Final Classes, Common Errors with final usages

Final classes

Q1. In Java, when we do not want a class to ever have subclasses, we declare that class as final.

In Java we have many final classes. For example, like the String and all the wrapper classes like Integer, Float etc.

Select all the correct statements given below:

☐
```
class A {} // statement 1
class final B extends A {} // statement 2
```
Statement 2 will result in compilation error. Since class **A** is not marked as `final`, class `B` which extends class `A`, cannot mark itself as `final`.

☐ `Object` class declared in java.lang package, is a good example of `final` class.

☐ Below is a valid code:
```
public final interface A {
}
```

☑ We declare a class as `final`, when we do not want someone to change its implementation by subclassing it.

Common Errors with final usages

Q1. Select all the correct statements from the below code:
```
public final class A {
        public void m1() {                                 // statement 1...
        }
}
public class B extends A {                    // statement 2}
public class C {
        public void m2() {
                ...
        }
}
public class D extends C {
        public final void m2() {                    // statement 3final int value = 2;
                final int[] valueArr = {2, 3, 4};
                final String text1 = "Cat on the wall";
                String text2 = text1;                      // statement 4String text3 =  "Dog in the pool";
                text1 = text3;                             // statement 5valueArr[1] = value;                  // statement 6}
}
```

☐ **Statement 1** will result in a compilation error. Since class `A` is marked as `final` all its methods must also be marked as `final` so that its subclasses cannot modify the method implementation by overriding.

☑ In **statement 2**, will result in compilation error. Since class `A` is declared as final it cannot be extended by class `B`.

☐ In **statement 3**, method `m2` of class `D` overrides the implementation provided in `m2` of class `C`. Since `m2` in class `C` is not declared `final`, `m2` of class `D` also should not be declared `final`.

☐ **Statement 4** will result in a compilation error. Since `text1` is declared as `final` it cannot be used in an any assignment statement.

☑ **Statement 5** will result in a compilation error.

☐ **Statement 6** will result in a compilation error.