

Constructors

Member function of a class that is automatically whenever a class is created.

Properties:

- Has the same name as of the class.
- Does not has a return type.
- Public member

Types:

- Default Constructor (constructor with no parameters)
- Parametrized Constructor (constructor with parameters)
- Copy Constructor (used to copy data of one object to another)

Inheritance

Allows to create new class from an existing class.

Is-a relationship

A car is a vehicle

Orange is a fruit

- Multiple

```
Class A {  
  
}
```

```
Class B {  
  
}
```

```
Class C: public A, public B {
```

}

- **Multilevel**

Class A {

}

Class B: Class A{

};

Class C: Class B{

}

- **Hierarchical**

Class A {

}

Class B: class A {

}

Class C: class A {

}

- Hybrid

Ques - **Reverse Integer**

123 -> 321

$X \% 10$; -> 1

$X / 10$ -> 0

Ans -> $3 * 10 + 2$ -> $32 * 10 + 1$ -> 321

Ques - Next Greater Element

```
printNextGreaterElement(arr, n){

    Stack<int> s;

    s.push(arr[0]);

    for(int i = 1; i < n; i++){

        if(s.empty()) {
            s.push(arr[i]);
            continue;
        }

        while(s.empty == false && s.top() < arr[i]){

            cout << s.pop() << " ->." << arr[i];

        }

        s.push(arr[i]);
    }

    while(s.empty == false){

        cout << s.pop() << " ->." << -1;

    }

}
```