Exercises on Design Patterns

1, Write down three differences between abstract classes and interfaces in Java 8.

- interface can inherit from multiple sources
- abstract class cannot inherit from multiple sources
- abstract class can have constructors
- interface inherits from nowhere while abstract class inherits from object
- differences when using reflection

2, Are the following true or false?

a, Every interface must have at least one method. - FALSE

b, An interface can declare instance fields that an implementing class must also declare. - FALSE

c, Although you can't instantiate an interface, an interface definition can declare constructor methods that require an implementing class to provide constructors with given signatures. – FALSE

3, Provide an example of an interface with methods that do not imply responsibility on the part of the implementing class to take action on behalf of the caller or to return a value.

- observer – observables

4, What is the value of a stub class like WindowAdapter which is composed of methods that do nothing?

5, How can you prevent other developers from constructing new instances of your class? Provide appropriate examples to illustrate your answer. singleton?

6, Why might you decide to lazy-initialise a singleton instance rather than initialise it in its field declaration? Provide examples of both approaches to illustrate your answer.