KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)

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WT LAB -11

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- Branch :CSE

```java
// 1. Illustrate the usage of abstract class with following Java classes -
// i)An abstract class ,,student" with data member roll no, reg no and a abstract
method course()

// ii)A subclass ,,kiitian" with course() method implementation

import java.util.Scanner;

abstract class student {
     int roll, reg;

    abstract void course(int a, int b);
}

class kiitian extends student {
    void course(int a, int b)
    {
        roll = a;
        reg = b;
        System.out.println("Roll No:- " + a + " Reg No:- " + b);
```

```
    }
}

class q1
{
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);
        int a, b;
        System.out.println("Enter the roll:-");
        a = s.nextInt();
        System.out.println("Enter the reg:-");
        b = s.nextInt();
        kiitian k = new kiitian();
        k.course(a, b);
    }
}
```

OUTPUT-1

```
PROBLEMS 2   OUTPUT   DEBUG CONSOLE   TERMINAL                    Code

Windows PowerShell
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PS D:\my codes\web tech lab\lab 11_abtract_interface> cd "d:\my codes\web tech lab\lab 11_abtract_interface\" ; if ($?) {
 javac q1.java } ; if ($?) { java q1 }
Enter the roll:-
2005025
Enter the reg:-
23121
Roll No:- 2005025 Reg No:- 23121
PS D:\my codes\web tech lab\lab 11_abtract_interface>
```

```
// 2. Define an interface Motor with a data member -capacity and two methods such as
run() and consume(). Define a Java class,Washing machine" which implements this
interface and write the code to check the value of the interface data member thru an
object of the class.

import java.util.Scanner;

interface motor {
    void run();

    int capacity = 10;
```

```java
    void consume();
}

class WM implements motor {

    Scanner input = new Scanner(System.in);
    int lt;

    public void consume() {
        System.out.println("how much water do u want to consume");
        lt = input.nextInt();
    }

    public void run() {
        if (lt > capacity) {
            System.out.println("Error,washing machine cannot run");
        } else {
            System.out.println("Okay,you can run wachine machine");
        }
    }
}

class q2 {
    public static void main(String[] args) {
        motor a = new WM();
        a.consume();
        a.run();
    }
}
```

OUTPUT-2

```
PROBLEMS 2  OUTPUT  DEBUG CONSOLE  TERMINAL                                  Code

Windows PowerShell
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PS D:\my codes\web tech lab\lab 11_abtract_interface> cd "d:\my codes\web tech lab\lab 11_abtract_interface\" ; if ($?) {
 javac q2.java } ; if ($?) { java q2 }
how much water do u want to consume
23
Okay,you can run wachine machine
PS D:\my codes\web tech lab\lab 11_abtract_interface> cd "d:\my codes\web tech lab\lab 11_abtract_interface\" ; if ($?) {
 javac q2.java } ; if ($?) { java q2 }
how much water do u want to consume
102
Error,washing machine cannot run
PS D:\my codes\web tech lab\lab 11_abtract_interface>
```

```java
// 3. Define an interface with three methods - earnings(). deductions() and bonus) and
define a Java class,Manager" which uses this interface without implementing bonus()
method. Also define another Java class ,Substaff" which extends from Manager" class and
implements bonus() method. Write the complete program to find out earnings, deduction
and bonus of a sbstaff with basic salary amount entered by the user as per the
following guidelines -

// earnings→basic +DA (80% of basic) + HRA (15% of basic)
// deduction PF -12% of basic
// bonus -50% of basic



import java.util.Scanner;

interface Payment {
    void deduction();

    void bonus();

    void earning();
}

class Manager implements Payment {
    Scanner in = new Scanner(System.in);
    double bs, da, hra, earning_val, deduction_val,
            bonus_val;

    Manager() {
        System.out.println("enter your basic salary");
        bs = in.nextInt();
    }

    public void earning() {
        earning_val = bs + 0.8 * bs + 0.15 * bs;
        System.out.println("Earning =" + earning_val);
    }

    public void deduction() {
        deduction_val = 0.12 * bs;
        System.out.println("Deduction =" +deduction_val);
    }

    public void bonus() {
    }
}

class Substaff extends Manager {
    public void bonus() {
        bonus_val = 0.12 * bs;
        System.out.println("Bonus =" + bonus_val);
    }
}
```

```java
class q3 {
    public static void main(String args[]) {
        Manager ob1 = new Manager();
        ob1.earning();
        ob1.deduction();
        Substaff ob2 = new Substaff();
        ob2.bonus();
    }
}
```

OUTPUT-3