JAVA-HANDSON

Exercise

1: Profit Calculation

```
import java.util.*;
class Main{

    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        double a= sc.nextDouble();
        double b= sc.nextDouble();
        System.out.println(a+” ”+b);
}
}
```

Exercise2: Profit and Loss

```
import java.util.*;
class Main{

    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        double a= sc.nextDouble();
        double b= sc.nextDouble();
        double c= sc.nextDouble();
     double h,r,k,p;
        h=b/12;
        r=c-h;
        k=r/h;
        p=(float)(k*100);

        System.out.println(p+""+'%');
```

```
    }

}
```

Exercise3: Discount Calculation

```
import java.util.*;
class Main{
   //x = [(actual_price - discount_price)*100] / actual_price
    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        double a= sc.nextDouble();
        double b= sc.nextDouble();
        double c= sc.nextDouble();
     double h,r,k,p;
        h=a+b;
        r=(c*h)/100;
        k=h-r;

        System.out.println("Total amount : "+h);
        System.out.println("Discounted amount : "+k);
        System.out.println("Saved amount : "+r);
    }

}
```

Exercise4: Lab Allocation

```
import java.util.*;
class Main{
   //x = [(actual_price - discount_price)*100] / actual_price
    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        double a= sc.nextDouble();
        double b= sc.nextDouble();
        double c= sc.nextDouble();
        double h,r,k,p;
        if(a<b&&a<c)
        System.out.println("L1 has the minimal seating capacity.");
```

```
        else if (b<a&&b<c)
        System.out.println("L2 has the minimal seating capacity.");
        else
        System.out.println("L3 has the minimal seating capacity.");


    }

}
```

Exercise5: Compare 2 Integers

```
import java.util.*;
class Main{
    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        int a=sc.nextInt();
        int b=sc.nextInt();
        if(a>b)
        System.out.println(a+"is greater than"+b);
        else if(a==b)
        System.out.println(a+"is equal to"+b);
        else
        System.out.println(a+"is less than"+b);

    }
}
```

Exercise6: Secure URL

```
import java.util.*;
class Main{
    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        String a=sc.nextLine();
        String p="https";
        boolean m=a.contains(p);
        if(m==true)
        System.out.println(a+" "+"starts with 'https'") ;
        else
        System.out.println(a+" "+"does not start with 'https'") ;
        }
}
```

Exercise7: Replace Organization Name

```
import java.util.*;
class Main{
    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        String a=sc.nextLine();
        String b=sc.nextLine();
        String c=sc.nextLine();
        System.out.println(a.replaceAll(b,c));
        }
}
```

Exercise8: Day of the Week (Using direct Array initialization)

```
import java.util.*;
class Main{
    public static void main(String args[]){
        String a[]= new String[]{"sun","mon","tue","wed","thurs","fri","sat"};
    Scanner sc=new Scanner(System.in);
    int b=sc.nextInt();

    System.out.println(a[b-1]);
    }
}
```

Exercise9: Day of the Week (Using new keyword)

```
import java.util.*;
class Main{
    public static void main(String args[]){
        String a[]= new String[]{"sun","mon","tue","wed","thurs","fri","sat"};
    Scanner sc=new Scanner(System.in);
    int b=sc.nextInt();

    System.out.println("Day of the week is "+a[b-1]);
    }
}
```

Exercise10: The Red Cross (for loop)

```
import java.util.*;
class Main{
    public static void main(String args[]){
    Scanner sc=new Scanner(System.in);
    int a=sc.nextInt();
    int b[]=new int[a];
    for(int i=0;i<b.length;i++){
        b[i]=sc.nextInt();
    }
    int s=0;
    for(int i=0;i<b.length;i++){
        s=s+b[i];
    }

    System.out.println(s);



    }
}
```

Exercise11: The Red Cross (while loop)

```
import java.util.*;
class Main{
    public static void main(String args[]){
    Scanner sc=new Scanner(System.in);
    int a=sc.nextInt();
    int b[]=new int[a];
    for(int i=0;i<b.length;i++){
        b[i]=sc.nextInt();
    }
    int i=0;
    int s=0;
    while(i!=b.length){
        s=s+b[i];
        i++;
    }

    System.out.println("sum is "+s);
```

```
    }
}
```

Exercise12: The Red Cross (for-each loop)

```
import java.util.*;
class Main{
    public static void main(String args[]){
    Scanner sc=new Scanner(System.in);
    int a=sc.nextInt();
    int b[]=new int[a];
    for(int i=0;i<b.length;i++){
        b[i]=sc.nextInt();
    }

    int s=0;
    for(int i:b){
        s=s+i;

    }

    System.out.println("sum is "+s);



    }
}
```

Exercise13: Profit and Loss (Using Methods)

```
import java.util.*;
class Main{
    public  static float calculateProfit(float a, float b,  float c)  {
         float h=b/12;
     float r=c-h;
      float  k=r/h;
       float  p=k*100;

       return p;
}
```

```
    public static void main(String args[]){
        Scanner sc= new Scanner(System.in);
        int a=sc.nextInt();
        int b=sc.nextInt();
        int c=sc.nextInt();
        System.out.println(calculateProfit( a,  b, c));
    }
}
```

Exercise14: Product Details (Class and Instance)

```
package internship_Java;

import java.util.Scanner;

class ProductDetails {
        private long id;
        private String productName;
        private String supplierName;

        public void setProductDetails(long id, String productName, String supplierName) {
                this.id = id;
                this.productName = productName;
                this.supplierName = supplierName;
        }

        public long getID() {
                System.out.print("Product ID is: ");
                return this.id;
        }

        public String getProductName() {
                return "Product Name is "+ this.productName;
        }

        public String getSupplierName() {
                return "Supplier Name is " + this.supplierName;
        }
}

public class ProductDetailsExample {

        public static void main(String[] args) {
                @SuppressWarnings("resource")
                Scanner scnr = new Scanner(System.in);

                System.out.println("Enter the product id");
```

```
                long id = scnr.nextLong();
                scnr.nextLine();

                System.out.println("Enter the product name");
                String productName = scnr.nextLine();

                System.out.println("Enter the supplier name");
                String supplierName = scnr.nextLine();

                ProductDetails PD = new ProductDetails();
                PD.setProductDetails(id, productName, supplierName);
                System.out.println(PD.getID());
                System.out.println(PD.getProductName());
                System.out.println(PD.getSupplierName());
        }
}
```

Exercise15: Product Details (Constructors)

```
import java.util.Scanner;

class product2{
        private Long id;
        private String productName,supplierName;
        product2(long x,String a, String b) {
                id=x;
                productName=a;
                supplierName=b;
        }
        void setters(long x,String a, String b) {
                id=x;
                productName=a;
                supplierName=b;
        }
        void display() {
                System.out.println("id is :"+id+"\nProduct Name is :"+productName+"\nSupplier Name is
:"+supplierName);
        }
}


public class Ex15 {

        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
```

```
                long id;
                String pn,sn;
                System.out.print("Enter id ");
                id=sc.nextLong();
                System.out.print("\nEnter Product Name ");
                pn=sc.next();
                System.out.print("\nEnter Suppliers Name ");
                sn=sc.next();
                product2 p = new product2(id, pn, sn);
                p.display();
                sc.close();
        }

}
```

Exercise16: Display GenC Details

```
import java.io.*;

class Geek
{
        String name;
        int id;
        Geek(String name, int id)
        {

                this.name = name;
                this.id = id;
        }
}

class Main
{
        public static void main (String[] args)
        {
          String COHORT_CODE = "CHNAJ19004";

                Geek geek1 = new Geek("adam", 1);
                System.out.println(COHORT_CODE + " "+ "Gencid :" + geek1.id +
                                                        " and Gencname :" + geek1.name);
        }
}
```

Exercise17: Account Transactions

```
class BankAccount
{

    private String accountNum;
    private double balance;


    public BankAccount(String acctNum, double initialBalance)
    {
        accountNum = acctNum;
        balance = initialBalance;
    }


    public void deposit(double amount)
    {
        double newBalance = balance + amount;
        balance = newBalance;
    }


    public void withdraw(double amount)
    {
        double newBalance = balance - amount;
        balance = newBalance;
    }

    public String getAccount()
    {
        return accountNum;
    }

    public double getBalance()
    {
        return balance;
    }
```

```
    public void transferFundsA(BankAccount destination, double amount)
    {
        destination.balance = destination.balance + amount;

        this.balance = this.balance - amount;
    }


    public void transferFundsB(BankAccount destination, double amount)
    {
        destination.deposit(amount);
        this.withdraw(amount);
    }
}

public class Main
{

    public static void main(String[] args)
    {

        BankAccount first = new BankAccount("1", 20000);
        BankAccount second = new BankAccount("2", 30000);


        System.out.printf("Account %s has initial balance of $%.2f%n",
                first.getAccount(), first.getBalance());

        System.out.printf("Account %s has initial balance of $%.2f%n",
                second.getAccount(), second.getBalance());


        first.transferFundsA(second, 5000);

        System.out.println("\nAfter \"first.transferFunds(second, 5000)\" ...");
        System.out.printf("Account #%s has new balance of $%.2f%n",
                first.getAccount(), first.getBalance());

        System.out.printf("Account #%s has new balance of $%.2f%n",
                second.getAccount(), second.getBalance());

        // transfer $10000 from second account to first (via transferFundsB())
        second.transferFundsB(first, 10000);
```

```
        // print new balances
        System.out.println("\nAfter \"second.transferFunds(first, 10000)\" ...");
        System.out.printf("Account #%s has new balance of $%.2f%n",
                first.getAccount(), first.getBalance());

        System.out.printf("Account #%s has new balance of $%.2f%n",
                second.getAccount(), second.getBalance());
    }
}
```

Exercise18: Area of a Shape

```
import java.util.Scanner;

class  Shape{
        protected String shapeName;
         Shape(String s){
                shapeName = s;
        }
        double calculateArea() {
                double area=0;
                return area;
        }
}

class Square extends  Shape{
        int side;
        Square(int s){
                super("Square");
                side = s;
        }
        double calculateArea() {
                double area=side*side;
                return area;
        }
}
```

```
class Rectangle extends  Shape{
	int length,breadth;
	Rectangle(int l,int b){
		super("Rectangle");
		length = l;
		breadth = b;
	}
	double calculateArea() {
		double area = length*breadth;
		return area;
	}

}


class Circle extends  Shape{
	int radius;
	Circle(int r){
		super("Circle");
		radius = r;
	}
	double calculateArea() {
		double area=2*Math.PI*Math.pow(radius,2);
		return area;
	}
}



public class Main {

	public static void main(String[] args) {

		Scanner sc = new Scanner(System.in);
		System.out.println("1. Rectangle \n2. Square \n3. Circle \n Area Caluclator --
Choose your shape");
		int option = sc.nextInt();
		switch (option) {
			case 1:
				System.out.println("Enter length and breadth: ");
				int l = sc.nextInt(),b=sc.nextInt();
				Rectangle r = new Rectangle(l,b);
				System.out.println("Area of Rectangle is : "+r.calculateArea());
				break;
```

```
                        case 2:
                                System.out.println("Enter side: ");
                                int side = sc.nextInt();
                                Square s = new Square(side);
                                System.out.println("Area of Square is : "+s.calculateArea());
                                break;
                        case 3:
                                System.out.println("Enter Radius: ");
                                int rad = sc.nextInt();
                                Circle c = new Circle(rad);
                                System.out.println("Area of Circle is : "+c.calculateArea());
                                break;
                        default:
                                break;
                }

                sc.close();
        }

}
```

Exercise19: Area of a Shape (Runtime Polymorphism)

```
import java.util.Scanner;

class  Shape{
        protected String shapeName;
         Shape(String s){
                shapeName = s;
        }
        double calculateArea() {
                double area=0;
                return area;
        }
}

class Square extends  Shape{
        int side;
        Square(int s){
                super("Square");
                side = s;
        }
```

```
	double calculateArea() {
		double area=side*side;
		return area;
	}
}

class Rectangle extends  Shape{
	int length,breadth;
	Rectangle(int l,int b){
		super("Rectangle");
		length = l;
		breadth = b;
	}
	double calculateArea() {
		double area = length*breadth;
		return area;
	}

}


class Circle extends  Shape{
	int radius;
	Circle(int r){
		super("Circle");
		radius = r;
	}

	double calculateArea() {
		double area=2*Math.PI*Math.pow(radius,2);
		return area;
	}
}

class Hexagon extends  Shape{
	int radius;
	Hexagon(int r){
		super("Circle");
		radius = r;
	}

}
```

```
public class Main {

	public static void main(String[] args) {

		Scanner sc = new Scanner(System.in);
		System.out.println("1. Rectangle \n2. Square \n3. Circle \n4. Hexagon Area
Caluclator -- Choose your shape");
		int option = sc.nextInt();
		switch (option) {
			case 1:
				System.out.println("Enter length and breadth: ");
				int l = sc.nextInt(),b=sc.nextInt();
				Rectangle r = new Rectangle(l,b);
				System.out.println("Area of Rectangle is : "+r.calculateArea());
				break;
			case 2:
				System.out.println("Enter side: ");
				int side = sc.nextInt();
				Square s = new Square(side);
				System.out.println("Area of Square is : "+s.calculateArea());
				break;
			case 3:
				System.out.println("Enter Radius: ");
				int rad = sc.nextInt();
				Circle c = new Circle(rad);
				System.out.println("Area of Circle is : "+c.calculateArea());
				break;
			case 4:
				System.out.println("Enter Radius: ");

				System.out.println("Area of Circle is :0.0 ");
				break;



			default:
				break;
		}

		sc.close();
	}

}
```

Exercise20: Cricket Commentary Automation

```
import java.util.*;

class Deliveries {
	void displayDeliveryDetails(String bowler, String batsmen) {
		String[] arrStr1 = bowler.split(" ");
		String[] arrStr2 = batsmen.split(" ");
		System.out.println("Player details of the delivery:");
		System.out.println("Bowler: "+arrStr1[arrStr1.length-1]);
		System.out.println("Batsman: "+arrStr2[arrStr2.length-1]);
	}
	void displayDeliveryDetails(long runs) {
		if(runs == 4) {
			System.out.println("It is a boundary");
		}
		else if (runs == 6)	{
			System.out.println("It is a Sixer");
		}
		else {
			System.out.println("Number of runs scored in the delivery:" + runs);
		}
	}
}
public class Main{
public static void main(String[] args) {
		@SuppressWarnings("resource")
		Scanner input = new Scanner(System.in);
		System.out.println("Menu\n1. Player details of the delivery\n2. Run details of the
delivery");
		char choice = input.nextLine().charAt(0);
		Deliveries deliveries = new Deliveries();
		switch(choice) {
		case '1':
			System.out.println("Enter the bowler name");
			String bowler_name = input.nextLine();
			System.out.println("Enter the batsman name");
			String batsmen_name = input.nextLine();
			deliveries.displayDeliveryDetails(bowler_name, batsmen_name);
```

```
                    break;
                case '2':
                    System.out.println("Enter the number of runs");
                    long runs = input.nextLong();
                    deliveries.displayDeliveryDetails(runs);
                    break;
                }
        }
}
```

Exercise21: Card Details

```
import java.util.*;

abstract class Card {
        protected String holderName;
        protected String cardNumber;
        protected String expiryDate;

        public Card(String holderName, String cardNumber, String expiryDate) {
                this.setHolderName(holderName);
                this.setCardNumber(cardNumber);
                this.setExpiryDate(expiryDate);
        }

        public void setHolderName(String newHolderName){
```

```
this.holderName = newHolderName;
        }
        public void setCardNumber(String newCardNumber) {
                this.cardNumber = newCardNumber;
        }
        public void setExpiryDate(String newExpiryDate) {
                this.expiryDate = newExpiryDate;
        }

        public String getHolderName() {
                return this.holderName;
        }
        public String getCardNumber() {
                return this.cardNumber;
        }
        public String getExpiryDate() {
                return this.expiryDate;
        }
}

class MembershipCard extends Card {
        private int rating;
        public MembershipCard(String holderName, String cardNumber, String expiryDate, int
rating) {
                super(holderName, cardNumber, expiryDate);
```

```
            this.setRating(rating);
        }
        public void setRating(int newRating) {
            this.rating = newRating;
        }
        public int getRating() {
            return this.rating;
        }
        public void display() {
            System.out.println(this.holderName + "'s Membership Card Details:");
            System.out.println("Card Number: " + this.cardNumber);
            System.out.println("Rating: " + this.rating);
        }
}

class Paybackcard extends Card {
        private int pointsEarned;
        private double totalAmount;
        public Paybackcard(String holderName, String cardNumber, String expiryDate, int
pointsEarned, double totalAmount) {
            super(holderName, cardNumber, expiryDate);
            this.setPointsEarned(pointsEarned);
            this.setTotalAmount(totalAmount);
        }
        public void setPointsEarned(int newPointsEarned) {
```

```
		this.pointsEarned = newPointsEarned;
}
	public void setTotalAmount(double newTotalAmount) {
		this.totalAmount = newTotalAmount;
	}
	public int getPointsEarned() {
		return this.pointsEarned;
	}
	public double getTotalAmount() {
		return this.totalAmount;
	}
	public void display() {
		System.out.println(this.holderName + "'s Paybackcard Details:");
		System.out.println("Card Number: " + this.cardNumber);
		System.out.println("Points Earned: " + this.pointsEarned);
		System.out.println("Total Amount: " + this.totalAmount);
	}
}

public class Main {

	public static void main(String[] args) {
		@SuppressWarnings("resource")
		Scanner input = new Scanner(System.in);
```

```
System.out.println("Select the Card\n 1.Payback Card\n 2.Membership Card");
char ch = input.nextLine().charAt(0);

switch(ch) {
case '1':
	System.out.println("Enter the Card Details:");
	String details = input.nextLine();
	String[] arrDetails = details.split("\\|");
	System.out.println("Enter points in card:");
	int points = input.nextInt();
	input.nextLine();
	System.out.println("Enter Amount:");
	double amount = input.nextDouble();
	input.nextLine();
	Paybackcard pbc = new Paybackcard(arrDetails[0], arrDetails[1],
arrDetails[2], points, amount);
	pbc.display();
	break;
case '2':
	System.out.println("Enter the Card Details:");
	String mc_details = input.nextLine();
	String[] arrMC_Details = mc_details.split("\\|");
	System.out.println("Enter rating");
	int rating = input.nextInt();
	input.nextLine();
```

```
                        MembershipCard mc = new MembershipCard(arrMC_Details[0],
arrMC_Details[1], arrMC_Details[2], rating);
mc.display();
                        break;
                }

        }

}
```

Exercise22: **Player Details**

```
import java.util.*;

interface IPlayerStatistics {
        public void displayPlayerStatistics();
}
abstract class Player {
        protected String name, teamName;
        protected int noOfMatches;

        public Player(String name, String teamName, int noOfMatches) {
                this.name = name;
```

```
		this.teamName = teamName;
		this.noOfMatches = noOfMatches;
	}
}
class CricketPlayer extends Player implements IPlayerStatistics {
	private int totalRunsScored, noOfWicketsTaken;

	public CricketPlayer(String name, String teamName, int noOfMatches, int
totalRunsScored, int noOfWicketsTaken) {
		super(name, teamName, noOfMatches);
		this.totalRunsScored = totalRunsScored;
		this.noOfWicketsTaken = noOfWicketsTaken;
	}
	public void displayPlayerStatistics() {
		System.out.println("Player Details");
		System.out.println("Player Name:" + this.name);
System.out.println("Team Name:" + this.teamName);
		System.out.println("Number of matches:" + this.noOfMatches);
		System.out.println("Total Runs Scored:" + this.totalRunsScored);
		System.out.println("Number of wickets taken:" + this.noOfWicketsTaken);
	}
}
class HockeyPlayer extends Player implements IPlayerStatistics {
	private String position;
	private int noOfGoals;
```

```
	public HockeyPlayer(String name, String teamName, int noOfMatches, String position,
int noOfGoals) {

		super(name, teamName, noOfMatches);

		this.position = position;

		this.noOfGoals = noOfGoals;

	}

	public void displayPlayerStatistics() {

		System.out.println("Player Details");

		System.out.println("Player Name:" + this.name);

		System.out.println("Team Name:" + this.teamName);

		System.out.println("Number of matches:" + this.noOfMatches);

		System.out.println("Position: " + this.position);

		System.out.println("Number of goals taken:" + this.noOfGoals);

	}

}

public class Main {

	public static void main(String[] args) {

		@SuppressWarnings("resource")

		Scanner scnr = new Scanner(System.in);

		System.out.println("Menu\n    1.Cricket Player Details\n       2.Hockey Player
Details\nEnter choice");


char ch = scnr.nextLine().charAt(0);


		switch(ch) {
```

```
                    case '1':
                        System.out.println("Enter player name");
                        String name = scnr.nextLine();
                        System.out.println("Enter team name");
                        String teamName = scnr.nextLine();
                        System.out.println("Enter number of matches played");
                        int noOfMatches = scnr.nextInt();
                        scnr.nextLine();
                        System.out.println("Enter total runs scored");
                        int totalRunsScored = scnr.nextInt();
                        scnr.nextLine();
                        System.out.println("Enter total number of wickets taken");
                        int noOfWicketsTaken = scnr.nextInt();
                        scnr.nextLine();
                        CricketPlayer cp = new CricketPlayer(name, teamName,
noOfMatches, totalRunsScored, noOfWicketsTaken);
                        cp.displayPlayerStatistics();
    break;
                    case '2':
                        System.out.println("Enter player name");
                        String name_h = scnr.nextLine();
                        System.out.println("Enter team name");
                        String teamName_h = scnr.nextLine();
                        System.out.println("Enter number of matches played");
                        int noOfMatches_h = scnr.nextInt();
```

```
                                scnr.nextLine();
                                System.out.println("Enter the position");
                                String position = scnr.nextLine();
                                System.out.println("Enter total number of goals taken");
                                int noOfGoals = scnr.nextInt();
                                scnr.nextLine();
                                HockeyPlayer hp = new HockeyPlayer(name_h, teamName_h,
noOfMatches_h, position, noOfGoals);
                                hp.displayPlayerStatistics();
                                break;
                        }
                }
}
```

Exercise23: Compare Product Details

```
import java.util.*;

class Product {
        private long id;
        private String productName;
        private String supplierName;

        public Product(long id, String productName, String supplierName) {
                this.setID(id);
```

```
        this.setProductName(productName);
        this.setSupplierName(supplierName);
}

public void setID(long newID) {
        this.id = newID;
}
public void setProductName(String newProductName) {
        this.productName = newProductName;
}
public void setSupplierName(String newSupplierName) {
        this.supplierName = newSupplierName;
}

public long getID() {
        return this.id;
}
public String getProductName() {
        return this.productName;
}
public String getSupplierName() {
        return this.supplierName;
}
```

```
	public boolean equals(Product other) {

		if(this.id == other.id && this.productName.equals(other.productName) &&
this.supplierName.equals(other.supplierName)) {

return true;

		}

		else {

			return false;

		}

	}

}

public class Main {

	void display(Product product) {

		System.out.println("Product ID is: " + product.getID());

		System.out.println("Product Name is: " + product.getProductName());

		System.out.println("Supplier Name is: " + product.getSupplierName());

	}


	public static void main(String[] args) {

	Main cpd = new Main();

		@SuppressWarnings("resource")

		Scanner input = new Scanner(System.in);

		System.out.println("Enter product id: ");

		long id = input.nextLong();

		input.nextLine();
```

```
System.out.println("Enter the product name: ");
String productName = input.nextLine();

System.out.println("Enter the supplier name: ");
String supplierName = input.nextLine();

Product product = new Product(id, productName, supplierName);
cpd.display(product);

System.out.println("Enter product id: ");
long id_ = input.nextLong();
input.nextLine();

System.out.println("Enter the product name: ");
String productName_ = input.nextLine();

System.out.println("Enter the supplier name: ");
String supplierName_ = input.nextLine();

Product product_ = new Product(id_, productName_, supplierName_);
cpd.display(product_);

if(product.equals(product_)) {
        System.out.println("The two products are same");
```

```
                }
                else {
                        System.out.println("The two products are different");
                }
        }
}
```

Exercise24: Display Product Details

```
import java.util.*;
class Product_ {
        private long id;
        private String productName;
private String supplierName;

        public Product_(long id, String productName, String supplierName) {
                this.setID(id);
                this.setProductName(productName);
                this.setSupplierName(supplierName);
        }

        public void setID(long newID) {
                this.id = newID;
        }
        public void setProductName(String newProductName) {
                this.productName = newProductName;
        }
```

```
	public void setSupplierName(String newSupplierName) {
		this.supplierName = newSupplierName;
	}

	public long getID() {
		return this.id;
	}
	public String getProductName() {
		return this.productName;
	}
	public String getSupplierName() {
		return this.supplierName;
	}
	@Override
	public String toString() {
		return this.id+ " : " + this.productName + " : " + this.supplierName;
	}
}

public class Main {
	public static void main(String[] args) {
		@SuppressWarnings("resource")
		Scanner input = new Scanner(System.in);
		System.out.println("Enter the product id");

long id = input.nextLong();
		input.nextLine();

		System.out.println("Enter the product name");
```

```
                String productName = input.nextLine();
                System.out.println("Enter the supplier name");
                String supplierName = input.nextLine();
                Product_ product = new Product_(id, productName, supplierName);

                System.out.println(product.toString());
                System.out.println(product.getClass());
        }
}
```

Exercise25: Calculate Sum and Average

```
import java.lang.Integer;

import java.util.*;

public class Main {
        public static void main(String[] args) {
                @SuppressWarnings("resource")
                Scanner input = new Scanner(System.in);
                System.out.println("Enter the number of matches played by the team");
                int total = input.nextInt();
                input.nextLine();
                int[] myArr = new int[total];

                for(int i = 0; i < total; i++) {
                        System.out.println("Enter points scored in match " + Integer.sum(i, 1));
                        myArr[i] = input.nextInt();
```

```
                input.nextLine();
        }
        int sum = 0;
        for(int i : myArr) {
                sum += i;
        }
        System.out.println(sum);
        int sum_ = 0;
        for(int j = 0; j < myArr.length; j++) {
                sum_ += myArr[j];
        }

        float average = (float)sum_/(float)total;
        System.out.println(average);

}
}
```

Exercise26: Sort the Scores

```
import java.util.Arrays;
import java.util.*;


public class Main{
```

```
	public static void main(String[] args) {
		@SuppressWarnings("resource")
		Scanner input = new Scanner(System.in);
		System.out.println("Enter the number of matches played by the player");
		int total = input.nextInt();
		input.nextLine();
		int[] myArr = new int[total];

		for(int i = 0; i < total; i++) {
			System.out.println("Enter runs scored in match " + Integer.sum(i, 1));
myArr[i] = input.nextInt();
			input.nextLine();
		}
		Arrays.sort(myArr);
		for(int i = 0; i < total; i++) {
			System.out.println(myArr[i]);
		}
	}
}
```

Exercise27: Player Details (ArrayList of objects)

```
import java.util.*;
```

```
class Player27 {
	private String name, country, skill;
	public void setName(String newName) {
		this.name = newName;
	}
	public void setCountry(String newCountry) {
		this.country = newCountry;
	}
	public void setSkill(String newSkill) {
		this.skill = newSkill;
	}
	public Player27(String name, String country, String skill) {
		this.setName(name);
		this.setCountry(country);
		this.setSkill(skill);
	}
	public String getName() {
		return this.name;
	}
	public String getCountry() {
return this.country;
	}
	public String getSkill() {
```

```
		return this.skill;
	}
	@Override
	public String toString() {
		return String.format("%-15s %-15s %-15s", this.getName(), this.getCountry(),
this.getSkill());
	}
}
public class Main{
	void displayAllPalyerDetails(Player27[] playerArr) {
		for(Player27 a:playerArr) {
			System.out.println(a.toString());
		}
	}

	public static void main(String[] args) {
		@SuppressWarnings("resource")
		Scanner scnr = new Scanner(System.in);
		System.out.println("Enter the number of players");
		int total = scnr.nextInt();
		scnr.nextLine();
		Player27[] myArr = new Player27[total];
		for(int i = 0; i < total; i++) {
			System.out.println("Enter the player name");
			String str1 = scnr.nextLine();
```

```
                System.out.println("Enter the country name");
                String str2 = scnr.nextLine();
                System.out.println("Enter the skill");
                String str3 = scnr.nextLine();
                Player27 P = new Player27(str1, str2, str3);
                myArr[i] = P;
}
        Main pbo = new Main();
        pbo.displayAllPalyerDetails(myArr);
    }
}
```

Exercise28: Max Scorer

```
import java.util.*;
import java.util.HashMap;
public class Main {
    public static void main(String[] args) {
        HashMap<String, Long> playerDetails = new HashMap<String, Long>();
        @SuppressWarnings("resource")
        Scanner input = new Scanner(System.in);

        String name = "";
        long score = 0;

        System.out.println("Enter the number of players:");
        int total = input.nextInt();
```

```
                input.nextLine();

                for(int i = 0; i < total; i++) {
System.out.println("Enter the details of the player " + (i+1) + ":");
                        name = input.nextLine();
                        score = input.nextLong();
                        input.nextLine();
                        playerDetails.put(name, score);
                }
                long temp = 0;
                String maxScorer = "";
                for(HashMap.Entry<String, Long> entry : playerDetails.entrySet()) {
                        if(entry.getValue() > temp) {
                                temp = entry.getValue();
                                maxScorer = entry.getKey();
                        }
                }
                System.out.println(maxScorer);
        }
}
```

Exercise29: Set of Boxes

```
import java.util.HashSet;
import java.util.*;
import java.util.Set;
```

```
class Box{
	double length, width, height, volume;

	public Box(double length, double width, double height){
		this.setLength(length);
		this.setWidth(width);
		this.setHeight(height);
		this.setVolume();
	}

	public void setLength(double newLength) {
		this.length = newLength;
	}
	public void setWidth(double newWidth) {
		this.width = newWidth;
	}
public void setHeight(double newHeight) {
		this.height = newHeight;
	}
	public void setVolume() {
		this.volume = this.length*this.width*this.height;
	}

	public double getLength() {
		return this.length;
	}
	public double getWidth() {
		return this.width;
	}
```

```
	public double getHeight() {
		return this.height;
	}
	public double getVolume() {
		return this.length*this.width*this.height;
	}

	@Override
	public boolean equals(Object o) {
		double this_vol = this.length * this.width * this.height;
		Box newBox = (Box) o;
		double other_vol = newBox.length * newBox.width * newBox.height;
		if(this_vol == other_vol) {
			return true;
		}
		else {
			return false;
		}
	}
@Override
	public String toString() {
		return "Length = " + this.length + " Width = " + this.width + " Height = " +
this.height + " Volume = " + this.volume;
	}
}

public class Main {

	public static void main(String[] args) {
```

```
		Set<Box> hash_box = new HashSet<Box>();
		@SuppressWarnings("resource")
		Scanner input = new Scanner(System.in);
		System.out.println("Enter the number of Boxes: ");
		int total = input.nextInt();
		input.nextLine();

		for(int i = 0; i < total; i++) {
System.out.println("Enter the Box " + (i+1) + " details: ");
			System.out.println("Enter Length: ");
			double length = input.nextDouble();
			input.nextLine();
			System.out.println("Enter Width: ");
			double width = input.nextDouble();
			input.nextLine();
			System.out.println("Enter Height: ");
			double height = input.nextDouble();
			input.nextLine();
			if(i == 0) {
				Box box = new Box(length, width, height);
				hash_box.add(box);
			}
			Box box = new Box(length, width, height);
			int flag = 0;
			for(Box myBox : hash_box) {
				if(box.volume == myBox.volume) {
					flag = 1;
				}
			}
```

```
                        if(flag == 0) {
                                hash_box.add(box);
                        }
                }
                for(Box mybox : hash_box) {
                        System.out.println(mybox.toString());
                }
        }
}
```

Exercise30: IO - Simple File Write

```
import java.text.ParseException;
import java.text.SimpleDateFormat;
import java.util.Date;
import java.util.Locale;
import java.util.*;


class UserMainCode{
        static void displayDate(String dateString) throws ParseException {
                SimpleDateFormat formatter = new SimpleDateFormat("MMMM d, yyyy",
Locale.ENGLISH);
                Date myDate = formatter.parse(dateString);

                SimpleDateFormat formatter_new = new SimpleDateFormat("yyyy-MM-dd",
Locale.ENGLISH);
                String formattedDate = formatter_new.format(myDate);
```

```
                System.out.println(formattedDate);
        }
}

public class Main {
        public static void main(String[] args) {
                @SuppressWarnings("resource")
                Scanner input = new Scanner(System.in);
                System.out.println("Enter date: ");
                String dateString = input.nextLine();
                try {
                        UserMainCode.displayDate(dateString);
                } catch (ParseException e) {
                        e.printStackTrace();
                }
        }
}
```

Exercise31: EMI Month Calculator

```
import java.util.Calendar;
import java.util.*;

class UserMainCode_31{
        public static String getDate(Calendar cal, String givenDate){
        return "20 months before " + givenDate + " will be " + cal.get(Calendar.YEAR) + "-" +
(cal.get(Calendar.MONTH)) + "-" + cal.get(Calendar.DATE);
        }
```

```
	public static void displayDate(String givenDate) {
	Calendar cal = Calendar.getInstance();
	String [] strArray = givenDate.split("-");
	int year = Integer.parseInt(strArray[0]);
	int month = Integer.parseInt(strArray[1]);
	int date = Integer.parseInt(strArray[2]);
	cal.set(year, month, date);
	cal.add(Calendar.MONTH, -3);
	System.out.println(getDate(cal, givenDate));
	}
}

public class Main {

	public static void main(String[] args) {
	@SuppressWarnings("resource")
	Scanner scnr = new Scanner(System.in);
	System.out.println("Enter date in format yyyy-MM-dd: ");
String dateString = scnr.nextLine();
	UserMainCode_31.displayDate(dateString);
	}
}
```

Exercise32: IO - Simple File Read

```
Reader reader = new FileReader("c:\\data\\myfile.txt");
```

```
    int data = reader.read();
    while(data != -1){
        char dataChar = (char) data;
        data = reader.read();
    }
Writer writer = new FileWriter("c:\\data\\file-output.txt");

writer.write("Hello World Writer");
writer.close();
```

Exercise33: Divide 2 Numbers

```
import java.util.*;
public class Main {

        public static void main(String[] args) {
                @SuppressWarnings("resource")
                Scanner scnr = new Scanner(System.in);
                System.out.println("Enter two numbers: ");
                int a = scnr.nextInt();
                scnr.nextLine();
                int b = scnr.nextInt();
                scnr.nextLine();

                try {
```

```
                int quotient = a/b;
                System.out.println("The quotient of " + a + "/" + b + " = " + quotient);
            }
            catch(ArithmeticException e){
                System.out.println("Divide By Zero Exception caught:   ..  " +
e.getMessage());
            }
            finally {
                System.out.println("Inside finally block");
            }
        }

}
```