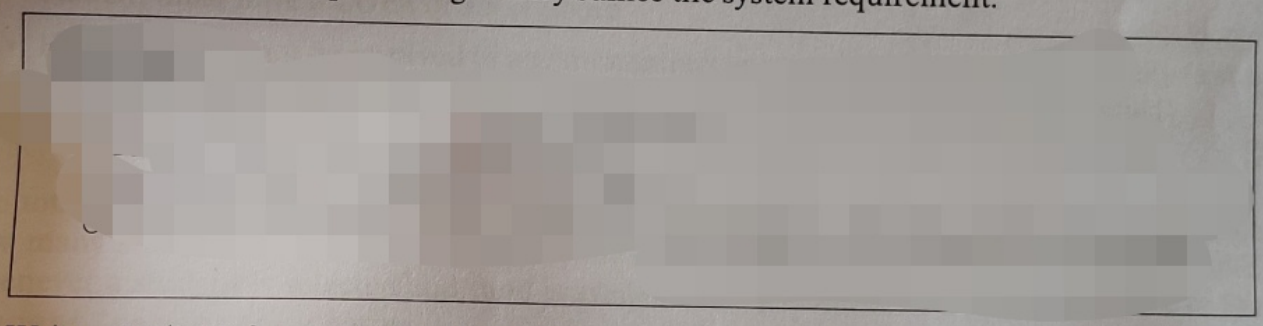
following description:

Planet Mars(PM) is a large telecom company of Bangladesh. It has customers over 10 million. Only registered customers are eligible to get SIM from PM. Registration requires customer's basic information such as Name, DOB, Address. A customer may get a number of SIMs (i.e. mobile numbers) but he/she registers only once. The company runs a number of *plans* where the important information are *plan name and charge per minute*. A customer may have multiple SIMs along with its plan information. Customer's outgoing calls are logged only. Relevant information for each outgoing call is CallID, SIM no (i.e. mobile no),CallBegin (date-time of call initialization) CallEnd (date-time when the call has been finished) and charge (relevant charge for the call based on both plan and duration).

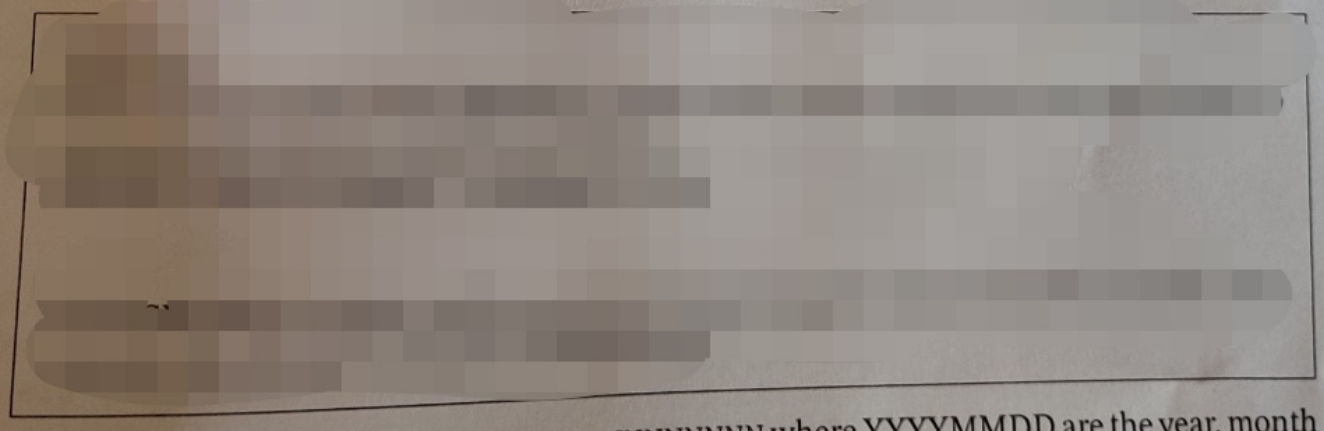
Your tasks are:

a) Create the required DDL statements to design the given system. You are free to choose attribute name and type as long as they suffice the system requirement. 5 (CO1) (PO1)



b) Write a PL/SQL function using the following guideline: 10 (CO1) (PO1)

Input: SIM no, CallBegin Time, CallEnd Time
Output: Charge calculated based on both plan and duration
Algorithm: For all charge calculation 1 minute pulse is maintained (i.e. 1 min 5 sec will be considered as 2 minutes!!!).



c) The format of the CallID is `YYYYMMDD.NNNNNNNN` where YYYYMMDD are the year, month (1 to 12) and day (day of the month) based on the CallBegin Date-time while NNNNNNNN is the incrementing numeric value. For instance the first call on January 23, 2023 will have a CallID 20230123.00000001 1((CO (PO

Write a function in PL/SQL to generate the CallID as described and place it in a suitable trigger.

3. Consider the following high-level system requirement: 15
Department of Computer Science and Engineering (CSE) of IUT has got a Merit Scholarship (MS) fund for only 2nd year students of Software Engineering. (CO1) (PO1)

Entities needed:

```
Students(ID, Name, Program, Year, CGPA)
Misconducts(StudentID, date-time, description)
StudentTransctions(StudentID,date-time,Amount (paid))
```

Policy for scholarship distribution: The initial eligibility for MS is:

- Student must have a CGPA of 3.5 or above
- He/She should not be involved in any misconduct as recorded in Misconducts entity (a student with higher CGPA but having misconduct record is automatically disqualified)
- Student with higher CGPA will be given preference

The total MS amount for each year is dynamic (changes over time). So, there is no assurance how many students will avail it. In other words it is distributed as long as fund is available. Whenever a student is selected and fund is available an appropriate transaction is made in the `StudentTransctions` entity.

Your task is to create a PL/SQL function as follows:

Input: Total MS amount, per student amount
Output: Number of students who received SC, number of students who were initially selected but did not receive MS.
Algorithm: Disburse Merit Scholarship as per the given policy.