



EASTERN UNIVERSITY, SRI LANKA

DEPARTMENT OF MATHEMATICS

THIRD YEAR EXAMINATION IN SCIENCE - 2015/2016

SECOND SEMESTER (OCT./NOV., 2018)

OC 352 - PRACTICAL WORK ON FUNDAMENTAL OF JAVA
PROGRAMMING

Answer all questions

Time allowed: Two Hours

1. The international standard letter/number mapping found on the telephone is shown below:

1	2 ABC	3 DEF
4 GHI	5 JKL	6 MNO
7 PQRS	8 TUV	9 WXYZ
+ * #	0	☎

i. Write a function `findLetter()` that prompts the user to enter a number and displays its corresponding letter or number.

[Hint: Letter/number will be printed according to the count value of number pressed on the telephone keypad. For example, to print letter C, number value will be 2 and count value will be 4, to print number 7, number value will be 7 and count value will be 1]

Sample Run:

Enter a number: 4

Enter the count: 3

The corresponding Letter is H

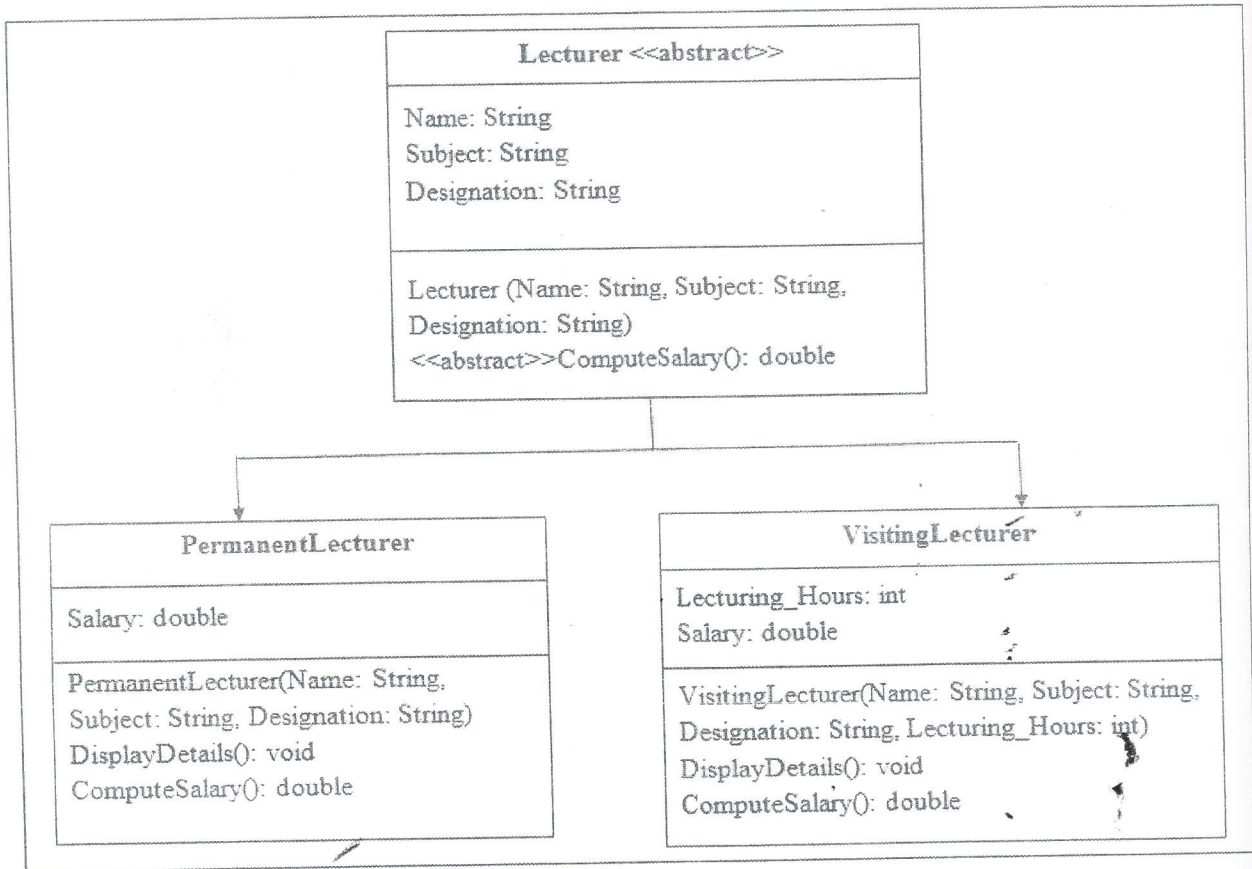
Enter a number: +

Enter the count: 3

+ is an invalid input

- ii. Create the ArrayList *SMSInfo* which stores the sequence of entered letter or number.
- ii. Write the *main()* function that displays the SMS which stores in the ArrayList *SMSInfo*.

Q2. Consider the following UML class diagram given below:



Write a Java program for the following instructions:

- i. Create an abstract super class named as *Lecturer* and create sub classes named as *PermanentLecurer* and *VisitingLecturer*.
- ii. *ComputeSalary()* is a method to find the salary of the *PermanetLecturer*, which is calculated by using the following criteria:
 - If the *Designation* of the lecturer is a *Professor*, then the total amount will be calculated by the sum of Basic Salary Rs. 56505, Academic Allowance Rs. 50000, Monthly Allowance Rs.20200, and Cost of Living Allowance Rs.15500.
 - If the *Designation* of the lecturer is a *Senior Lecturer*, then the total amount will be calculated by the sum of Basic Salary Rs. 48500, Academic Allowance Rs. 43000, Monthly Allowance Rs.16700, and Cost of Living Allowance Rs.12300.

- If the *Designation* of the lecturer is a *Probationary Lecturer*, then the total amount will be calculated by the sum of Basic Salary Rs. 43200, Academic Allowance Rs. 35000, Monthly Allowance Rs. 9400, and Cost of Living Allowance Rs. 8800.
 - 10% of total amount will be deducted for UPF to all *Permanent lecturers*.
- iii. *ComputeSalary()* is a method to find the salary of the *VisitingLecturer*, which is calculated by using the following criteria:
- If the *Designation* of the lecturer is a *Professor*, then the payment for an hour is Rs. 1000.
 - If the *Designation* of the lecturer is a *Senior Lecturer*, then the payment for an hour is Rs. 750.
 - If the *Designation* of the lecturer is *Probationary Lecturer*, then the payment for an hour is Rs. 500.
- iv. *DisplayDetails()* is a method to display all the data of the lecturer that have used in the program.
- v. Create a java class *Test* which has a *main()* method that computes the *Salary* for the above inherited classes.