LEADING UNIVERSITY, SYLHET

Dept. of Computer Science & Engineering

An Assignment on

Class & Objects

Course Code: CSE-2214

Course Title: Object Oriented Programming Sessional

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Task – 1

```java
public class Book {
    String title_of_book,author_of_book;
    String publication_of_book,edition_of_book;
    int no_of_pages,price_of_book;

    void showInfo()
    {
        System.out.println("Title of Book: " + title_of_book);
        System.out.println("Edition of Book: " + edition_of_book);
        System.out.println("Author of Book: " + author_of_book);
        System.out.println("Number of Pages: " + no_of_pages);
        System.out.println("Price of Book: " + price_of_book + " tk");
        System.out.println("Publication of Book: " + publication_of_book);
    }
}
```

Task – 2

```
public class Task_2 {

    public static void main(String[] args) {
        Book book1 = new Book();
        Book book2 = new Book();
        Book book3 = new Book();

        // Putting Information
        book1.title_of_book = "JAVA for Beginners";
        book1.edition_of_book = "3rd Edition";
        book1.author_of_book = "Prof. David";
        book1.no_of_pages = 537;
        book1.price_of_book = 299;
        book1.publication_of_book = "Easy Coding Publication";

        book2.title_of_book = "Omega Point";
        book2.edition_of_book = "12th Edition";
        book2.author_of_book = "Humayun Ahmed";
        book2.no_of_pages = 122;
        book2.price_of_book = 128;
        book2.publication_of_book = "Shomoy Prokashoni";

        book3.title_of_book = "Digital Fortress";
        book3.edition_of_book = "5th Edition";
        book3.author_of_book = "Dan Brown";
        book3.no_of_pages = 356;
        book3.price_of_book = 520;
        book3.publication_of_book = "St. Martin Press";

        // Calling showInfo() method for all books;
        System.out.println("\n***Book1 Information***\n");
        book1.showInfo();
        System.out.println("\n***Book2 Information***\n");
        book2.showInfo();
        System.out.println("\n***Book3 Information***\n");
        book3.showInfo();

        // Printing Memory Address of all objects
        System.out.println("\nMemory Address of Book1 = "+ book1);
        System.out.println("Memory Address of Book2 = "+ book2);
        System.out.println("Memory Address of Book3 = "+ book3);

        // Setting book1 = book3 and editing book1.edition_of_book
        book1 = book3;
        book1.edition_of_book = "1st Edition";

        // Calling showInfo()
        System.out.println("\n\t\t---Setting book1 = book3 Memory Address---\n"
        book3.showInfo();

        // Printing Memory Address of all objects
        System.out.println("\nMemory Address of Book1 = "+ book1);
        System.out.println("Memory Address of Book2 = "+ book2);
        System.out.println("Memory Address of Book3 = "+ book3);
    }

}
```

Task – 3

```
public class BillCalculator {

    double calculateBasicBill(double unit) {
        double basicbill;
        if(unit<=199)
        {
            basicbill = unit*1.20;
        }
        else if(200<=unit && unit<400)
        {
            basicbill = unit*1.50;
        }
        else if(400<=unit && unit<600)
        {
            basicbill = unit*1.80;
        }
        else
        {
            basicbill = unit*2.00;
        }
        return basicbill;
    }
    double calculateSurcharge(double BasicBill) {
        double charge=0;
        if(BasicBill>400)
        {
            charge = 0.15*BasicBill;
        }
        else if(BasicBill<100)
        {
            charge = 100-BasicBill;
        }
        return charge;
    }

    double getTotalBill(double unit)
    {
        double BasicBill = calculateBasicBill(unit);
        double Surcharge = calculateSurcharge(BasicBill);
        return BasicBill + Surcharge;
    }
}
```

Task – 3 (main Method)

```
public class Task_3 {

    public static void main(String[] args) {
        BillCalculator myBill = new BillCalculator();

        System.out.println("Total Bill for 25 Unit: Tk. "+ myBill.getTotalBill(25));
        System.out.println("Total Bill for 250 Unit: Tk. "+ myBill.getTotalBill(250));
        System.out.println("Total Bill for 812 Unit: Tk. "+ myBill.getTotalBill(812));

    }

}
```

Q. What do you think the difference between Book and BillCalculator class?

Ans: Here are some things which I think are the differences between Book and BillCalculator Class:

Book Class	BillCalculator Class
1. It has instance variable.	1. There are no instance variables in this class.
2. Here when we call a method from another class, we need to create an object of this class to access this method.	2. Here when we called a method from the same class, no objects are created to access this method.
3. Non return type methods are declared here to analyze how parameter works and there's no 'this' keyword.	3. Return type method are declared here.
4. showInfo() method is used to print the books' detail.	4. No special method is used for printing.