Lab Assignment 09

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section: 17 CSE 110

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HomeWork 1

```
public class HomeWork1 {

    // HW1 A and HW1 C are using this same method.
    public static boolean isPrime(int num){
        int count = 0;
        for(int i=1; i<=num; i++){
            if(num%i == 0){
                count += 1;
            }
        }
        return (count == 2);
    }

    // HW1 B and HW1 C are using this method same.
    public static boolean isPerfect(int num){
        int sum = 0;
        for(int i=1; i<num; i++){
            if(num%i == 0){
                sum += i;
            }
        }
        return (sum == num);
    }

    // HW1 C only is using this method.
    public static int specialSum(int num){
        int sum = 0;
        for(int i=1; i<=num; i++){
            if(num%1 == 0 && isPrime(i)){
                sum += i;
            }else if(isPerfect(i)){
                sum += i;
            }
        }
        return sum;
```

HW1 → Continue.

```
public static void main(String [] args){
    // Call for HW1 A, or method A
    System.out.println(isPrime(5));
    // Call for HW1 B, or method B.
    System.out.println(isPerfect(6));
    // call for HW1 C, or method C.
    System.out.println(specialSum(8));
}
}
```

HomeWork 2.

```
public class HomeWork2{
    // HW2 A and HW2 C are using this same method.
    public static void showDots(int num){
        for(int i=1; i<=num; i++){
            System.out.print(". ");
        }
    }

    // HW2 B and HW2 C are using this same meth
    public static void showPalindrome(int num){
        for(int i=1; i<=num; i++){
            System.out.print(i);
        }for(int i=num-1; i>=1; i--){
            System.out.print(i);
        }
    }
}
```

HomeWork 2 Continue...

```
// HW2 C only is using this method.
public static void showDiamond(int num){
    for(int i = 1; i<= num; i++){
        showDots(num-i);
        show_palindrome(i);
        showDots(num-i);
        System.out.println();
    }
    for(int i = num-1; i>=1; i--){
        showDots(num-i);
        show_palindrome(i);
        showDots(num-i);
        System.out.println();
    }
}
public static void main(String[]args){
    // Call for method A → HW2 A.
    showDots(3);
    // Call for method B → HW2 B.
    show_palindrome(5);
    // Call for method C → HW2 C.
    showDiamond(3);
}
}
```

HomeWork 3

```
public class HomeWork3{
    // HW3 A and HW 3 B are using this same method.
    public static double calcTax(int age, int salary){
        double tax = 0;
        if(age>=18 && salary>10000 && salary<20000){
            tax = (7*salary)/100;
        }else if(age>=18 && salary>20000){
            tax = (14*salary)/100;
        }else{
            tax = 0;
        }
    }

    // HW 3 B only is using this method
    public static void calcYearlyTax(){
        int monthlyTax = 0; double totalTax=0;
        Scanner st = new Scanner(System.in);
        int age = st.nextInt();

        for(int i=1; i<=12; i++){
            monthlyTax = st.nextInt();
            if(age>=18 && monthlyTax>10000){
                System.out.println("Month"+i+ "tax:"
                +calcTax(age,monthlyTax));
                totalTax += calcTax(age, monthlyTax);
            }
        }
```

HomeWork 3 Continue.

```
        else {
            System.out.println("Month "+i+" tax: " +
                    calcTax(age, monthlyTax));
        }
    }
    System.out.println("Total yearly tax: "+totalTax);
}
public static void main(String[] args){
    // Call for method A → HW 3 A.
    System.out.println(calcTax(20, 18000));
    // Call for method B → HW 3 B.
    calcYearlyTax();
}
}
```

HomeWork 4

```
public clas HomeWork4{

    public static void oneToN(int num1, int num2){
        if(num1 <= num2){
            System.out.print(num1);
            oneToN(num1+1, num2);
        }
    }
    public static void main(String[] args){
        Scanner st = new Scanner(System.in);
        int N = st.nextInt();
        oneToN(1, N);
}
```