

CS 5/7318 Object-Oriented and Design Homework #3 (10 Points)

*Due Date: On campus 11:59PM on 3/23, 2024;
Off campus 11:59PM on 3/24, 2024*

- **Objective**

To practice Factory Method Pattern and Abstract Factory Pattern.

- **Requirements**

1. Read through [Chapter 4](#) of the given reading material.
(You must click on <http://lyle.smu.edu/~lghuang/CS7318/homework/Chapter4.pdf> but not Chapter 4 in the textbook.)
2. Design and implement the class(es) using the factory method pattern to create an Apple online smartphone store ("iPhone XX Pro Max", "iPhone XX Pro", "iPhone XX") and a Samsung online smartphone store ("Galaxy S", "Galaxy AI"); Order an "iPhone XX Pro Max" and order a "Galaxy S" from the corresponding store.
Order procedure: select a model → input mailing address → make a payment → finish
3. Design and implement the class(es) using the abstract factory pattern to create an Apple online store and a Samsung online store; Order an iPad Pro with an Apple Pencil and Galaxy Tab S with a keyboard cover.

	Tablet	Watch	Computer	Accessories
Apple	iPad Pro, iPad Air, iPad mini	Apple Watch Series xx, Apple Watch Hermes	MacBook	AirPods, Apple Pencil
Samsung	Galaxy Tab S, Galaxy Book	Galaxy Watch xx, Galaxy Fit2	Notebook	Keyboard Cover, Wireless Charger

See product configuration details below:

<http://www.apple.com/>

<http://www.samsung.com/us/>

4. Draw one class diagram for each of the above two implementations.
5. Print out the screenshot showing the compilation and execution of your programs. The output format of your programs should be similar to the screenshot shown on page 130.
6. Language: Java
7. Environment: Eclipse

- **Submission to Canvas**

One zip file containing the following:

- Two program folders named as “phonefactorymethod” and “phoneabstractfactory” containing the Java executable file and all class files for each of the above two programs, respectively.

One PDF file describing

- how to compile and execute your two programs including how to set the environmental class path and your Java version number.
- Class diagrams for both designs.
- Compilation and execution screenshots for both programs.