**Java Assessment Time: 4 Hours**

For postpaid plans, each telecommunication company has to generate bill for each customer. There is a data file called CDR (Call Detail Record). This file contains call details from all customers in chronological order. Following are the list of fields that will be available:

1. Transaction Id
2. Customer Number
3. Number called by Customer
4. Plan – 1 denotes Plan 1; 2 denotes Plan 2
5. Date
6. Duration

For the sake of simplicity, not all the fields of CDR is provided in the file. The main objective of this assignment is to generate bill for each customer. Find below the business logic for calculating the monthly bill.

|  |  |  |
| --- | --- | --- |
|  | Plan 1 | Plan 2 |
| Base plan fare | Rs. 100 | Rs. 200 |
| Base talk time | 200 minutes | 400 minutes |
| Charge per minute after base talk time | Rs. 1 | Rs. 1 |

Find below the details about the input and output file.

**Input File**

1,9876543210,8765432109,1,01-08-2018 01:25:03,121

2,9876543211,8765432110,1,02-08-2018 02:26:04,237

3,9876543212,8765432111,2,03-08-2018 03:27:05,341

4,9876543210,8765432112,1,04-08-2018 04:28:06,80

5,9876543211,8765432113,1,05-08-2018 05:29:07,124

6,9876543212,8765432114,2,06-08-2018 06:30:08,40

7,9876543210,8765432115,1,07-08-2018 07:31:09,25

8,9876543211,8765432116,1,08-08-2018 08:32:10,34

9,9876543212,8765432117,2,09-08-2018 09:33:11,61

10,9876543210,8765432118,1,10-08-2018 10:34:12,96

11,9876543211,8765432119,1,11-08-2018 11:35:13,138

12,9876543212,8765432120,2,12-08-2018 12:36:24,20

13,9876543210,8765432121,1,13-08-2018 13:37:25,5

**Output file details**

There should be a separate file created for each customer which will contain the billing details. Find below the sample data file for card 9876543210. The billing file of each customer should look as follows:

**File name:** 9876543210.dat

Bill for 9876543210 (Plan 1)

Item Description Amount

================ ======

Base talk time fare 100

Additional talk time fare (127 minutes) 127

======

Amount to pay 327

======

Call Details

============

Date Called Number Duration

=================== ============= ========

01/08/2018 01:25:03 8765432109 121

04/08/2018 04:28:06 8765432112 80

07/08/2018 07:31:09 8765432115 25

10/08/2018 10:34:12 8765432118 96

13/08/2018 13:37:25 8765432121 5

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Total Call Duration 327

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Additional Minutes (327 – 200) 127

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**Scoring Mechanism**

|  |  |
| --- | --- |
| **Functionality or feature** | **Score** |
| Correct identification of classes, attributes and data types with correct packaging | 5 |
| Using inheritance to reuse plan calculation between the plans | 15 |
| Implement customer wise grouping of CDRs using HashMap | 5 |
| Correct indentation of files | 4 |
| Correct naming of variables | 4 |
| Creation of bill data files for each customer with all necessary data | 3 |
| Correct date format in generated data file | 3 |
| Numbers formatted with right alignment in data file | 3 |
| Computation of bill amount | 4 |
| Computation of total call duration | 4 |
| **Total** | **50** |

**SQL Assessment Time: 1 Hour**

Define ER Diagram for on an online medical shop application. End user should be able to perform following applications on this application. Design the database based on these requirements:

1. Customer can sign up with Name and Email
2. Customer should be able to pick a list of medicines and place an order
3. An order should address following aspects
   1. Customer
   2. Date of purchase
   3. List of items ordered with medicine name, no. of items purchase, unit price and overall price after multiplying no. of items and unit price.
   4. Total amount should be displayed

|  |  |
| --- | --- |
| **Aspects of ER diagram** | **Score** |
| Correct identification of entities | 5 |
| Correct identification of attributes | 5 |
| Correct entity relationship mapping | 5 |
| Correct naming conventions | 5 |
| **Total** | **20** |