

## CS 2340 Spring 2020 – Milestone 7

### End Game Stages & Object-Oriented Design Principles

**BACKGROUND:** For this iteration of the project, your team will implement the final stages of space trader, including win and lose conditions. Additionally, you will review your code with specific reference to the OOD principles you have been learning in class.

**PURPOSE:** By reviewing your implementation of space trader, largely developed before the introduction of OOD principles, you will be able to see your natural tendencies within software development. This assignment's purpose is to make you aware of these tendencies and code smells that appear within your program, thus allowing you to preemptively identify issues in the future.

**TASK:** This milestone has one team design deliverable, a required feature set for implementation, and a demo which will occur the week after milestones are due.

#### Object-Oriented Design Requirements

For this milestone, you will need to show examples of some of the SOLID and GRASP principles in your code. Specifically, you will need to provide concrete examples in your team's code of 3 SOLID principles and 5 GRASP principles (either GRASP "basic" or "advanced").

To get credit for this portion of the assignment, you must take a screenshot of the code for each of your examples. Each pictured example must demonstrate a unique principle. When you have compiled your examples of SOLID and GRASP principles from your code, add the pictures to a PDF document. For each picture in your document, label it with the principle it demonstrates, and a brief description (3-5 sentences) of how the example fulfills the coding principle. Do not forget to submit a PDF of your OOD principle examples for this assignment.

#### Implementation Requirements

Implement a way for the user to refuel their ship by paying for fuel with credits. This can be added to the market screen or somewhere else altogether, as long as the user can refuel the ship when needed. The only exception is that the user should not be able to refuel the ship during an NPC encounter.

Implement a way for the user to repair their ship's diminished health. Repairing the ship also costs credits, but for each additional level to the user's Engineer skill, repairing should cost significantly less. This can be added to the market screen or somewhere else altogether, as long as the user can repair the ship when needed. The only exception is that the user should not be able to repair the ship during an NPC encounter.

If the ship's health reaches zero, the user should be faced with a "Game Over" screen that prompts the user to start a new game.

Create a unique, expensive item that allows the user to win the game. The game-winning item should be present in a single, random region's market. Discovering and purchasing this item should allow the user to win the game. This item should be the single most expensive item in the game, but make sure the price is still realistically attainable with your implementation (so that the user can actually win the game).

Both winning the game and losing the game should finally direct the player to the end credits screen. From this screen the user should have the option to start a new game. The user should also be able to see the game credits, as the name suggests.

Reminder: All implementation details not specified by the rubric are up to you!

### **Checkstyle**

During demo your team will be required to run the checkstyle script (located under files>checkstyle>Java Guide.pdf). This script will give your project a score out of 10 and will account for 10 points of your M7 final grade. Be sure to run the checkstyle script prior to submission to avoid unforeseen deductions.

### **Milestone Tagging**

Tags are a way of marking a specific commit and are typically used to mark new versions of software. To do this, use "`git tag`" to list tags and "`git tag -a tag_name -m description`". You are required to tag the latest commit before the deadline which is to be graded during demo. You will be required to pull this commit during demo.

### **Submission Requirements**

In addition to your OOD Principles PDF, ensure that you include a link to your GitHub repository in your submission. Also, ensure that you have added your grading TA(s) as collaborators so that they may view your private repository. **Repositories must be located on the Georgia Tech GitHub and must be set to private!** Points may be deducted if these guidelines are not followed!

**CRITERIA:** You will be graded according to the rubrics on the final pages of this assignment document. Please note, 60 points of the 100 total points are dependent on your group's demo which you will pull the tagged git commit for the milestone to be run on your machine.

**Groups are required to demo in order to receive credit for the features they have implemented. If you would like to demo changes made after the milestone due date, you will receive a flat 20-point penalty on the milestone's grade.**

**Object-Oriented Design Principles (40 points)**

Principle	Each principle is worth 5 points for a total of 40 points
Criteria	Each principle must be accurately depicted within the code and must have a correct explanation to receive credit.

**Implementation / Demo Rubric (60 points)**

Demo: Implements a way for the user to refuel their ship by paying for fuel with credits.	5 points.
Demo: Refueling the ship costs credits from the player's total. Credits and ship fuel amount update after refueling.	5 points.
Demo: Implement a way for the user to repair their ship's diminished health.	5 points.
Demo: Repairing the ship costs credits from the player's total. Credits and health update after repair.	5 points.
Demo: Engineer skill influences cost to repair ship; Higher Engineer skill = lower cost.	5 points.
Demo: If the ship's health reaches zero, the user should be faced with a "Game Over" screen	5 points.
Demo: One special, game-winning item should be present in a single, random region's market.	5 points.
Demo: Purchasing this item should allow the user to win the game.	5 points.
Demo: End Credits screen is presented after winning and game over screen	5 points.
Demo: Player can choose to start a new game from the end credits screen	5 points.
Checkstyle	10 points.