

Department of Physical Science
Faculty of Applied Science
In-course Assessment Examination - 02
IT1214 (P) - Object Oriented Programming

Answer all questions

August 2024

Time allowed: 45 Minutes

Q1. Create a class ***Author*** which contains:

- Private attributes:
 - String name
 - String email
 - char gender
- Constructor:
 - to initialize the instance variables name, email and gender
- Getter:
 - getName() - which return the name
 - getEmail() - which return the email address
 - getGender() - which return the gender
- Setter:
 - setEmail() - which assign the email address to email variable
- Method:
 - void printDetails() - which prints name, email and gender

Q2. Create a ***Book*** class which contains:

- Private attributes:
 - String name
 - double price
 - int quantity
 - Author author
- Two overloaded constructors:
 - to initialize the instance variables name, author and price with given values and the instance variable quantity with default value 0
 - to initialize all variables
- Getter:
 - getName() - which returns the name
 - getAuthor() - which returns the author
 - getPrice() - which returns the price
 - getQuantity() - which returns the quantity
- Setter:
 - setPrice() - which assign the price to price variable
 - setQuantity() - which assign the quantity to quantity variable

- Methods:
 - `toString()` - which prints book name, price, author name, author email, author gender

Q3. Write another Java class ***BookArray*** which contains the main method

1. An array of **Author** objects is created to store author details.
2. An array of **Book** objects is created to store book details, linking them with the appropriate authors.
3. `checkBookAvailability` method finds whether a requested book is available for purchase by getting name of the book and quantity from the user.
 - ✓ The app prints "Out of stock" message if particular book stock is 0
 - ✓ If the required number of books is less in stock, then the app prints the message "Requested no of books are not available!" and the details of the book.
 - ✓ If the required number of book stock is available, the app prints the message "available" and the details of the book.

Sample details are given below.

Following are the details of the ***author***

Author Name	Author Email	Author Gender
Kathy Sierra	kathyseirra@gmail.com	M
Walter Savitch	waltersavitch@gmail.com	M
Herbert Schildt	herbertschildt@gmail.com	M
Cay S.Horstmann	cayhorstmann@gmail.com	F
Craig Wall	craigwalls@yahoo.com	M
MG Martin	mgmartin@gmail.com	M
Y. Daniel Liang	danielliang@live.com	M
Nathan Clark	nathanclerk@gmail.com	F

Following are the details of ***books***

Book Name	Author Name	Price	Quantity
Head First Java	kathy	5360.00	5
Java:Introduction to Problem Solving	walter	4300.00	0
Java:Beginner's Guide	herbert	3874.00	8
Core Java	cay	3874.00	5
Core Java SE9	cay	5170.00	10
OCA/OCP Java SE 7	kathy	4330.00	0
Spring in Action	craig	5440.00	6
Java:Basics for Beginners	mg	980.00	4
Intro to Java Programming	daniel	2500.00	3
Java: Programming Basics	nathan	500.00	7

Q4. Compile and run your program to get the following output.

Enter Name of the book:

Java: Basics for Beginners

Enter Quantity:

4

Available!

Book Details

Book Name: Java: Basics for Beginners

Author Name: MG Martin

Email: mgmartin@gmail.com

Gender: M

Price:980.0

Enter Name of the book:

Core Java

Enter Quantity:

7

Requested number of books are not available. Only 5 books available at the moment!

Book Details

Book Name: Core Java

Author Name: Cay S.Horstmann

Email: cayhorstmann@gmail.com

Gender: F

Price: 3874.0