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Assignment - 5.

Q-1 How to create an object in Java ?

In Java object can be created by using a keyword 'New' as following -

```
Classname objname = new classname ();
```

Q-2 What is the use of new keyword in object creation ?

The purpose of new keyword in Java are following -

(a) The 'new' keyword is used to create an instance (object) of a class.

b. It is also use to create array of particular type.

C. the new keyword is used for DMA (Dynamic memory allocation) and it allocate memory for an object at runtime in Heap area of jvm.

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d. It is also use for creating a Inner class { class inside a class }-

example-

```
class outerClass {

    class InnerClass {

        // Inner class
        int x;
    }
}

outerClass outer = new outerClass();

outerClass.InnerClass inner =

    outer.new InnerClass();
```

Q-3 What are the different type of Variable in Java?

There are theree Variable in Java-

i. local variable.
ii. Instance Variable.
iii- class Variable.

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i- Local variable- Local variable are created within a particular method or constructor and can be use within only the scope of method and do not have default values.

* // local variable

```
class Under {
    int x;
    String name;
}
```

ii. instance variable- (member variable)
or
(non-static variable)

* Instance variables are declared within a class but outside of any method, constructor or block. Each instance of the class has it's own copy of these variable and it is initialized with default value.

example- // Instance variable

```
class Student {
    int name;
```

public static void hello ( ) {

String color;
int distance;

}

}

* Default values —

(obj) ⇒ null
(int) ⇒ 0
(Boolean) ⇒ false.

3. class variable — Also known as static variable are declared with the 'static' keyword within a class but outside of any method, constructor, or block.

Class variables are associated with the class itself rather than any particular object (or instance)

Example —

class myname {

static int x = 0;

public myname ( ) {

}

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Q-4 Instance variable Vs local variable.

Instance Variable	Local Variable.
(a) They have an default value (depending upon the type of variable)	They do not have default values.
(b) They have declared within a class but outside of any method or constructor.	They declared within any particular method, or constructor or block and can't use outside of it's scope.
(c) They are created in heap memory area of JVM.	They are created in Stack memory area of JVM.

Q-5 In which area of memory is allocated for instance variable and local variable

4. Instance Variable → Heap Area.

B. local variable → Stack Area

Q-6. What is Method overloading?

Method overloading refers to the capability of a class to have multiple methods with the same name but with different parameters.

Example-

```
class Calculator{
public int add (int a, int b){
        return a+b;
    }
public int add (int a, int b, int b){
        return a+b+c;
    }
}
public class Calci {
public static void main (String[] a)
    {
        Calculator calc = new Calculator();
int r1 = calc.add(2,3);
int r2 = calc.add(3,2,5);
}
```