

CS320 ASSIGNMENT 3.1: OO DESIGN & UML – PART I: USE CASE & ACTIVITY DIAGRAMS

Instructor: Xinghui Zhao

Due: 11:59pm on 10/19/2016

1 Introduction

This assignment requires individual submissions, i.e., you must work on this assignment **independently**, no team collaboration is allowed.

The purpose of Assignment 3 is to help you practice *object-oriented design* with UML, as well as code generation/implementation based on the design. Assignment 3 consists of two parts, and this is the Part I.

2 Reverse Engineer an ATM Machine

Reverse engineering, also called back engineering, is the processes of extracting knowledge or design information from anything man-made and re-producing it based on the extracted information. When applied to software, reverse engineering means the process of analyzing a subject system to create representations of the system at a higher level of abstraction.

In this assignment, you will reverse engineer an ATM machine using UML. An example ATM machine is shown in Figure 1.



Figure 1: ATM Machine

Note that you are required to design the ATM that **you are actually using**, not just any ATM machine. To do this, follow the steps below:

1. Insert your bank card to an ATM machine, type your PIN.

2. **Take a picture** of the main user interface of the ATM, i.e., the window which shows the main operations.
3. Try each operation and record how it works.
4. Design a **use case diagram** for the ATM machine. Use the "include" and "extend" relations when you see fit.
5. For each main operation shown on the main interface, design an **activity diagram** for that operation. Use "swimlanes" in your activity diagrams.

3 Submission

This assignment is due at 11:59pm on 10/19/2016. Late submissions are subject to a 20% penalty. **Late submissions will not be accepted after 3 days past the deadline, in this case 11:59pm on 10/22.**

You should submit the following files in JPG, PNG, or PDF format:

1. The picture of your ATM machine;
2. Use case diagram;
3. Activity diagrams.

4 Grading Scheme

This assignment will be graded out of 40. For your information, the grading scheme is shown in the following table.

Items	Percentage
Use case diagram	30%
Activity diagrams	50%
Design matches the picture	20%

5 Go Extra Mile

Although for Part I, you do not have to use any UML tool, you will need to use one in Part II. When you have time, it is a good idea to check out the available UML tools on this wiki page: https://en.wikipedia.org/wiki/List_of_Unified_Modeling_Language_tools