

COMP 2710: Project 1 – Phase 1: Analysis (35 points)

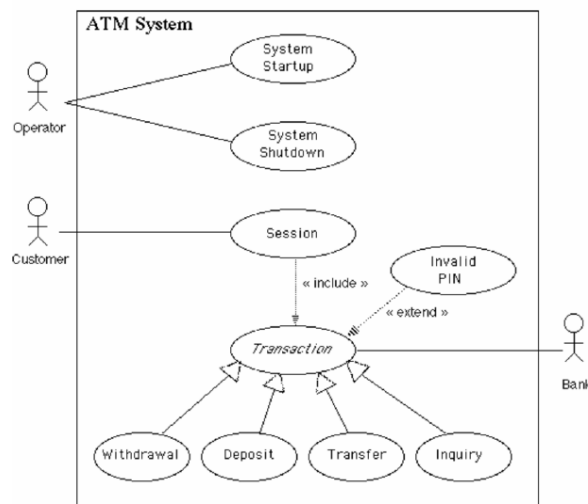
Goals of Project 1 - Phase 1:

- To design a use case diagram to capture the requirements of project 1.
- To use the argoUML tool to create a use case diagram and specify use cases.
- To use the argoUML tool to create a data flow diagram

1. Overview

1.1 (20 points)

1.1.1 (10 points) Design a **use case diagram** for a text-based game. The following is a sample use case diagram for an ATM system. More details can be found at: “Use ArgoUML to create a use case diagram.pdf” (available on Canvas).



1.1.2 (10 points) Write a few important **use cases**. Remember, these use cases describe how the user interacts with the text-based game (what they do, what the systems does in response, etc.). Your use cases should have enough basic details such that someone unfamiliar with the system can have an understanding of what is happening in the text-based game. They should not include internal technical details that the user is not (and should not) be aware of. Make sure that any special rules/features you plan to add are clearly described in your analysis section.

1.2. (15 points) You must prepare a data flow diagram for your text-based game. Please refer to http://en.wikipedia.org/wiki/Data_flow_diagram for details on data flow diagrams. A sample data flow diagram can be found at: “Use ArgoUML to create a use case diagram.pdf” (available on Canvas).

2. argoUML

In this project, you must use argoUML to create a **use case diagram**, **data flow diagram** (i.e., **statechart diagram**), and specify all the use cases in your use case diagram.

2.1. Availability

The URL of the argoUML's website is: <http://argouml.tigris.org/>

2.1.1 Windows Users

Please click the following link to download argoUML for Windows.

<http://argouml-downloads.tigris.org/nonav/argouml-0.34/ArgoUML-0.34-setup.exe>

2.1.2 Mac OS Users

Do **NOT** download and install ArgoUML on your Mac OS.

You **must** launch ArgoUML via Java Web Start. The Google Chrome does not work for this application. Please use either Safari or Firefox as a browser. Click the following link to launch the latest stable release:

<http://argouml-downloads.tigris.org/jws/argouml-latest-stable.inlp>

You may encounter the following two problems:

- How to open apps from an unidentified developer in Mac OS?
The answer can be found here:
<http://www.imore.com/how-open-apps-unidentified-developer-os-x-mountain-lion>
- How to fix Application Blocked by Security Settings in Mac OS?
The answer can be found here:
<http://shellzero.wordpress.com/2014/01/24/how-to-fix-application-blocked-by-security-settings-mac-os-x/>

In your java security setting, please allow your Mac OS to launch application from argoUML's website (i.e., <http://argouml-downloads.tigris.org>).

2.1.3 User Manual

The argoUML User manual can be found below:

<http://argouml-stats.tigris.org/documentation/manual-0.34/>

2.2. Create a Use Case Diagram using argoUML

Your use case diagram captures how use cases and actors interact. Click the following link to see an example of an ATM system's use case diagram.

<http://argouml-stats.tigris.org/documentation/manual-0.34/ch04s03.html>

In this project, you must use ArgoUML to draw a use case diagram. When you create a new project (see **Section 5** for "how to name your project") it has a use case diagram created by default, named use case diagram 1. Please click the following link for detailed instructions on how to use argoUML to create use cases in your first use case diagram.

2.3. Create Use Case Specification in argoUML

You must also use argoUML to document the behavior of each use case in your use case diagram. The specification of a use case should be described in **the Documentation tab** of the use case. The specification of each use case should contain the following items:

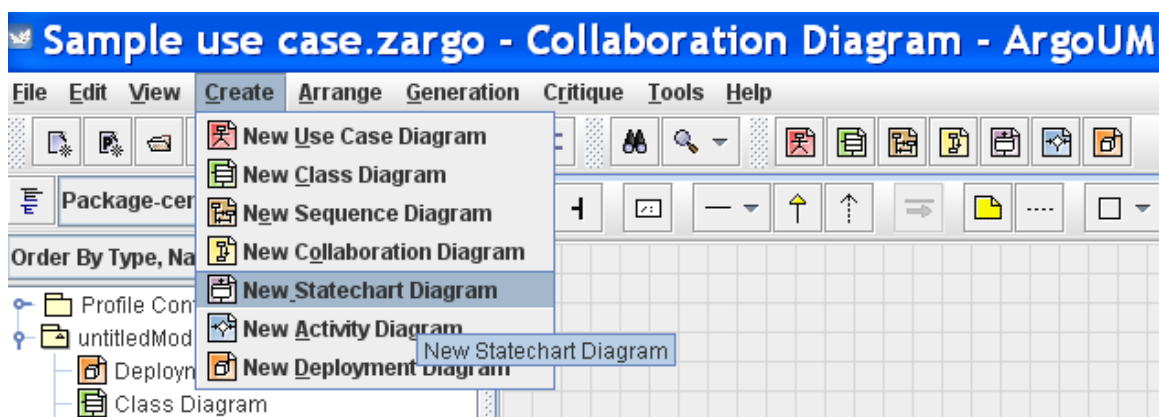
- **Name.** The name of the use case to which this relates.
- **Goal.** A one or two line summary of what this use case achieves for its actors.
- **Actors.** The actors involved in this use case, and any context regarding their involvement. Note: This should not be a description of the actor. That should be associated with the actor on the use case diagram.
- **Pre-condition.** These would be better named “pre-assumptions”, but the term used everywhere is pre-conditions. This is a statement of any simplifying assumptions we can make at the start of the use case.
- **Basic Flow.** The linear sequence of steps that describe the behavior of the use case in the “normal” scenario. Where a use case has a number of scenarios that could be normal, one is arbitrarily selected.
- **Alternate Flows.** A series of linear sequences describing each of the alternative behaviors to the basic flow.
- **Post-conditions.** These would be better named “post-assumptions”. This is a statement of any assumptions that we can make at the end of the use case.
- **Requirements.** In an ideal world the vision document, use case diagrams, use case specifications and supplementary requirements specification would form the requirements for a project.

Please click the following link for details on the use case specification:

<http://argouml-stats.tigris.org/documentation/manual-0.34/ch04s03.html#d0e3323>

2.4. Create a Data Flow Diagram using argoUML

You can also use argoUML to draw data flow diagram for your system. To create a data flow diagram, you can click the “New Statechart Diagram” item in the in the “Create” menu (see the Figure below).



By default, the name of your statechart is “Unnamed StateMachine”. Please change this default name to represent your own data flow diagram.

3. Deliverables

Please submit your project analysis through the Canvas system (e-mail submission will **not** be accepted). You just need to submit your analysis document as an ArgoUML compressed project file (*.zargo). The file name should be formatted as:

project1-analysis.zargo

Note: other format (e.g., pdf, doc, txt) will not be accepted.

4. Grading Criteria

4.1 (10 points) Use case diagram

1. (2 points) Actors
2. (3 points) Use cases in the diagram.
3. (2 points) Relations among actors and use cases.
4. (3 points) Relations among use cases.

4.2 (10 points) Use case specification

5. (3 points) Name, goal, actors in each use case
6. (3 points) Pre-condition/post-condition in each use case
7. (4 points) Basic Flows/Alternate Flows in each use case

4.3 (15 points) Data flow diagram

8. (2 points) External entity
9. (5 points) Processes
10. (5 points) Dataflows
11. (3 points) DataStore

5. Sample Usage

```
What's your name? Bob
```

```
=====
|                                     Welcome, Bob!                                |
=====
```

- 1) Start a New Game of Dunstan and Dragons!
- 2) View top 10 High Scores
- 3) Quit

```
Please choose an option: 2
```

The top 5 High Scores are:

Win 1337
CaseyZZZ 625
JonnieKill 400
Bob 75
Daisy 33
-no more scores to show-

- 1) Start a New Game of Dunstan and Dragons!
- 2) View top 10 High Scores
- 3) Quit

Please choose an option: **1**

Entering the Dungeon...

You have:

intelligence: 20
time: 25
money: \$11.00

You are 20 steps from the goal. Time left: 25.

- 1) Move forward(takes time, could be risky...)
- 2) Read technical papers (boost intelligence, takes time)
- 3) Search for loose change (boost money, takes time)
- 4) View character
- 5) Quit the game

Please choose an action: **4**

You have:

intelligence: 20
time: 25
money: \$11.00

You are 20 steps from the goal. Time left: 25.

- 1) Move forward(takes time, could be risky...)
- 2) Read technical papers (boost intelligence, takes time)
- 3) Search for loose change (boost money, takes time)
- 4) View character
- 5) Quit the game

Please choose an action: 2

You read through some technical papers. You gain 3 intelligence, but lose 2 units of time.

You are 20 steps from the goal. Time left: 23.

- 1) Move forward (takes time, could be risky...)
- 2) Read technical papers (boost intelligence, takes time)
- 3) Search for loose change (boost money, takes time)
- 4) View character
- 5) Quit the game

Please choose an action: 1

You move forward one step, and...

NOTHING HAPPENS!

You spent one unit of time.

You are 19 steps from the goal. Time left: 22.

- 1) Move forward (takes time, could be risky...)
- 2) Read technical papers (boost intelligence, takes time)
- 3) Search for loose change (boost money, takes time)
- 4) View character
- 5) Quit the game

Please choose an action: 1

You move forward one step, and...

YOU FIND SOME PAPERS TO GRADE.

You spent two units of time, but gained \$3.00!

You are 18 steps from the goal. Time left: 20. You can move forward or backward.

- 1) Move forward(takes time, could be risky...)
- 2) Read technical papers (boost intelligence, takes time)
- 3) Search for loose change (boost money, takes time)
- 4) View character
- 5) Quit the game

Please choose an action: 1

You move forward one step, and...

PUZZLE: It's a riddling imp. I hate riddling imps. But fine, he asks:
"Find the product of 8 and 8!"

- 1) 16
- 2) 64
- 3) 256
- 4) Uh...uh... no?

Choose wisely: **4**

The imp cackles "Oh yes. Yes indeed. Now you die."

TIME HAS FALLEN TO ZERO. YOU DIE.

<Print Score, adjust high scores>