Madeline Stevens

SDEV 220

Cargo Bay 11

March 24, 2022

Overview

For my final project, I would like to develop a cargo management simulation game based on the show "Star Trek: Deep Space Nine". Under the hood, it would function essentially like a card or board game with one player, but it would take advantage of being a computer program to incorporate mechanics that would be onerous in a physical game. It would also keep track of the player's resources and score automatically.

The user will play as Quark—the entrepreneurial Ferengi bartender, businessman, and trader of goods both legitimate and illegitimate—and start the game with a set amount of money and a randomized selection of goods in their cargo bay. The game would go for a predetermined number of turns, and each turn a smattering of offers will become available, each one a potential contract to provide a quantity of a specific good on a certain turn. Fulfilling these contracts will gain the player more money and/or cargo with which to make future deals, but failing to deliver will reduce the player's resources. There will be other factors, as well, like perishable goods having an expiration date or illegal cargo potentially landing the player in jail, thus losing the game. The player wins if they make it through all of the turns without losing all their resources.

Goals

1. **Custom classes:** There will be at least two custom classes created to organize the cargo and contracts (what would be the decks of cards if this were a physical game).
2. **GUI:** The user will be able to play the game just by pointing and clicking on buttons in the GUI, and will have access to save file management and a user manual in a top level menu.

3. **Output:** The player will be able to save their progress throughout the game and a record of their score at the end of the game.

Specifications

The GUI will be created using Tkinter. Individual games will be saved via output of a JSON file. The cargo, contracts, and any other relevant objects will be organized in a database and accessed through use of SQLite.

Milestones

1. Database

   My first task is to build the core database for keeping track of game objects and a simple proof-of-concept Python program that can access and manipulate those objects. My goal is to reach this milestone by April 1st.

2. Basic game

   My second task is to write a program that uses the database from the first task to accomplish the core game mechanics, and to code in the GUI elements for playing the game. The basic game needs to build upon the database program, keep track of the player's resources accurately, enforce the rules and win/loss conditions of the game, and have the save file functionality. My goal is to reach this milestone by April 24th.

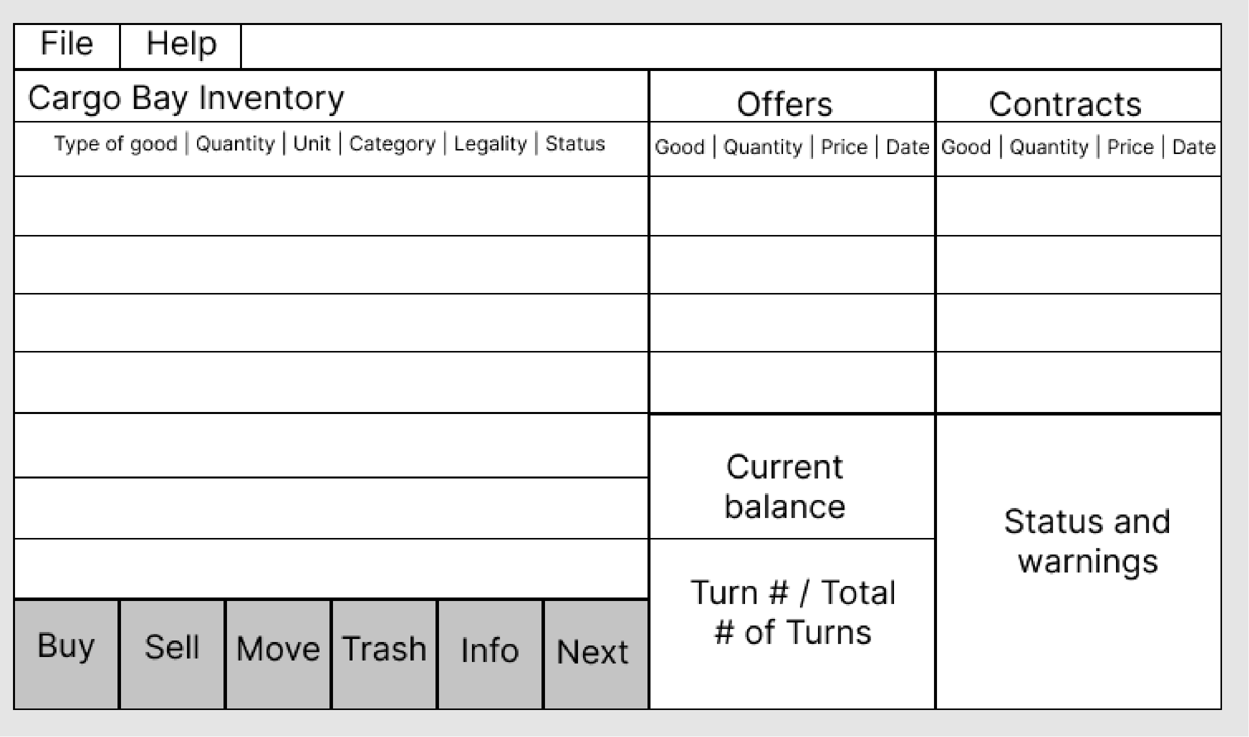
3. Extra elements

   Once the base game is complete, I'd then like to add a few extra features and types of objects to make the game more variable and fun. Examples of these features may be random events that change the value or availability of certain goods, or added volatility for certain types of cargo when stored in the same place at the same time (e.g. live animal cargo runs the risk of escaping and eating perishable cargo, or certain chemical elements cannot be stored together without endangering the station). The goal date for implementing these features is May 7th.

4. Playtesting

The last step is having a handful of my friends try playing this game and testing both how well the game works on a technical level and how much fun it is to play. My primary goal is to meet the assignment requirements, and making a fun game is secondary to that goal, but I would still like to use the last ten days or so of this project to try to make this program meet both of those criteria, if possible.

A wireframe of the GUI concept is provided below.


File
Help
Cargo Bay Inventory
Type of good | Quantity | Unit | Category | Legality | Status
Offers
Good | Quantity | Price | Date
Contracts
Good | Quantity | Price | Date
Current balance
Turn # / Total # of Turns
Status and warnings
Buy
Sell
Move
Trash
Info
Next