CS 569: Assignment 2

**Deadline: Friday 26th October 11:59pm**

**Instructions:**

1. You **MUST** do and submit your **OWN** work. There will be a severe penalty in case of plagiarism.
2. The late submission policy is **10%** marks deduction after one day and **25%** after two days. After that, assignment will not be accepted.
3. For all the questions, try to make the design more decoupled and extendable. Grading will be done based on a better design in the solution.
4. Your solutions must simulate results, in form of some outputs (textual/graphical).
5. You can use timers/threads to generate test data asynchronously to simulate the results.
6. The resultant programs should be self explanatory and instructive to execute and run.

**Problem 1**: A **File Transfer Library** consists of two modes of transferring files; either through a USB or through a Bluetooth device. As a design pattern student you are required to implement a **File Transfer Library** that checks the availability of these devices and transfer a file through any available device.

Your design should be extendable. You can use Facade patterns for the solution. Your design should be simulative enough to show the results with a test program.

**Problem 2:** You are required to design and implement a **Fully automatic Washing Machine** using State Pattern. Your Automatic Washing Machines should wash clothes by following the below mentioned process

* fills in the tub
* soak clothes for 2 mins
* swirl or rotate clothes for 20 mins to remove stains and dirt
* discharge existing water
* refills the tub to clean washing powder left in clothes including bleach with fresh water
* discharge water again
* spin clothes for 5 mins to dry them
* play an alarm when washing process is done

Your design should be simulative enough to show the results with a test program.

## Possible States

* Empty Machine (possibly an initial starting state)
* Has Water
* Has Clothes
* Done Washing
* Done Drying

## Possible Actions

* As the machine is automatic we can just provide two methods
  + Initialize (fills water in the tub)
  + Add clothes (a machine cannot automatically add clothes now, can it?)
  + After these two steps the machine is on its own
* fill tub (the machine is connected to a water source , after it gets a filling command It automatically pumps water from the source)
* soak clothes
* remove stains and dirt
* discharge water
* dry clothes
* play alarm

Question 1

Check whether the device is on and off through command pattern.

hahahah