UNIT-II
Building Blocks of Language

Wrapper Class

- Generally, when we work with Numbers, means primitive data types such as byte, int, long, double, etc.

- **Example**

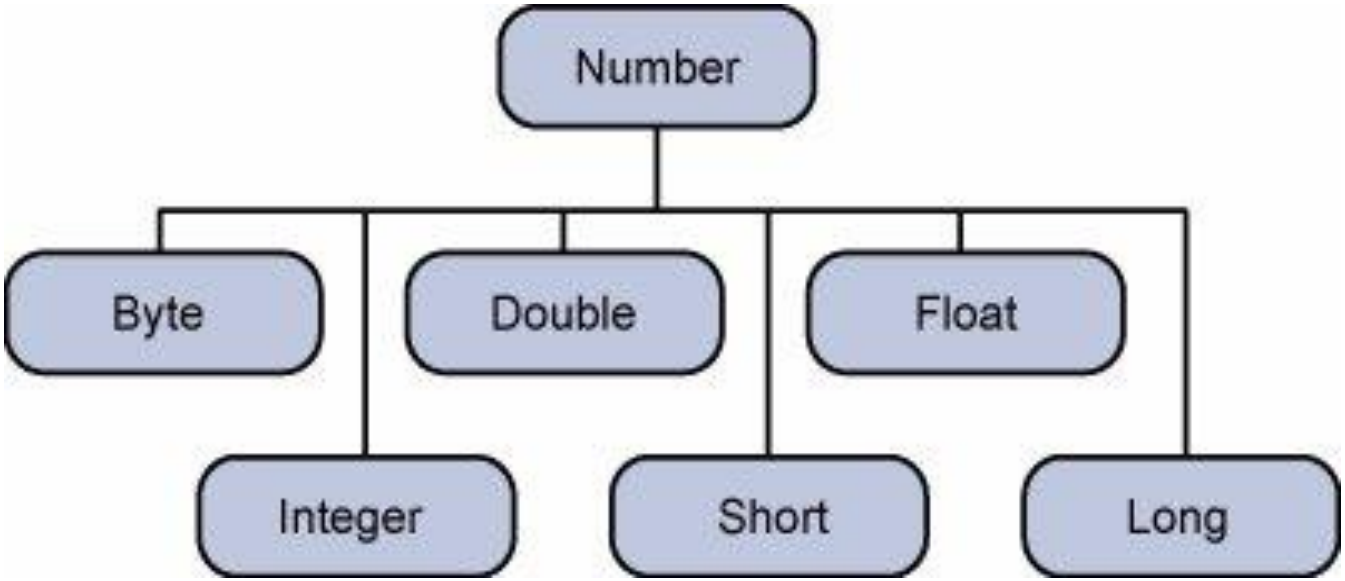
  int i = 5000;

  float gpa = 13.65;

- Some times we face situations where we need to use objects instead of primitive data types. But, we are not able to convert Primitive Data type into objects directly.

- In order to achieve this, Java provides **wrapper classes**.

- All the wrapper classes (Integer, Long, Byte, Double, Float, Short) are subclasses of the **abstract class Number.**



- **The wrapper class is a class whose object of contains or wraps its respective primitive data type into object. Converting primitive data types into object is called boxing(autoboxing), and this is done by compiler.**

- Therefore, while using a wrapper class you just need to pass the value of the primitive data type to the constructor of the Wrapper class. And the Wrapper object will be converted back to a primitive data type, and this process is called **unboxing**.

- The **Number** class is part of the **java.lang package.**
- **Example:**

```
int x = 25;
Integer y = new Integer(x);
```

- Below table lists all wrapper classes in details.

Primitive	Wrapper Class
boolean	Boolean
byte	Byte
char	Character
int	Integer
float	Float
double	Double
long	Long
short	Short

- There are mainly two uses with wrapper classes.
  - **Primitive to Wrapper (Boxing)**
  - **Wrapper to Primitive (Unboxing)**

- Primitive to Wrapper (Boxing)
  - To convert **simple data types** into **objects**.
- Wrapper to Primitive (Unboxing)
  - To convert **objects** into **data types**.

Primitive to Wrapper(Autoboxing)

```
public class WrapperExample1
{
public static void main(String args[])
{
    int a=20;
    Integer i=Integer.valueOf(a);//converting int into Integer
    Integer j=a;//autoboxing (Integer.valueOf(a))
    System.out.println(a+" "+i+" "+j);
}
}
```

Wrapper to Primitive (Unboxing)

```
public class WrapperExample2
{
public static void main(String args[])
{
    Integer a=new Integer(3);
    int i=a.intValue();//converting Integer to int
    int j=a;//unboxing (a.intValue())
    System.out.println(a+" "+i+" "+j);
}
}
```