

Q1 Is it compulsory for an abstract class to have at least one abstract method? Can an abstract method be declared private? Justify both answers.

No, it is not compulsory for an abstract class to have any abstract method, but the vice versa is true i.e. any abstract method declared in a class or that do not provide an implementation for any ^{abstract} method declared in its superclass must have to be declared as an abstract class.

No, an abstract method cannot be declared as private, because if we cannot access it outside the current scope, nor from the child class of it, we need to override it from subclass and use which is not possible in private declaration.

Q2 What is the HTML syntax for inserting a © symbol in a browser page?

<html>

<body>

<hr> The copyright symbol : © </hr>

</body>

</html>

Q3

Write down the HTML syntax for displaying
ordered + unordered list on a webpage

Syntax for ordered list is:—

```
<ol type="a" start="4">
  <li> HITURAS </li>
  <li> CSE </li>
  <li> Assig 1 </li>
  :
</ol>
```

Syntax for unordered list is.

```
<ul type="disc">
  <li> 1st </li>
  <li> 2nd </li>
  <li> 3rd </li>
  :
</ul>
```

Q4

create a HTML form which have

textbox → Name

textarea → Address

password field → password

radio button → Sex

selection option → Date

checkbox → Hobies

Submit button → "

Ans 4

< html >

< head >

< ^{title} center > & Form < /title >

< /head >

< body >

< form >

Enter Name : < input type = "text" name = "username" / >

Enter Address : < text area rows = "2" . cols = "20" >

< /text area >

< br >

Enter password : < ^{input} type = "password" id = "pwd" / >
< br >

Sex : < input type = "radio" name = "male" . / >

Male

< input type = "radio" name = "female" / >

Female .

< br >

Enter DOB : < input type = "date" name = "dob" >

Hobbies : < input type = "checkbox" name = "coding" / >

coding < br >

< input type = "checkbox" name = "gaming" / >

gaming < br >

Enter store : < input type = "text" >

< button > Submit button < /button >

< /form >

< /body >

< /html >

Q9 Write a short notes on

(i) This & super keywords

"This" keyword is used to refer current class instance variable. If there is ambiguity between the instance variable and class members variables, this keywords is used.

Also This() is use to invoke the constructor of current class.

(ii) Super :-

This Super keyword is used in 3 different ways as a reference variable, to refer the parent class method, parent class variable.

It is also use to refer to the parent class constructor.

- (i) super.variable name; // use to access immediate class variable when inherited
- (ii) super.method(); // access parent class method
- (iii) super(); // parent class constructor

(b) JVM, JDK and JRE

(i) JVM :- Java virtual machine is an abstract machine. It doesn't physically exist. It is a specification that provides a runtime environment in which Java byte code can be executed. It can also run those program

which are written in other languages and compiled to Java byte code.

(ii) **JDK**:- Java development kit is a software development environment which is used to develop Java application. It consist of JRE + development tools.

(iii) **JRE**:- Java runtime environment is a set of software use for developing Java applications. It provides runtime ~~envt~~ environment. It is the implementation of JVM.

③ HTML style sheet

These are generally the part of CSS i.e used for designing, decorating our HTML web pages, this way we can see attractive web pages.

These are mainly of 3 types:-

(i) **External SS**:- This include style sheet in a separate CSS file + has to be link in the HTML file.

(ii) **Internal SS**:- These includes set of rules in the header section of HTML document using `<style tag>`

(iii) **Inline style sheet**:- where we use styling in the tag itself in the HTML file it behaves as inline style sheet.

(d) HTML frames :-

HTML frames are used to divide the browser page window into multiple sections where each section loads a separate HTML document.

A collection of frames in a browser window is known as frame set. The window can be divided in both row major & column major depending on the requirement of user.

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• What is inner class ? Explain its characteristics

If we use a class inside another class it is referred as inner class. We use inner class to logically group classes & interfaces in one place to be more readable & maintainable.

Characteristics :-

- (i) It can access the members of outer class including private data members & methods.
- (ii) Instance of inner class can be created only within the scope of outer class.
- (iii) Inner class can access the members of its enclosing class, but the reverse is not true.
- (iv) Members of inner class is accessed only ⁱⁿ its own scope.

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class selection_statement

public static void main (String arg[])

int var1 = 5;

int var2 = 6;

if ((var2 = 1) == var1)

System.out.print (var2)

else

print 1+var2);

}

here the output will be 2

Because in if loop var2 has been assigned the value 1 & is then compared to var1 which makes the condition true & hence the 1st statement i.e. print var2 is executed.

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public static void main ()

int arr[][] = new int [3] []

arr[0] = new int [1];

arr[1] = new int [2];

arr[2] = new int [3];

int sum = 0

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

{ for (j = 0; j < arr[i].length, j++)

arr[i][j] = j+1;

sum = sum + arr[i][j];

System.out.println (sum)

1	2	3
1	2	3
1	2	3

Ans

	0	1	2
0	1		
1	1	2	
2	1	2	3

~~So~~ The output will be 10

Since in the above code the 1st 2 for loop is used to assign the value in the jagged array. and the another 2 loop is used to find the sum of the remaining of elements in the array

$$\begin{aligned}
 \therefore \text{sum} &= (1) + (1+2) + (1+2+3) \\
 &= 1 + 3 + 6 \\
 &= 10
 \end{aligned}$$

Ans



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WT ASSIG 1

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- Roll no. : 2005025
- Branch : CSE

```
// 5. Write a program that displays the results of a series of 10 coin
tosses. Use
// Math.random() function to generate a number between 0 and 1. After each
coin toss,
// display whether the toss represents 'heads' or 'tails'. If the result is
0.5 or less, the
// result represents 'heads'; otherwise, it represents 'tails'.

public class Main {
    public static void main(String[] args) {
        int i;
        for (i = 0; i < 10; i++) {
            if (Math.random() < 0.5) {
                System.out.println("Heads");
            } else {
                System.out.println("Tails");
            }
        }
    }
}
```



```
}  
}  
}  
}
```

OUTPUT-5

```
Windows PowerShell  
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows  
  
PS D:\my codes\web tech lab\assignment> cd "d:\my codes\web tech lab\assignment\" ; if ($?) { javac Main.java } ; if ($?) { java Main }  
Heads  
Heads  
Tails  
Tails  
Heads  
Tails  
Tails  
Heads  
Tails  
Heads  
PS D:\my codes\web tech lab\assignment>
```

```
// // 6. Write a program in Java to implement the concept of dynamic method  
dispatch using  
// method overriding.  
import java.util.Scanner;  
  
class trees {  
  
    int no;  
  
    void tree() {  
        System.out.println("this is tree class");  
    }  
}  
  
class mango extends trees {  
  
    int no;  
  
    void tree() {  
        System.out.println("this is mango class");  
    }  
}
```



```

}

class apple extends mango {

    int no;

    void tree() {
        System.out.println("this is appple class");
    }
}

public class q2

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

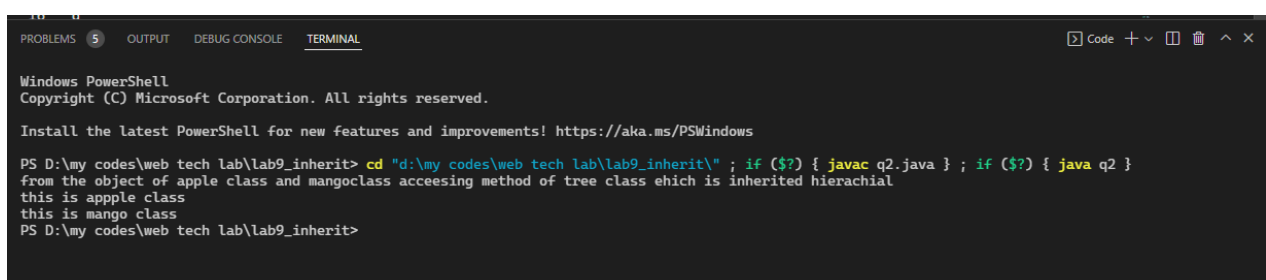
        System.out.println("from the object of apple class and mangoclass
acceesing method of tree class ehich is inherited hierachial");
        mango m = new apple();
        m.tree();

        trees a= new mango();
        a.tree();

    }
}

```

OUTPUT-6



```

Windows PowerShell
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PS D:\my codes\web tech lab\lab9_inherit> cd "d:\my codes\web tech lab\lab9_inherit\" ; if ($?) { javac q2.java } ; if ($?) { java q2 }
from the object of apple class and mangoclass acceesing method of tree class ehich is inherited hierachial
this is appple class
this is mango class
PS D:\my codes\web tech lab\lab9_inherit>

```



```
// 7. Write a program in Java to implement constructor overloading.
class shape {

    void area() {
        System.out.println("the is use to calculate area method");
    }

    void showarea() {
        System.out.println("this the use to siplay area");
    }
}

class circle extends shape {

    int r = 20;
    float area;

    void area(int x) {

        area = (float) 3.14 * x * x;
    }

    void showarea() {

        System.out.println("area of circle is " + area);
    }
}

class rectangle extends shape {

    int l = 5, b = 3;

    float area;

    void area(int x, int y) {

        area = (float) l * b;
    }

    void showarea() {

        System.out.println("area of rectangle is " + area);
    }
}

public class q3_area

{

    public static void main(String[] args) {

        circle m = new circle();
    }
}
```



```

        m.area(20);
        m.showarea();

        rectangle a = new rectangle();
        a.area(20, 40);
        a.showarea();

    }
}

```

OUTPUT-7

```

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PS D:\my codes\web tech lab\lab9_inherit> cd "d:\my codes\web tech lab\lab9_inherit\" ; if ($?) { javac q3_area.java } ; if ($?) { java q3_area }
area of circle is 1256.0
area of rectangle is 15.0
PS D:\my codes\web tech lab\lab9_inherit>

```

```

// 8. Write a program that prompts the user to input two numbers, first and
diff. The
// program then creates a one dimensional array of 10 elements and
initializes them with
// an arithmetic sequence. The first number of the sequence is the first
value and the
// next number is generated by adding the diff to the number preceding it.
This formula
// is repeated for the rest of the sequence. E.g. if first =11 and diff = 4,
then the
// arithmetic sequence will be 11, 15, 19, 23, 27, 31 ... and so on.

import java.util.*;

public class Q8other {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter first- ");
        int first = sc.nextInt();
    }
}

```

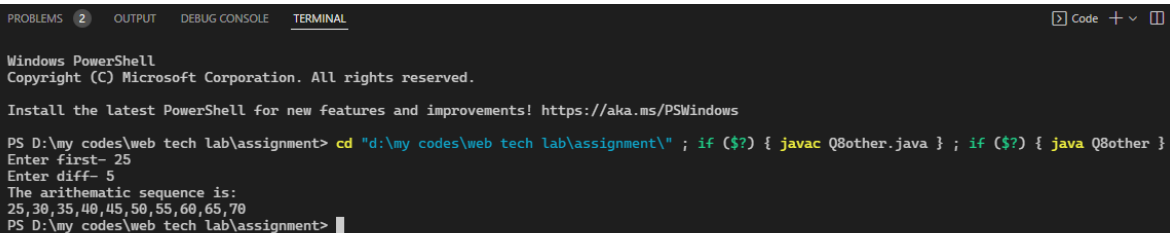


```

        System.out.print("Enter diff- ");
        int diff = sc.nextInt();
        int array[] = new int[10];
        array[0] = first;
        for (int i = 1; i < 10; i++) {
            array[i] = array[i - 1] +
                diff;
        }
        System.out.println("The arithmetic sequence is:");
        for (int i = 0; i < 10; i++) {
            System.out.print(array[i]);
            if (i != 9) {
                System.out.print(", ");
            }
        }
    }
}

```

OUTPUT-8



```

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PS D:\my codes\web tech lab\assignment> cd "d:\my codes\web tech lab\assignment\" ; if ($?) { javac Q8other.java } ; if ($?) { java Q8other }
Enter first- 25
Enter diff- 5
The arithmetic sequence is:
25,30,35,40,45,50,55,60,65,70
PS D:\my codes\web tech lab\assignment>

```

// 10. Implement the concept of abstract class for the following:

```

import java.util.*;

abstract class Q10 {
    abstract int moneyconversion();

    static class rupeetodollar extends Q10 {
        int moneyconversion() {
            return 78;
        }
    }
}

```



```

static class rupeetoeuro extends Q10 {
    int moneyconversion() {
        return 85;
    }
}

public static void main(String args[]) {
    int x;
    System.out.println("Enter your amount in rupees:");
    Scanner sc = new Scanner(System.in);
    x = sc.nextInt();
    Q10 obj;
    obj = new rupeetodollar();
    System.out.println("Your amount in dollars is =" + (x /
obj.moneyconversion()));
    obj = new rupeetoeuro();
    System.out.println("Your amount in euro is =" + (x /
obj.moneyconversion()));
}
}

```

OUTPUT-10

```

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL
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PS D:\my codes\web tech lab\assignment> cd "d:\my codes\web tech lab\assignment\" ; if ($?) { javac Q10.java } ; if ($?) { java Q10 }
Enter your amount in rupees:
321
Your amount in dollars is =4
Your amount in euro is =3
PS D:\my codes\web tech lab\assignment>

```