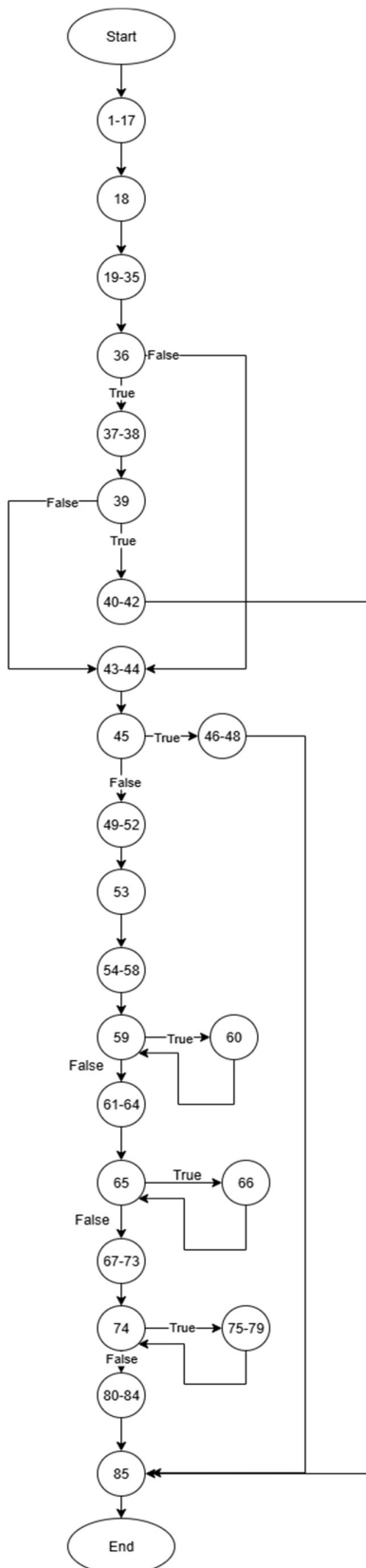


LAB3: Examine the following program for the Generations of Enrollment Number for the University Students admitted in an Academic Year.



3.2: Write the test cases to find the errors in the Program

1. Test Case1:

```
PS C:\Users\ahuja\OneDrive\Desktop\Software Testing> cd "c:\Users\ahuja\OneDrive\Desktop\Software Test:
Enter number of Program_Branch combinations to generate: 2

--- Combination 1 ---
Enter Year of Admission (YYYY): 2022

Select Program:
01 - B.Tech
02 - M.Tech
03 - Ph.D
Enter Program Code: 2

Select Branch:
01 - CSE
02 - IT
03 - ECE
04 - MAE
05 - AI & DS
Enter Branch Code: 2
Enter Total Number of Students: 2

Generated Roll Numbers for M.Tech - IT:
20220202001
20220202002

--- Combination 2 ---
Enter Year of Admission (YYYY): 2022

Select Program:
01 - B.Tech
02 - M.Tech
03 - Ph.D
Enter Program Code: 2

Select Branch:
01 - CSE
02 - IT
05 - AI & DS
Enter Branch Code: 2
Enter Total Number of Students: 3

Generated Roll Numbers for M.Tech - IT:
20220202001
20220202002
20220202003

Roll numbers saved to 'IGDTUW_RollNumbers.csv'
```

Expected Output: Should not have re-generated the enrolment number

Actual Output: Regenerating the enrolment numbers (Not Unique)

Result: FAIL

Comments: The code is regenerating the enrollment number for the same branch and program in the same academic year. ERROR

2. Test Case2:

File 'IGDTUW_RollNumbers.csv' already exists. Overwrite? (y/n): y
Enter number of Program_Branch combinations to generate: 1

--- Combination 1 ---

Enter Year of Admission (YYYY): 2022

Select Program:

01 - B.Tech

02 - M.Tech

03 - Ph.D

Enter Program Code: 5

Select Branch:

01 - CSE

02 - IT

03 - ECE

04 - MAE

05 - AI & DS

Enter Branch Code:

2

Enter Total Number of Students: 1

Generated Roll Numbers for - IT:

20220502001

Roll numbers saved to 'IGDTUW_RollNumbers.csv'

~\$ cd C:\Users\shubh\OneDrive\Desktop\Software Testing & ■

Expected Output: Should not create enrolment numbers

Actual Output: it is creating enrolment numbers for the program which is not specified.

Result: FAIL

Comments: Can't handle checking whether the Program and branch asked is Valid or not.

3. Test Case3:

```
File 'IGDTUW_RollNumbers.csv' already exists. Overwrite? (y/n):  
Enter number of Program_Branch combinations to generate: 1
```

```
--- Combination 1 ---
```

```
Enter Year of Admission (YYYY): 2027
```

```
Select Program:
```

```
01 - B.Tech
```

```
02 - M.Tech
```

```
03 - Ph.D
```

```
Enter Program Code: 1
```

```
Select Branch:
```

```
01 - CSE
```

```
02 - IT
```

```
03 - ECE
```

```
04 - MAE
```

```
05 - AI & DS
```

```
Enter Branch Code: 2
```

```
Enter Total Number of Students: 3
```

```
Generated Roll Numbers for B.Tech - IT:
```

```
20270102001
```

```
20270102002
```

```
20270102003
```

```
Roll numbers saved to 'IGDTUW_RollNumbers.csv'
```

Expected Output: ERROR

Actual Output: It is generating the enrolment numbers

Result: FAIL

Comments: No check for the validity of the academic year.

3.3: Summarize the error to facilitate the user to debug the program

The code is not able to:

- Check the combination of program and branch code, so that it does not regenerate the enrollment no. for the same combination.
- Keep a check on year before generating enrollment numbers, it should be less or equal to the current year.
- Check if the program, branch code is valid or not.

3.4: Debug the Program for the identified error

1. Test Case1:

```
PS C:\Users\ahuja\OneDrive\Desktop\Software Testing> cd "c:\Users\ahuja\OneDrive\Desktop\Software Testing"
File 'IGDTUW_RollNumbers.csv' already exists. Overwrite? (y/n): y
Enter number of Program_Branch combinations to generate: 2

--- Combination 1 ---
Enter Year of Admission (YYYY, <= 2025): 2022

Select Program:
01 - B.Tech
02 - M.Tech
03 - Ph.D
Enter Program Code: 01

Select Branch:
01 - CSE
02 - IT
03 - ECE
04 - MAE
05 - AI & DS
Enter Branch Code: 02
Enter Total Number of Students: 2

Generated Roll Numbers for B.Tech - IT:
20220102001
20220102002

--- Combination 2 ---
Enter Year of Admission (YYYY, <= 2025): 2022

Select Program:
01 - B.Tech
02 - M.Tech
03 - Ph.D
Enter Program Code: 01

01 - CSE
02 - IT
03 - ECE
04 - MAE
05 - AI & DS
Enter Branch Code: 02
This Program-Branch combination already has roll numbers generated. Skipping.
```

Expected Output: Should not re-generate same enrolment number combinations

Actual Output: Not regenerating the same combinations.

Results: PASS

2. Test Case2:

```

Enter Program Code:
PS C:\Users\ahuja\OneDrive\Desktop\Software Testing> cd "c:\Users\ahuja\OneDrive\Desktop\Software Testing"
File 'IGDTUW_RollNumbers.csv' already exists. Overwrite? (y/n): y
Enter number of Program_Branch combinations to generate: 1

--- Combination 1 ---
Enter Year of Admission (YYYY, <= 2025): 2022

Select Program:
01 - B.Tech
02 - M.Tech
03 - Ph.D
Enter Program Code: 5
Invalid Program Code. Try again.

Select Program:
01 - B.Tech
02 - M.Tech
03 - Ph.D
Enter Program Code: 1

Select Branch:
01 - CSE
02 - IT
03 - ECE
04 - MAE
05 - AI & DS
Enter Branch Code: 6
Invalid Branch Code. Try again.

Select Branch:
01 - CSE
02 - IT
03 - ECE
04 - MAE
05 - AI & DS
Enter Branch Code: █

```

Expected Output: Should verify the Program and Branch Code

Actual Output: It is verifying both.

Results: PASS

3. Test Case3:

```

02 - IT
PS C:\Users\ahuja\OneDrive\Desktop\Software Testing> cd "c:\Users\ahuja\OneDrive\Desktop\Software Testing"
File 'IGDTUW_RollNumbers.csv' already exists. Overwrite? (y/n): y
Enter number of Program_Branch combinations to generate: 1

--- Combination 1 ---
Enter Year of Admission (YYYY, <= 2025): 2027
Invalid year. Please enter a year <= 2025.
Enter Year of Admission (YYYY, <= 2025): █

```

Expected Output: Should verify the year entered

Actual Output: generates enrolment numbers after validating the year.

Results: PASS