



INSTITUTE OF SOFTWARE ENGINEERING

GRADUATE DIPLOMA IN SOFTWARE ENGINEERING

ASSIGNMENT NAME

Programming fundamentals

ASSIGNMENT NO

04

NUMBER OF QUESTIONS: 35

NUMBER OF COMPLETED QUESTIONS: 35

NUMBER OF REMAINING QUESTIONS: 00

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BATCH NO: 63

1. Input two numbers and check whether the first number is greater than the second number. If so add the two numbers otherwise display the two numbers.

```
import java.util.Scanner;

class Example01{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        int x,y;
        System.out.print("Input No:1 ");
        x=input.nextInt();
        System.out.print("Input No:2 ");
        y=input.nextInt();
        if(x>y){
            x=x+y;
            System.out.print("The Total is " + x);
        }else{
            System.out.println("No:1 is "+x+"\nNo:2 is "+y);
        }
    }
}
```

2. Write a java program to find the absolute number of a given integer number.

```
import java.util.Scanner;

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

```

int x;

x=input.nextInt();

if(x<0){

    x=x*-1;

    System.out.println(x);

}else{

    System.out.println(x);

}

}

```

3. Enter marks Obtained by a student for Chemistry, Physics and Combined maths. Calculate the total and average. If the average is greater than 75 then display “Pass” otherwise “Fail”. Write a java program to perform above task.

```

import java.util.Scanner;

class Example02{

    public static void main(String args[]){

        Scanner input=new Scanner(System.in);

        int x,y,z;

        System.out.print("Input Chemistry Marks : ");

        x=input.nextInt();

        System.out.print("Input Physics Marks : ");

        y=input.nextInt();

        System.out.print("Input Combined Maths Marks : ");

        z=input.nextInt();


        int total;

        double avarage;


        total = x+y+z;

        avarage =(double)total/3;

        if(avarage>75){

```

```

        System.out.print("Pass");
    }else{
        System.out.println("Fail");
    }

}

}

```

4. Enter unit price and amount bought from a product. Calculate the total. If the total is greater than Rs.1500/- display “You are entitled for the super draw. Otherwise display “try again” .

```

import java.util.Scanner;

class Example04{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        int x,y;
        System.out.print("Input Unit Prize : ");
        x=input.nextInt();
        System.out.print("Input Amount Bought: ");
        y=input.nextInt();

        int total;

        total = x*y;
        if(total>1500){
            System.out.print("You are entitled for the super draw");
        }else{
            System.out.println("Try Again");
        }
    }
}

```

```
    }  
}
```

5. Enter unit price and amount bought from a product. Calculate the total. If the total is more than Rs.500/- give 5% discount. Calculate the discount and new total and display those. Otherwise display “No discount given”.

```
import java.util.Scanner;  
  
class Example05{  
    public static void main(String args[]){  
        Scanner input=new Scanner(System.in);  
        int x,y;  
        System.out.print("Input Unit Prize : ");  
        x=input.nextInt();  
        System.out.print("Input Amount Bought: ");  
        y=input.nextInt();  
  
        int total;  
  
        total = x*y;  
        if(total>500){  
            int ntotal,discount;  
            discount=(total*5/100);  
            ntotal=total-discount;  
            System.out.print(" Total : " + total +"\n Discount : " +discount+"\n New Total : " +ntotal);  
        }else{  
            System.out.println(" Total : " + total +"\n Discount : No discount given"+" \n New Total : " +total);  
        }  
    }  
}
```

6. Write a Java program to get a Year from user input and find whether it is a leap year or not.

```
import java.util.Scanner;

class my_class{

    public static void main(String args[]){

        Scanner input=new Scanner(System.in);

        System.out.print("Input a year : ");

        int x=input.nextInt();

        int y=x%4;

        if (y==0){

            System.out.println(x +" is a leap year.");

        }else{

            System.out.println(x +" is not a leap year.");

        }

    }

}
```

7. Write a Java program to find & print the area of a circle when user input the radius.

```
import java.util.Scanner;

class assignment10{

    public static void main(String[] args) {

        Scanner input=new Scanner(System.in);

        System.out.print("Input the radius : ");

        double r=input.nextDouble();

        double a=(double)22/7*r*r;

        System.out.println("Area of the circle is : " + a);

    }

}
```

8. Customer can withdraw cash from an ATM.

Withdrawal is refused

if amount entered > current balance

if amount entered > daily limit

if current balance < 5000 rupees,

then a charge of 2% is made.

if current balance >= 5000, no charge is made

Write a java program which input a request for a sum of money decides if a withdrawal can be made or not and calculate any charges. Appropriate output messages should be included.

```
import java.util.Scanner;

class atm{

    public static void main(String args[]){

        Scanner input=new Scanner(System.in);

        int balance=4000/*Assign the customer's account balance here*/,limit=3000/*Assign the Daily limit
here*/;

        System.out.print("Input the value : ");

        int amount=input.nextInt();

        if (amount<=balance){

            if(limit>=amount){

                System.out.println("Withdrawal can be proceeded");

                if(balance >= 5000){

                    System.out.println("No extra charge made");

                    System.out.println("Your account has been debited by : " + amount);

                }else{

                    int charge=amount*2/100;

                    amount=amount+charge;

                    System.out.println("You will be charged : " + charge);

                    System.out.println("Your account has been debited by : " + amount);

                }

            }else{

            }
```

```

        System.out.println("You have exceeded your Daily limit");
    }
    }else{
        System.out.println("You have insufficient Balance");
    }
}

}

```

9. Write a java program to find the maximum number of three integer numbers input by the keyboard and print results as follows; "Maximum number is : 45"

```

import java.util.Scanner;

class my_class{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        int x,y,z;
        System.out.print("Input 1st Num : ");
        x=input.nextInt();
        System.out.print("Input 2nd Num : ");
        y=input.nextInt();
        System.out.print("Input 3rd Num : ");
        z=input.nextInt();
        if (x>y & x>z){
            System.out.println("Max value is "+x);
        }else if(y>z){
            System.out.println("Max value is "+y);
        }else{
            System.out.println("Max value is "+z);
        }
    }
}

```


10. Write a Java program to input an integer number from the keyboard and print whether the number is odd or even.

```
import java.util.Scanner;
```

```
class assignment10{  
    public static void main(String args[]){  
        Scanner input=new Scanner(System.in);  
        System.out.print("Input a integer : ");  
        int x=input.nextInt();  
        int y=x%2;  
        switch(y){  
            case 0: System.out.println("The "+x+" is an even number");break;  
            default: System.out.println("The "+x+" is an odd number");  
        }  
    }  
}
```

11. Which of the following lines can be legally inserted at the line 10?

```
class Example{  
    public static void main(String[] args) {  
        int x = 10;  
        //Insert code here//Line 10  
    }  
}
```

A. if(x){} B. if(x=10){} C. if(x==10){} D. if(x=100!=10){} E. if((x=100)!=10){} F. if((x=100)>0==true){}

12. Which of the following lines can be legally inserted at the line 10?

```
class Example{  
    public static void main(String[] args) {  
        int x = 10;  
        boolean b=true;  
        //Insert code here//Line 10  
    }  
}
```

A. `if(b){}`

B. `if(b=false){}`

C. `if(b==false){}`

D. `if(b=false==false){}`

E. `if((b=false)==false){}`

F. `if(b=(false==true)){}`

13. Write the outputs for the following code lines.

```
int x = 10;
```

A. `System.out.println(x=9); //9`

B. `System.out.println(x==9); //true`

C. `System.out.println(x=9!=10); //error`

D. `System.out.println((x=9)==10); //false`

E. `System.out.println((x=9)<=10); //true`

14. Write the outputs for the following code lines.

```
boolean b=true;
```

A. `System.out.println(b); //true`

B. `System.out.println(b=true); //true`

C. `System.out.println(b==true); //true`

D. `System.out.println(b!=true); //false`

E. `System.out.println(b=true==true); //true`

F. `System.out.println((b=true)==false); //false`

G. `System.out.println(b=(true!=false)); //true`

15. Write the outputs for the following code lines.

```
int x=99;
```

```
if(x++==x){ System.out.println("x++==x : "+x); // x++==x : 100
```

```
}
```

```
x=99;
```

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

```
}
```

```
x=99;
```

```

if(x==x++){ System.out.println("x==x++ : "+x); // x==x++ : 100
}

x=99;

if(x==++x){ System.out.println("x==++x : "+x);
}

x=99;

if(++x==++x){ System.out.println(++x==++x : "+x);
}

x=99; if(x++==x++){ System.out.println("x++==x++ : "+x);
}

x=99; if(++x==x++){ System.out.println(++x==x++ : "+x); //++x==x++ : 101
} x=99;

if(x++==++x){ System.out.println("x++==++x : "+x);
}

```

16. Write the outputs for the following code lines.

```

int x=99;

if(x++==x){
System.out.println("x++==x : "+x);
}

if(++x==x){ System.out.println(++x==x : "+x); //++x == x : 101
}

if(x==x++){ System.out.println("x==x++ : "+x); // x==x++ : 102
}

if(x==++x){ System.out.println("x==++x : "+x);
}

if(++x==++x){ System.out.println(++x==++x : "+x);
}

if(x++==x++){ System.out.println("x++==x++ : "+x);
}

if(++x==x++){ System.out.println(++x==x++ : "+x); //++x==x++ : 109
}

```

17. Write the outputs for the following code lines.

```
int x=99; int y=99;

if(x++==y){
    System.out.println("x++==y : "+x+" : "+y); //x++==y :100:99
}

if(++x==y){
    System.out.println("++x==y : "+x+" : "+y);
}

if(x==y++){
    System.out.println("x==y++ : "+x+" : "+y);
} if(x==++y){
    System.out.println("x==++y : "+x+" : "+y); // x==++y : 101:101
}

if(++x==++y){
    System.out.println("++x==++y : "+x+" : "+y); //++x==++y : 102 : 102
}

if(x+++==y++){
    System.out.println("x+++==y++ : "+x+" : "+y); // x+++==y++ :103:103
} if(++x==y++){
    System.out.println("++x==y++ : "+x+" : "+y);
} if(x++++==y){
    System.out.println("x++++==y : "+x+" : "+y);
}

}
```

18. Given code fragment:

```
int x=9;

/*Insert code here */ { //12

System.out.println("Success");

}
```

Which of the followings can be inserted at the line 12 to get the output "Success"

- A. if(x>=10) B. if(x++>=10) C. if(++x>=10) D. if(++x>=x++)

E. if(++x>x++)

F. if(x++>=x++)

G. if(++x<=x++)

H. if(x<=x++)

19. Given code fragment:

```
int x=100,y=99;
```

```
/* Insert Code here*/ { //Line 12
```

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

```
}else{
```

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

```
}
```

Which of the following lines can be inserted at the line 12 to get the output as “Success”

A. if(x==y)

B. if(x++==++y)

C. if(x++==y++)

D. if(++x==y++)

20. What are the outputs of following commands?

```
byte b = 10;
```

```
short s = 100;
```

```
int x = 125;
```

```
long l = 15000;
```

```
float f = 1.5f;
```

```
double d = 21.231;
```

```
char c = 'c';
```

```
boolean bool = 10>9;
```

```
System.out.println(b+s+x+f+d+c+bool); //Line 1 // 2351.521.231true
```

```
System.out.println(""+b+s+x+f+d+c+bool); //Line 2 // 101001251.521.231c
```

```
System.out.println(b+s+x+f+d+c+""+bool); //Line 3 // 356.731true
```

```
System.out.println(b+s+x+f+d+c+bool+""); //Line 4 // error
```

```
System.out.println(bool+b+f+d+c+""+x+l); //Line 5//error
```

21. Assume that i = 1, j = 2, k = 3 and m = 2.

What does each of the following statements print?

```
System.out.println( i ==1); //Line 1 //true
```

```

System.out.println( j ==3); //Line 2 //false
System.out.println( ( i >=1) && ( j <=99) & ( k < m ) ); //Line 4 //false
System.out.println( ( j >= i ) || ( k == m ) ); //Line 5 //true
System.out.println( ( k + m < j ) || (3- j>= k)); //Line 6 //false
System.out.println( !( k > m ) ); //Line 7 //false

```

22. What are the outputs of following commands?

```

int x=20,y=60;

boolean bool;

System.out.println(x=10); //Line 1 //10
System.out.println(bool=true); //Line 2 //true
System.out.println(x=10>0); //Line 3 //error
System.out.println((x=10)>0); //Line 4 //true
System.out.println(bool=(x=10)>0); //Line 5 //true
System.out.println(bool=x+y>100); //Line 6 //false

```

23. Given:

```

class Example{

public static void main(String args[]){

//line 5

switch(x){

default : System.out.print("4 ");

case 1 : System.out.print("1 ");

case 2 : System.out.print("2 ");

case 3 : System.out.print("3 ");

}

}

}

```

What will be the outputs when you insert the following codes at the line 5?

- A. int x=1; 1 2 3
- B. int x=2; 2 3
- C. int x=3; 3

D. int x=4; 4 1 2 3

E. int x=0; 4 1 2 3

F. int x=5 ;4 1 2 3

24. Which of the following lines are legal?

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

```
class Example{
```

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

```
int x=100; System.out.println(x); //Line 1 //legal
```

```
    { int y=200;
```

```
        { int z=300;
```

```
            System.out.println(x); //Line 2 //legal
```

```
            System.out.println(y); //Line 3 //legal
```

```
            System.out.println(z); //Line 4 //legal
```

```
        }
```

```
    System.out.println(x); //Line 5 //legal
```

```
    System.out.println(y); //Line 6 //legal
```

```
    System.out.println(z); //Line 7 //illegal
```

```
}
```

```
System.out.println(x); //Line 8 //legal
```

```
System.out.println(y); //Line 9 //illegal
```

```
System.out.println(z); //Line 10 //illegal
```

```
}
```

```
}
```

A. Line 1

B. Line 2

C. Line 3

D. Line 4

E. Line 5

F. Line 6

G. Line 7

H. Line 8

I. Line 9

K. Line 10

25. Given:

```
class Example{
```

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

```
//Line 5
```

```
switch(x){
```

```

default : System.out.print("4 ");break;
case 2 : System.out.print("2 ");
case 3 : System.out.print("3 ");
case 1 : System.out.print("1 ");break;
}
}
}

```

What will be the outputs when you insert the following codes at the line 5?

- A. int x=1; **1**
- B. int x=2; **2 3 1**
- C. int x=3; **3 1**
- D. int x=4; **4**
- E. int x=0; **4**
- F. int x=5; **4**

26. Which of the following code fragments can be inserted at line 10 to legal line 12

```
final int x=100;
```

```
final int y;
```

```
y=100;
```

```
int z=100;
```

```
int a;
```

```
//Insert code here //Line 10
```

```
System.out.println(a); //Line 12
```

- | | | | |
|------------------------------|--------------------------|------------------|-------------------|
| A. if(x>0){a=0;} | B. a=0; C. if(y>0){a=0;} | D. if(z>0){a=0;} | E. if(true){a=0;} |
| G. if(y>0){a=0;}else {a=-1;} | H. a=z>0?0:-1; | | |

27. Given:

```
class Example {
```

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

```
int a = 2;
```

```
char b,c,d;
```

```
b = (a < 2) ? 'f' : 'g'; // 1
```



```

if (a < 2) c = 'h'; else c = 'i'; // 2
if (a < 2) d = 'j'; // 3
if (a > 2) d = 'k'; // 4
if (a == 2) d = 'l'; // 5
System.out.print(b + "," + c + "," + d); // 6
}
} What is the result of attempting to compile and run the program?

```

- A. Prints: g, i, l
- B. Compiler Error: variable b might not have been initialized.
- C. Compiler Error: variable c might not have been initialized.
- D. Compiler Error: variable d might not have been initialized.**
- E. Runtime Exception
- F. None of the above.

28. Given Code:

```

class Example{
public static void main(String args[]){
int a=-5; int b=-2;
a%=b; //a=-1
a/=b; //a=0
b=a>0?a; //b=0
System.out.println(a+" "+b);
}
}

```

} Select one option? A. Prints 1 0 B. Prints -1 -1 C. Prints -2 -2 **D. Prints 0 0**

29. Given:

```

class Example{
public static void main(String args[]){
int a=1;
final int b=2;
final int c;
}
}

```

```

c=3;

final char d='A';

final char e='B';

int x=1;

switch(x){

case 65: System.out.print("65");

//Insert code//line 10

}

}

}

```

Which of the following codes can be inserted legally at line 10

A. case a:

B. case b:

C. case c:

D. case e:

E. case f:

F. case 'A':

G. case 1.0:

H. case (char)66:

30. Given:

```

//Insert code here //line 4

switch(x){

case 'A' : System.out.println("65 ");break;

case 'B' : System.out.println("66 ");break;

case 'C' : System.out.println("67 ");break;

default : System.out.println("wrong ");

}

```

Which of the following codes can be inserted legally at line 4.

A. char x='A'; B. int x=65; C. int x=65536; D. byte x=65; E. short x=66 ;
F. boolean x =true; G. String x="A"; H. double x=65.0;

31. Given Code fragment:

```
Scanner input=new Scanner(System.in);  
System.out.print("Input student average : ");  
double avg=input.nextDouble();  
if(avg>=50){ System.out.println("Pass");  
}else{  
    System.out.println("Fail");  
}  
System.out.println("Thanking you..");
```

What are outputs for the following inputs?

A. 99	- Pass Thanking You..
B. 75	- Pass Thanking You..
C. 49.99	- Fail Thanking You..
D. 50.01	- Pass Thanking You..
E. 50.0	- Pass Thanking You..
F. 49.0	- Fail Thanking You..
G. 25	- Fail Thanking You..

32. What are the outputs of following commands?

```
System.out.println(12+8/5%4*(5-4/5)+4*5);           //Line 1 //37
System.out.println(4%5*3-4/7+4%2-5/(5*4%5));         //Line 2 //error
System.out.println(5-8%4*5(5/8*(3%4)*4)+8/4+1);      //Line 3 //error
System.out.println(1.5%2.1-5.4*1.1/(5.4%5));         //Line 4 //-13.349999999999999
System.out.println((5+4)%4+(5/8.0)+4);               //Line 5 //5.625
System.out.println(5-4*6(5%4-3)*5+6/(1.0/2.0)-5*4);  //Line 6 //error
System.out.println(7+3-4*4%6+4*2.5-3%2);             //Line 7 //15.0
System.out.println(5-7*(9%4)+5+8/7+2);              //Line 8 //6
System.out.println((2-5%5)-10.8%5.1*5*4);           //Line 9 //-10.0000000000000028
System.out.println(5+5-4/(3%1+5+(7-8)*4+5));         //Line 10 //10
System.out.println(9%4*5+6%10-5*4);                 //Line 12 //-9
System.out.println(9%1+5-(5+5%2)-5/8+5);            //Line 13 //4
System.out.print(((7 * 2) % 5)+" ");                //Line 14 //4
System.out.print(" " + (7 % 5));                     //Line 15 //2
```

33. What are the outputs of following commands?

```
int a=1,b=2,c=3,d=4;
int x;
x=a++ + b++ + c++ + d++;
System.out.println(a+" "+b+" "+c+" "+d+" "+x); //Line 1 // 2 3 4 5 10
x+=a+=b+=c+=d; //Line 2
System.out.println(a+" "+b+" "+c+" "+d+" "+x); //Line 3 // 14 12 9 5 24
x=a=b=c=d; //Line 4
System.out.println(a+" "+b+" "+c+" "+d+" "+x); //Line 5 // 5 5 5 5 5
```

34. What are the outputs of following commands?

```
boolean b = false;
```

```
System.out.println(10>4 && true !=b==(10+3/2==8)==true); //Line 1 //false
```

```
System.out.println(b=false==true || true!=(b=false)); //Line 2 //true
```

```
System.out.println((b=false)=true?4:5==5&true==3*2<=29); //Line 3 //error
```

```
System.out.print (('a' == 'a')+" "); //Line 4 //true
```

```
System.out.print(('a' == 'b')+" "); //Line 5 //false
```

```
System.out.print((5 != 6)+" "); //Line 6 //true
```

```
System.out.print((5.0 == 5L)+" "); //Line 7 //true
```

```
System.out.println((true == false)); //Line 8//false
```

35. What are the outputs of following commands?

```
boolean b1, b2, b3;
```

```
b1 = true != false; //Line 1 //true
```

```
b2 = 5%3 == 2 ^ true == !false ; //Line 2 //false
```

```
System.out.println((b3 =true) & b2 || b1 == false); //Line 3 //false
```

```
System.out.println(b3 = b2 == b1); //Line 4 //false
```

```
b3= true; //Line 5 //true
```

```
System.out.println(b3^b2&b1|false != (b3 = false)); //Line 6 //true
```

```
System.out.println(!b3==b2 && b2 != b1 || !b1 != b2); //Line 7 //true
```