Bharatiya Vidya Bhavan's
Sardar Patel Institute of Technology
(Autonomous Institute Affiliated to Mumbai University)
[Knowledge is Nectar]

ACADEMIC YEAR 2023-24

Class: F.Y. B. Tech. Semester: II Course: PSOOP(Java)

Course In charge: Nikahat Mulla

List of Problems for practice-Set II-Polymorphism/Encapsulation: Method/Constructor Overloading/Arrays/Array of objects

1. The payment option on any e-commerce website has several options like netbanking, COD, credit card, etc. That means, a payment method is overloaded several times to perform single payment function in various ways.

To perform the above functionality write a

class Purchase with Data members

1-item
2- price
3-quantity

Method
1-Billing()------price*quantity
overload payment method according to the type of payement option
2-payment()----COD----Billing+additional charges Rs.50
3-Payment(Bank name, Account no.)----net banking----billing+1%
4-Payment(Credit card No)-----Credit Card-----billing+2%

write a menu-driven program to perform payment with the following options:

1- COD---default option of payment
2-Netbanking---read bank details from a user
3-Creditcard-read credit card details from a user

2. Consider an inventory of items. Create class Item which represents an item for sale. Each item is identified by the item name, brand, category, price, quantity. Writeappropriate constructor for the same. Write an overloaded method called calculate as follows:
calculate() -> computes the total price of a given item in inventory
calculate(Item[])->computes the total price for the array of items passed as

parameter. calculate(Item[],brand)->computes the total price of the items for a particular brand calculate(Item[].name, brand)->computes total price of the items of the given name and brand

3. A Circus troupe has a number of animals. Each name is identified by a unique code. Also, the animal has a species(lion, tiger,elephant etc), its age(in years), an event in which they perform(eg. Balancing, fire-ball, ring-dance etc.). Write overloaded methods for the following:
findEvents(Circus[])->finds details of all animals in the circus array sorted event wise
findEvents(Circus[],species)->finds the events of all animals of the given species in the circus array sorted event wise
Assume a given animal performs in a unique event.