

51. Let's say you have an "int b=3; and int a=4;" how can you swap them?

```
// one-line methods
a = a ^ b ^ (b = a);
b = (a + b) - (a = b);
a += b - (b = a);

int temp = a; // temporary variable
a = b; b = temp;
```

52. Do you know typecasting? What is casting?

- **Auto-boxing** → is a process when you take a primitive value and assign into wrapper class object int i=10;

```
Integer n=i;
Integer num=200;
Integer num2=new Integer(400);//NO BOXING
```

- **Un-boxing** → is a process when you take Wrapper class object and convert to primitive.

```
Integer num2=new Integer(400);
Integer num=200;
int i=num2;
```

- Assigning a value of one type to a variable of another type is known as Type Casting.

53. What is the output for this program?

```
for (int i = 0; i < 3; i++) {
    for (int j = 3; j >= 0; j--) {
        if (i == j)
            continue;
        System.out.println(i + " " + j);
    }
}
```

Output: 1 0 2 3 2 1 2 0

54. How do you use an abstract class in your project give me an example?

- These concepts are commonly used in framework development. Abstract class is used in defining a common super class while writing Page Object Model layer of the framework. We usually create an abstract class named BasePage to have all common members for every page written in this class example `getPageTitle()`.
- Then each Page class (HomePage, LoginPage, DashboardPage etc.) inherit from BasePage. Sometimes one may need to change the behavior of methods implemented in superclass. So, subclass has freedom to override that method where we use polymorphism. This is how we use Abstract class in real projects.

55. What is the difference between pass-by-value and pass-by-reference? pass by value & pass by reference?

- Passing by value means that the value of the function parameter is copied into another location of your memory, and when accessing or modifying the variable within your function, only the copy is accessed/modified, and the original value is left untouched. Passing by value is how your values are passed on most of the time.
- Passing by reference means that the memory address of the variable (a pointer to the memory location) is passed to the function. This is unlike passing by value, where the value of a variable is passed on. In the examples, the memory address of myAge is 106. When passing myAge to the function increaseAgeByRef, the variable used within the function (age in this example) still points to the same memory address as the original variable myAge (Hint: the & symbol in front of the function parameter is used in many programming languages to get the reference/pointer of a variable).