Exp. No : 6	**COMPARTMENTALIZING THE CODING**

All programs must be done in Java.
Include description (syntax) about abstract class and interface

Q1. All must do: (4 marks)

Solve in Hackerrank:

- https://www.hackerrank.com/challenges/30-abstract-classes/problem
- https://www.hackerrank.com/challenges/java-abstract-class/problem
- https://www.hackerrank.com/challenges/java-interface/problem

Demo Question: (4 Marks)

Develop an interface called "Event" which contains Expenditure (), Prizes () are unimplemented methods. Also include few specifications given below,

A default method called welcome_msg(),

A static method called Thank_you msg(),

Create another interface called invitation that extends Event which contains design_invitation() as private member and display_invitation() as public method

create two customized classes called Birthday and Symposium utilize the above structure;

Choose your one questions based on the formulae given below,

Q2=((Regno%3)+1) (5 Marks)

1.	Develop an application in Java for automating the Banking Operations using interfaces. Create an interface called "Transaction" which contains the functions such as deposit, withdraw, and viewBalance. Create another interface called "Displayable" which contains the Display () function to display the account details. Create an abstract class called "Account" with bank account details such as acc_name, acc_no, and balance. Add necessary constructors. Create a "Bank" class which implements the "Transaction", "Displayable" interfaces and inherits "Account" class. Perform menu driven operations like Deposit, Withdraw and Balance Enquiry, View Account Details from a Main class. **Write logics in the corresponding methods.**
2.	Create two interfaces such as MathsOperable and TrigonometricOperable which contains the functions to perform the basic arithmetic operations (add, sub, mul, div, mod) and trigonometric operations (sine, cosine, tan) respectively.

	Create an abstract class called "Calculator" with details such as no1, no2 and result. Add necessary constructors. Implement these interfaces and inherit the class in "Operation" class to perform the specific operations. Demonstrate the operations in a menu driven fashion from a Main class. **Write logics in the corresponding methods.**
3.	Create an interface "Academic" with methods: calAcademicCredit(), registerSub(), assignFaculty(). Create another interface "NonAcademic" with method: calNonAcademicCredit(), registerClub(). Create an abstract class called "Course" with details such as name, reg_no, subjects, faculty, non_acad_club etc. Add necessary constructors. Implement these interfaces and inherit the class in "Student" class to perform the specific operations. Demonstrate the operations in a menu driven fashion from a Main class. **Write logics in the corresponding methods.**
Q3=((Regno%3)+1)	
1	Write a program to implement the Library Information System using packages with the following instructions a) Create a Books class in pkg1. b) Create an Admin class in pkg2. c) Create a User class in pkg3. d) Import all packages in Test class and do the following operations in a menu-driven fashion. Add books, Search books, and List books.
2	Develop an application in Java for automating the Banking Operations using packages. Create an Account class in pkg1, SavingsAccount class, and CurrentAccount class both of which inherits the Account class in pkg2. Perform menu-driven operations like Deposit, Withdraw, and Balance Enquiry from a Test class by importing these two packages.
3	Develop an application in Java for automating the Hostel Management System using packages. Create Hostel class in pkg1, Student class, and SRA class in pkg2. Perform menu driven operations like SRA Allocation,

	List of SRA's in a Hostel, List of Students under a particular SRA, and View Student Details from a Test class by importing these two packages.