Java Assignments

Q1. Solve following

Day1 -2

1. Accept 3 numbers from command line arguments. If number is prime, then print the table of the number. Other wise divide number by 10 and display output
2. Write a program to maintain student information. For each student store studid, name, m1, m2 and m3 (marks of 3 subjects). Accept information for 2 students and display it as follows.

   Student Details:

   _____

   Student Id

   Name: Divya

   M1 :   78

   M2:   86

   M3:   89

3. Write a menu driven program to maintain student information. Modify Student class created in previous assignment. Add a member gpa in student class, add a function in student class to return GPA of a student

   calculateGPA()

   gpa=(1/3)*m1+(1/2)*m2+(1/4)*m3

Create an array to store Multiple students.

1. Display All Student

2. Search by id

3. Search by name

4. calculate GPA of a student

5. Exit

Q2. Write a java program to store information of your friends

id,name,lastname,hobbies,mobno,email,bdate,address

note: hobbies- a friend may have multiple hobbies

Accept all friends details and store it in an array

And do the following.

1. Display All Friend

2. Search by id

3. Search by name

4. Display all friend with a particular hobby

5. Exit

Q3. Inheritance

Write a java application to maintain information for xyz sports club. The

sports club wants to store employee details, for each employee store

id, name, mobile no, emailid, Department, designation, Date of joining.

Employees are of 3 types salaried employee or contract employee,Vendors. If employee is salaried employee, then store basic salary and if it is contract employee then store no of hrs worked and per hour rate and if it is vendor then store no_of _employees, amount

Also store information about members of club

For each member store id, name, mobile no, emailid, type of membership, amount paid.

For employee and members, id is autogenerated

design a menu driven program to perform following

Calculate net salary by using following formula

1.   Salaried Employee

Basic+DA+HRA-pf

DA-10% of basic

HRA – 15% of basic

Pf – 12% of Basic

2.   Contract Employee

Hr rate * no of hrs worked

    3   Vendor

Also store information about members of club

For each member store id, name, mobile no, emailid, type of membership, amount paid.

For employee and members, id is autogenerated

design a menu driven program to perform following

1. Display All employees (ask user salaried/contract employee display only one type of emplyees based on selection)

2. Search by id

3. Search by name

4. Display all employee

5. calculate salary and display for all emplyees with particular designation

6. accept department from user and display 5 employees of that department.

5. Exit

4. Design a class hierarchy to maintain information for ABCTel telecom company , company wants to maintain information of customers and vendors.
   For vendors they want to store vendorid, name, email, phone number,list of products they supply
   For customers they want to store custid, name, email, credit class(based on credit history), discounts, plan assigned to customer
   Customer may be Individual or a company
   For individual customer, system should store phone number
   For a customer of type Company, system should store info about relationship manager, credit line, extensions, list of numbers

5. Write a program to create class Exam, for each exam store examid, name ,topic, date of exam and array of questions.
   For each question store qno, question, opt1,opt2,opt3,opt4,ans,marks
   Create 2 exam objects One for java test and one for Html test by storing 5 questions in each exam
   Ask user which exam user want to appear
   1. Java
   2. HTML
      Conduct the test, and display the marks, if marks are >=3 the display congratulations you completed the test.
      Otherwise display message, better luck next time.
      Then ask user do you want to continue. Do accordingly

Q4. Use employee class to store id,name,sal,dept and designation.

    a.   Use HashSet to store multiple employee objects. Add required functions in the appropriate class.

       No duplicate employee entries are allowed.

       -2 Employee objects are same if their id is same

    b.   b. Use Treemap to store multiple Employee objects. Add required functions in the appropriate class.

==Product assignment==

Class Product

Id, name, type (perishable/nonperishable)

Mfgdate,

For perishable

Exp-date

Price

Nonperishable ---- category (furniture, statitionary, utensils)

CalculateTax()

If product is perishable then tax = 5% of price

Otherwise

Tax= 15% of price+100

    1.   Write a program to store information about IPL teams in ArrayList

       Create Team class to store teamid, tname, coachname, and list of players.

       and perform following operations

          1.   add new Team
          2.   delete a team
          3.   delete a player from team(accept player id to delete)
          4.   display all batsman
          5.   display all player with a speciality(accept speciality from user)
          6.   add a new player in a team
          7.   modify coach of a team
          8.   exit

2. ABC Recruitment company wants to maintain information about studentsDesign a menu driven program to store Student object as a key and skill set of student as value in a Map for every student store sid,name,bdate,degree, marks for degree.
and perform following operation
   1. add new student
   2. add new skill for a student
   3. delete student
   4. delete skill for a student
   5. display all students with given skill(accept skill from user)
   6. display all students with given degree(accept degree from user
   7. exit

Q5. Reflection Assignment.

1. Write a java program to find name of class, name of methods,

count of parameters, names of parameters, types of parameters for

following classes

1. Rectangle

2. Student

3. Friend

4. MyClass - add 2 methods method 5 and method6 which accepts 4 parameters

If number of parameters to a method >= 3 then invoke that method

Q6. Annotations and reflection

1. Create a annotation CustomAnnotation - This annotation should be used only

with methods and should be retained till runtime

2. annotate method 1 and method 3 in MyClass and invoke only methods which are

   annotated

3. Print names of the methods which are not annotated.

Q7. Write a java program to store List of Commonly found trees

in each city.

The List should be sorted on city names

Accept name of city and list of tree names from user. And perform following:

1. Find list of trees for a city

2. Delete List of a particular city

3. Add new entry in treemap

   Check whether city name already exists

4. Display all city names and List of trees (Use Iterator and foreach)

Q8.

Add following option in Q7. assignment

5. Add a new tree in existing list

6. Accept tree name from user. Display all cities in which the tree exists

Q9. Design a java project for managing user cart.

store username as key and list of products as value.

Step 1. Create a ArrayList of Product objects   //Existing products for sell

<Hint: Use static block add 10 products use hardcoded values>

for each product strore id, name,price,qty

step 2. Display following menu

1. Buy Products

2. Send the delivery of cart

if user selects 1. Buy Products

Display List of all available products

e.g

1. Shoes

2. shirts

3. Bags

Choice: 1

ask qty - 2

display Amount - 6000/-

Store cart for the user

      Username is key , list of products as value

display list of usernames

Accept username and Display bill for the user

Then ask user do you want to deliver (y/n)

if yes

   display message order delivered and

delete that cart from the list

if no then show the previous menu.

Project structure

com.demo.model

  product.java

com.demo.service

  CartService

com.demo.test

  TestCartProduct

Q10. Write a java program to create a Vector for storing Strings

  Use Enumerator to navigate through Vector

Q11. Write a Java program to store Student information studid, name, degree, email in a ArrayList

at the time of exit write data in a file in csv format

Q12. Write another program to read data from file created in Q11. and store it in the ArrayList and dipsplay all the Students information on the screen.

Q13. Modify code written in Q11. By using ObjectOutputStream to write data to file

Q14. Modify code written in Q12. By using ObjectInputStream to read data from file and display it.

Q15. Write a producer consumer program using inter thread communication

producer - will read a product from a file from productdata.dat

consumer - will calculate amount qty * price + 10% price

write it into a file id:pname:qty:price:amount productamount.dat

Q16. Write a java program by using executor service for finding addition of 51 numbers

create a task for finding addition of 3 numbers and return it

create executorservice with threadpool of size 5 then submit task to executorservice

Add all Futures to get addition.

Q17. Create enum grade and store following objects
Distinction(80,100),First(65,79),Second(50,64),Pass(40,49),Fail(0,39)

   Accept grade from user and display minimum and maximum marks for the grade.

 Q18. Write a java program to add, delete, modify, and display all products, display product based on productid, display all product with qty > given qty.

Create product table in data base to store data. (Use JDBC)

Q19.

Create user table in mysql to store username, address, mobile and email. Add 10 records in the table

Write a java program to accept username and address from user check whether user exists in user table. If exists, then display details of user on the screen and if user not found then accept user details and store it in the table (Use JDBC)