

# Assignment - 1 OOP

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1 Explain why java is interoperability

→ JUM is main component of java architecture

Because of JUM we don't need to compile java program again and again for different platforms. Java applications are write i.e. programmers can develop java code on a system can can export it to run on any other java enabled system without adjustment.

2 Is it possible to run the java program without main method,  
if yes write the code

→ yes, using static block we can run java program without main method but only till JDK 1.7

Static {  
    // body  
}

3 Write a program in java to find the result of following expression by getting inputs of at runtime

( $a=5$  and  $b=10$ )

i)  $(a \ll 2) + (b \ll 1)$

$$\begin{aligned} a=5, b=10 \quad & \therefore (5 \times 2^2) + (10 \times 2^1) \\ & = 20 + 20 \\ & = 40 \end{aligned}$$

ii)  $(a > 11 \& b > 0)$   
 $5 > 11 \quad (10 > 0)$

$$= 1$$

iii)  $(a+b * 100) / 10$   
 $= (5 + 10 * 100) / 10$   
 $= 1005 / 10$   
 $= 100$

iv)  $a \& b$   
 $= 5 \& 10$   
 $= 0$

4 what is an object and how do you allocate memory to it?

→ object is instance of class which is used to access data members and functions of class  
`new()` is used to allocate memory

5 how java enabled high performance

→ java uses JIT (Just In Time)  
Compiles to enable high performance

JIT is used to convert the  
instruction into bytecode

6 Define variables & its type with an  
example program

→ variable is name of reserved area  
allocated in memory

4 types of variables

1) local

2) global

3) Instance ..

4) static

e.g class var

int a = 10 // instance

global int b = 20; // global

public static void main (String args[])

int c = 30; // local

23  
24

7 Explain all words in the statement

public static void main (String args)

→ public access specifier

static :- keyword

void - return type

main - method

String : String class

args :- arguments

String args[] : array that stores String

8 Debug

import java.util.\*;

Class Debug

{

    static public void main (String[] args)

{

        System.out.println ("Hello World");

}

9 import java.util.\*;

abstract class shape

g

float a;

abstract float area();

g

Class Triangle extends shape

g

float breath=0; height>0;

void get (float b, float h)

g

breath=b;

height=h;

float area();

g

a=0.5 \* height \* breath;

return a;

g

Class Rectangle extends shape

g

float length=0; breath=0;

void get (float l, float b)

g

length=l;

breath=b;

float area();

g

$a = \text{length} * \text{breadth}$   
~~return a;~~

3  
 3

Class circle extends shape

5

float  $\pi \text{rad} = 0, \text{PI} > 3.14f;$

void  $(C \text{ float } \delta)$

5

$\pi d = \delta;$

3

float area (C)

5

$a = \text{PI} * \pi d * \pi d;$

~~return a;~~

3

3

Class Nbr

5

public static void main (String [] args)

5

Scanner s = new Scanner (System.in);

Triangle t = new Triangle();

Rectangle r = new Rectangle();

Circle c = new Circle();

System.out.println ("Triangle");

float t1 = s.nextFloat();

float t2 = s.nextFloat();

f. ~~get~~ (fb, th);

float a1 = f.nextDouble();

System.out.println("Area = " + a1);

System.out.println("Rectangle");

float a2 = s.nextDouble();

float b2 = a.nextDouble();

~~float~~

s. get (a1, a2);

float a2 = s.nextDouble();

System.out.println("Area = " + a2);

System.out.println("Circle");

float r2 = s.nextDouble();

u.s.c(r2);

float a3 = c1.nextDouble();

System.out.println("Area = " + a3);

3

O/P

Triangle

4 5

Area = 10.0

Rectangle

5 6

Area = 30.0

Circle

5

Area = 78.54

10 why java does not support pointers?

- A Java does not support pointers because
- pointers are confusing, difficult to understand and causes bugs in code
  - It provide direct access to memory address
  - They are used to allocate & deallocate memory java provides garbage collection for that.