

THE STATE UNIVERSITY OF ZANZIBAR

SCHOOL OF BUSINESS



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REGISTRATION NO: BITA/6/22/032/TZ

PROGRAM NAME: BITA –SECOND YEAR

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MODULE NAME: OBJECT ORIENTED PROGRAMMING

MODULE CODE: PT821

TEACHER NAME: MR.FAUZ

MODE OF ASSIGNMENT: INDIVIDUAL ASSIGNMENT.

QUESTION ONE

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

```
/**
```

```
 * Write a description of class quesone here.
```

```
 *
```

```
 * @author (FAIZA KHAMIS HASSAN)
```

```
 * @version (BITA/6/22/032/TZ)
```

```
 */
```

```
public class quesone
```

```
{
```

```
    // Question one
```

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

```
        Scanner input = new Scanner(System.in);
```

```
        int x,rightDigit,leftDigit,y,sum;
```

```
        System.out.print("Enter a 2-digit integer where the rightmost digit is non-zero: ");
```

```
        x = input.nextInt();
```

```
        rightDigit = x % 10;
```

```
        leftDigit = x / 10;
```

```
        y = rightDigit * 10 + leftDigit;
```

```
        sum = x + y;
```

```
        System.out.println("x: " + x);
```

```
        System.out.println("y: " + y);
```

```
        System.out.println("x + y: " + sum);
```

```
    }
```

```
}
```

QUESTION TWO

```
import java.util.*;

/**
 * Write a description of class questwo here.
 *
 * @author (FAIZA KHAMIS HASSAN)
 * @version (BITA/6/22/032/TZ)
 */
public class questwo
{
    //Question two

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

        int age;

        String name,city,coll_name,prof,animal,pets_nme;

        System.out.println("Enter the name ");
        name=input.nextLine();

        System.out.println("Enter the age ");
        age=input.nextInt();

        System.out.println("Enter your city ");
        city=input.nextLine();

        System.out.println("Enter your proffesional ");
        prof=input.nextLine();

        System.out.println("Enter the animal type");
        animal=input.nextLine();
    }
}
```

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

```
pets_nme=input.nextLine();
```

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

```
coll_name=input.nextLine();
```

```
System.out.print("There was one person named "+name);
```

```
System.out.print(" who live in city "+city);
```

```
System.out.print(". At age of "+age);
```

```
System.out.print(", " +name);
```

```
System.out.print(" went to college at "+coll_name);
```

```
System.out.print(". " +name);
```

```
System.out.print(" graduate and went to work as proffesional. Then"+name);
```

```
System.out.print(" adopted an animal name"+pets_nme);
```

```
System.out.print(". They booth live happily every after!");
```

```
}
```

```
}
```

QUESTION THREE

```
/**
```

```
* Write a description of class questthree here.
```

```
*
```

```
* @author (FAIZA KHAMIS HASSAN)
```

```
* @version (BITA/6/22/032/TZ)
```

```
*/
```

```
public class questthree
```

```
{
```

```
// Question Three
```

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

```

double annualSalary;
int payPeriodsPerMonth;
int payPeriodsPerYearTwiceAMonth;
double grossPayTwiceAMonth;
int payPeriodsPerYearBiWeekly;
double grossPayinWeekly;
annualSalary = 32500.0;
payPeriodsPerMonth = 2;
payPeriodsPerYearTwiceAMonth = 24;
grossPayTwiceAMonth = annualSalary / payPeriodsPerYearTwiceAMonth;
payPeriodsPerYearBiWeekly = 26;
grossPayinWeekly = annualSalary / payPeriodsPerYearBiWeekly;
System.out.println("Gross pay for each pay period in twice month: $" + grossPayTwiceAMonth);
System.out.println("Gross pay for each pay period in-weekly: $" + grossPayinWeekly);
}

```

```

}

```

QUESTION FOUR

```

import java.util.*;

/**
 * Write a description of class quesfour here.
 *
 * @author (FAIZA KHAMIS HASSAN)
 * @version (BITA/6/22/032/TZ)
 */
public class quesfour
{
    // Question four

```

```

public static void main(String[] args) {
    Scanner input = new Scanner(System.in);
    System.out.print("Enter the actual value of the property: ");
    double actualValue = input.nextDouble();
    System.out.print("Enter the tax rate for each $100.00 of assessed value: ");
    double taxRate = input.nextDouble();
    double assessedValue = actualValue * 0.6;
    double taxPerHundred = taxRate * assessedValue / 100;
    double annualPropertyTax = taxPerHundred * (assessedValue / 100);
    System.out.println("The annual property tax for a property valued at $" + actualValue + " is: $" +
        annualPropertyTax);
}
}

```

DECISION QUESTIONS

QUESTION ONE

```

import java.util.*;

/**
 * Write a description of class decisionone here.
 *
 * @author (FAIZA KHAMIS HASSAN)
 * @version (BITA/6/22/032/TZ)
 */
public class decisionone
{

```

// Question one

```
public static void main(String[] args) {  
    Scanner input = new Scanner(System.in);  
  
    System.out.print("Enter age: ");  
    int age = input.nextInt();  
    System.out.print("Enter years of citizenship: ");  
    int yearsOfCitizenship = input.nextInt();  
    boolean senateEligible = age >= 30 && yearsOfCitizenship >= 9;  
    boolean houseEligible = age >= 25 && yearsOfCitizenship >= 7;  
    System.out.println("Senate Eligibility: " + (senateEligible ? "Eligible" : "Not Eligible"));  
    System.out.println("House Eligibility: " + (houseEligible ? "Eligible" : "Not Eligible"));  
}  
}
```

QUESTION TWO

```
import java.util.*;  
  
/**  
 * Write a description of class decisiontwo here.  
 *  
 * @author (FAIZA KHAMIS HASSAN)  
 * @version (BITA/6/22/032/TZ)  
 */  
public class decisiontwo  
{  
    public static void main(String[] args) {  
        Scanner input = new Scanner(System.in);
```

```

System.out.print("Enter a five-digit integer: ");

int number = input.nextInt();

if (number >= 10000 && number <= 99999) {
    int originalNumber = number;
    int reversedNumber = 0;
    while (number > 0) {
        int digit = number % 10;
        reversedNumber = reversedNumber * 10 + digit;
        number /= 10;
    }

    if (originalNumber == reversedNumber) {
        System.out.println("The number " + originalNumber + " is a palindrome.");
    } else {
        System.out.println("The number " + originalNumber + " is not a palindrome.");
    }
} else {
    System.out.println("Please enter a valid five-digit integer.");
}

}

}

```

QUESTION THREE

```

import java.util.*;

/**
 * Write a description of class decisionthree here.
 *
 * @author (FAIZA KHAMIS HASSAN)

```



```

* @version (BITA/6/22/032/TZ)
*/
public class decisionthree
{
    // Question three decision

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter employee's ID number: ");
        int idNumber = input.nextInt();
        System.out.print("Enter hourly rate of pay: $");
        double hourlyRate = input.nextDouble();
        System.out.print("Enter number of hours worked for the week: ");
        double hoursWorked = input.nextDouble();
        double regularHours = Math.min(40, hoursWorked);
        double overtimeHours = Math.max(0, hoursWorked - 40);
        double regularPay = regularHours * hourlyRate;
        double overtimePay = overtimeHours * 1.5 * hourlyRate;
        double grossPay = regularPay + overtimePay;
        double incomeTax = (grossPay > 500.00) ? 0.15 * grossPay : 0;
        double parkingCharge = 20.00;
        double deductions = incomeTax + parkingCharge;
        double netPay = grossPay - deductions;
        System.out.println("ID Number:\t\t" + idNumber);
        System.out.println("Pay Rate:\t\t$" + hourlyRate);
        System.out.println("Regular Hours:\t\t" + regularHours);
        System.out.println("Overtime Hours:\t\t" + overtimeHours);
        System.out.println("Total Hours:\t\t" + hoursWorked);
        System.out.println("Regular Pay:\t\t$" + regularPay);
    }
}

```

```

        System.out.println("Overtime Pay:\t\t$" + overtimePay);

        System.out.println("Gross Pay:\t\t$" + grossPay);

        System.out.println("Deductions:\t\t$" + deductions);

        System.out.println("Net Pay:\t\t$" + netPay);

    }

}

QUESTION FOUR

import java.util.*;

/**
 * Write a description of class decisionfour here.
 *
 * @author (FAIZA KHAMIS HASSAN)
 * @version (BITA/6/22/032/TZ)
 */
public class decisionfour
{
    // QUESTION FOUR DECISION

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

        String[] runners = new String[3];

        int[] times = new int[3];

        for (int i = 0; i < 3; i++) {

            System.out.print("Enter name of runner " + (i + 1) + ": ");

            runners[i] = input.nextLine();

            System.out.print("Enter finishing time (in minutes) for " + runners[i] + ": ");

            times[i] = input.nextInt();

```

```

        input.nextLine();
    }
    for (int i = 0; i < 2; i++) {
        for (int j = 0; j < 2 - i; j++) {
            if (times[j] > times[j + 1]) {
                int tempTime = times[j];
                times[j] = times[j + 1];
                times[j + 1] = tempTime;
                String tempRunner = runners[j];
                runners[j] = runners[j + 1];
                runners[j + 1] = tempRunner;
            }
        }
    }
    System.out.println("\nOrder of runners:");
    for (int i = 0; i < 3; i++) {
        System.out.println((i + 1) + ". " + runners[i] + " - " + times[i] + " minutes");
    }

}

}

```

QUESTION FIVE

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

```
/**
```

```
* Write a description of class decisionfive here.
```

```
*
```

```
* @author (FAIZA KHAMIS HASSAN)
```

```
* @version (BITA/6/22/032/TZ)
*/
public class decisionfive
{
    // Question five decision
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the quiz score (0-5): ");
        int quizScore = input.nextInt();
        char grade;
        switch (quizScore) {
            case 5:
                grade = 'A';
                break;
            case 4:
                grade = 'B';
                break;
            case 3:
                grade = 'C';
                break;
            case 2:
                grade = 'D';
                break;
            case 1:
                grade = 'F';
                break;
            case 0:
                grade = 'F';
                break;
        }
    }
}
```

```

        default:
            System.out.println("Please enter a valid quiz score between 0 and 5.");
            return;
        }

        System.out.println("The grade for the quiz score " + quizScore + " is: " + grade);

    }

}

```

REPITITION QUESTIONS

QUESTION ONE

```

/**
 * Write a description of class test2 here.
 *
 * @author (FAIZA KHAMIS HASSAN)
 * @version (BITA/6/22/032/TZ)
 */
public class repitionone
{
    public static void main(String[] args)
    {
        int x =1;

        System.out.println(x+"N\tN*10\tN*100\tN*1000");

        while (x<=5){

            System.out.println(x + "\t" + x*10 + "\t" + x*100 + "\t" + x*1000);

            x++;
        }
    }
}

```

```
    }  
}
```

```
}
```

QUESTION TWO

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

```
/**
```

```
 * Write a description of class repititiontwo here.
```

```
 *
```

```
 * @author (FAIZA KHAMIS HASSAN)
```

```
 * @version (BITA/6/22/032/TZ)
```

```
 */
```

```
public class repititiontwo
```

```
{
```

```
    // Question two repition
```

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

```
        Scanner input = new Scanner(System.in);
```

```
        System.out.print("What is the speed of the vehicle in mph? ");
```

```
        int speed = input.nextInt();
```

```
        System.out.print("How many hours has it traveled? ");
```

```
        int hours = input.nextInt();
```

```
        System.out.println("Hour   Distance Traveled");
```

```
        System.out.println("-----");
```

```
        for (int i = 1; i <= hours; i++) {
```

```
            int distance = speed * i;
```

```
            System.out.println(i + "    " + distance);
```

```
        }
```

```
    }
```

```
}
```

QUESTION THREE

```
import java.util.*;

/**
 * Write a description of class repitionthree here.
 *
 * @author (FAIZA KHAMIS HASSAN)
 * @version (BITA/6/22/032/TZ)
 */
public class repitionthree
{
    // Question three
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the number of years: ");
        int numYears = input.nextInt();
        int totalMonths = numYears * 12;
        double totalRainfall = 0;

        for (int year = 1; year <= numYears; year++) {
            for (int month = 1; month <= 12; month++) {
                System.out.print("Enter the inches of rainfall for Year " + year + ", Month " + month + ": ");
                double rainfall = input.nextDouble();
                totalRainfall += rainfall;
            }
        }

        double averageRainfall = totalRainfall / totalMonths;
        System.out.println("\nNumber of months: " + totalMonths);
        System.out.println("Total inches of rainfall: " + totalRainfall);
        System.out.println("Average rainfall per month: " + averageRainfall + " inches");
    }
}
```

```
}  
}
```

QUESTION FOUR

```
import java.util.*;  
  
/**  
 * Write a description of class repitionfour here.  
 *  
 * @author (FAIZA KHAMIS HASSAN)  
 * @version (BITA/6/22/032/TZ)  
 */  
  
public class repitionfour  
{  
    // Question four  
    public static void main(String[] args) {  
        Scanner input = new Scanner(System.in);  
        int sum = 0;  
        int number;  
        System.out.println("Enter a series of positive numbers (enter a negative number to end):");  
        do {  
            System.out.print("Enter a number: ");  
            number = input.nextInt();  
            if (number >= 0) {  
                sum += number;  
            }  
        } while (number >= 0);  
        System.out.println("The sum of the positive numbers entered is: " + sum);  
    }  
}
```


QUESTION FIVE

```
import java.util.*;

/**
 * Write a description of class test3 here.
 *
 * @author (FAIZA KHAMIS HASSAN)
 * @version (BITA/6/22/032/TZ)
 */
public class repitionfive
{
    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter the value: ");
        int value = input.nextInt();
        for (int a =1; a<=value; a++){
            for (int b =1; b<=value; b++){
                System.out.print(a * b + "\t");
            }
            System.out.println();
        }
    }
}
```

QUESTION SIX

```
import java.util.*;

/**
 * Write a description of class repitionsix here.
 *
 * @author (FAIZA KHAMIS HASSAN)
```

```

* @version (BITA/6/22/032/TZ)
*/
public class repititionsix
{
    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter the series of integer from -99 to end");
        int number = input.nextInt();
        int largest = number;
        int smallest = number;
        while(number != -99){
            if( number > largest){
                largest = number;
            }
            if(number < smallest){
                smallest = number;
            }
            number = input.nextInt();
        }
        System.out.println("The large number is: "+largest);
        System.out.println("The Small number is: "+smallest);
    }
}

```