

Assignment No. 1

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Que-1 Difference between object and class.

Ans -

Object

Class

- | | |
|--|---|
| i) Data and functions are binded together to form an object. | i) A collection of similar type of objects is called class. |
| ii) Objects are real-world entities. | ii) Class is just a logical entity. |
| iii) Object occupy some space in memory. | iii) Class doesn't consume space in memory. |
| iv) Object is an instance of a class. | iv) Class is a set of object. |
| v) Ex- Table, chair, etc. | v) Ex- Furniture is an example of class which has objects like table, chair, etc. |

Que-2 Difference between procedural programming approach and object oriented programming approach.

Ans -

OOP

POP

- | | |
|---------------------------------------|---|
| i) It is Object Oriented Programming. | i) It is Procedural Oriented Programming. |
|---------------------------------------|---|

- ii) OOP takes a bottom-up approach in designing a program.
- iii) Program is divided into objects depending on the problem.
- iv) Each object controls its own data.
- v) Focuses on security of the data irrespective of the algorithm.
- vi) The main priority is data rather than functions in a program.
- vii) Functions of the objects are linked via message.
- viii) Data hiding is possible in OOP.
- ix) Inheritance is allowed in OOP.
- x) Operator overloading is allowed.
- xi) E.g. C++, Java.
- ii) POP follows a top-down approach.
- iii) Program is divided into small chunks based on the functions.
- iv) Each function contains different data.
- v) Follows a systematic approach to solve the problem.
- vi) Functions are more important than data in a program.
- vii) Different parts of a program are interconnected via parameter passing.
- viii) No easy way for data hiding.
- ix) No such concept of inheritance in POP.
- x) Operator overloading is not allowed.
- xi) E.g. Pascal and Fortran.

Assignment No. 2

Que-1 What are different types of array? Explain with example.

Ans-

An array is a group of contiguous or homogeneous related data items that share a common name for instance, we can define an array name salary to represent a set of salaries of a group of salaries.
Salary [10].

⇒ There are two types of array -

- i) One-dimensional Array
- ii) Two-dimensional Array

i) One-dimensional Array :

A list of items can be given one variable name using only one subscript and such a variable is called a single subscripted variable or a one-dimensional array.

Example -

```
int number[] = new int [5];
```

number [0]

number [1]

	number [2]
	number [3]
	number [4]

Set of five numbers (35, 40, 20, 57, 19) by an array variable number, then we may create the variable number as follows:

```
int number[] = new int [5]
number[0] = 35
number[1] = 40
number[2] = 20
number[3] = 57
number[4] = 19
```

This would cause the array number to store the values as follows -

number [0]	35
number [1]	40
number [2]	20
number [3]	57
number [4]	19

ii) Two-dimensional Array -

It is defined as an array of arrays. Java allows us to define such table of items by using two-dimensional arrays. We represent

a particular value in a matrix by using two subscripts such as V_{ij} . V denotes the entire matrix and V_{ij} refers to volume V_{ij} in the i th row and j th column.

for example !

```
class aa
{
    public static void main (String args [])
    {
        int arr [][] = new int [3][3];
        arr [0][0] = 1; arr [0][1] = 2; arr [0][2] = 3;
        arr [1][0] = 4; arr [1][1] = 5; arr [1][2] = 6;
        arr [2][0] = 7; arr [2][1] = 8; arr [2][2] = 9;

        for (int i = 0; i <= 2; i++)
        {
            for (int j = 0; j <= 2; j++)
            {
                System.out.println (arr [i][j]);
            }
            System.out.print ("\n");
        }
    }
}
```

Output - In the place of this form in memory.

00	01	02
10	11	12
20	21	22

Ques-2 Difference between for loop, while loop and do while loop.

Ans -

for	while	do while
<ul style="list-style-type: none"> In for loop, condition is given at beginning of loop. <pre>for (i=1; i<=10; i++) { s = s + i; }</pre>	<ul style="list-style-type: none"> In while loop, also condition is given at beginning of loop. <pre>i=1 while (i<=10) { s = s + i; }</pre>	<ul style="list-style-type: none"> In do while, loop condition is given at end of loop. <pre>i=1 do { s = s + i; } while (i<=10);</pre>
<ul style="list-style-type: none"> Value of variable is assigned on the loop. The statement written in loop block will not be executed if condition is false. 	<ul style="list-style-type: none"> Value to variable assigned before the loop. The statement written in loop block will not execute if condition is false. 	<ul style="list-style-type: none"> Value of variables is assigned before the loop. The loop block will be executed atleast once, either condition is true or false.