

## Assignment - 14

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a) [what do you mean by class variable and instance variable of class]

- > Class variable
- class variables are defined within the class but outside of any class methods.
- class variable are useful for storing data that needs to be consistent across a class.
- class variable has a single copy of it exists

instance variable of class

- Each instance of a class has its own copy of an instance variable
- instance variables are created when an object is instantiated
- they are useful for storing specific data.

Q2) what is mean by argument?  
explain the term Default argument

### → Argument:-

- Arguments are the values passed to a function when it is called.
- they are also known as actual parameter or actual parameters.

### Default Argument:-

- It is type of argument which is consider as optional. If we skip that parameter while calling function then its default value gets consider.
- If we are using concept of default argument all the default argument must be at the last of function () otherwise the compiler will generate error.

(Q3) Difference between static and non-static characteristics of a class

### Static characteristics

### non-Static characteristics

- |  |   |
|--|---|
| 1) Scope is in the class itself                          | 1) scope is in the specific instance of class               |
| 2) Allocated memory once at the time the class is loaded | 2) Allocated memory for each instance of the class          |
| 3) Initialize only once when the class is loaded         | 3) initialize each time a new object is created             |
| 4) Can be declared with any access specifier             | can be declare with any Access specifier mostly use private |
| 5) cannot access other static members directly           | 5) cannot access instance members directly.                 |

Q4) Explain the term parameterized constructor with default arguments

→ we can use the concept of default argument in constructor

- if we create a parameterized constructor which uses the default argument in it

- then that type of constructor is called as parameterized constructor with default arguments

- A constructor with default argument allows you to call the constructor with fewer arguments than the number of parameters defined in the constructor.

Q5) what is concept of name mangling? Explain in detail.

→ Name mangling:

- when we compile the code the compiler changes the name of every function with mangled name (modified name)

- when overload the function all the names of the functions are same but due to the concept of namemangling the compiler will change the function with new name as per pattern.

- After the code is getting compiled there is no concept of overloading because of the name mangling

- if we pass function like

`int Addition (int no1, int no2)`

then the mangled function is like that.

`Addition@2 i i = Addition@ 2 i i`

initialize of  
data types  
of  
every  
parameter

Q6) How do we initialize the static characteristics of a class?



To initialize static characteristics of a class in C++ you can use the class name and scope resolution operator (::) to initialize the static data members outside the class.

- for example:-

`int Thali :: lonche = 111; // Assignment of static characteristics or variables`

Q7) Can we access private non static characteristics of a class from static method? Explain with example.

We can't Access private non-static characteristics of class from static method because static methods can only access only static members of a class not the non-static members.

Q8) Is it possible to create private static characteristics of class? Explain with example

→ you can create private static characteristics of a class in C++.

we can use static keyword and the private access specifier for declaration.

for example:-

```
#include <iostream>
using namespace std;
```

```
class Demo
```

```
{
```

```
private:
```

```
    Static int lonche;
```

```
}
```

Q9) what is the lifetime (scope) of static characteristics of class?

- - static characteristics are declared within a function this scope is called as local scope that means we can access anywhere in the program if it under in public Access specifier.
  - static characteristics are declared outside the function that means file scope

Q10) what is mean by static behaviour? explain with example.

- - To call the static behaviour we use the name of that class
  - static method can be call without creating object
  - static method can access only static characteristics of class
  - A method or function that is associated with a class rather than a specific instance of class this method called as static method or behaviour

```
# include <iostream>
using namespace std;
```

```
class Thali
```

```
{
```

```
public
```

```
static void Show Lanche()
```

```
{
```

```
cout<<"In the static behaviour  
of class <<endl;
```

```
}
```

```
};
```