COSC 345

“Small is Beautiful”

Assignment 3: Beta Release Developer Documentation

Group: CodeBound

Project Title: Devolution

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How to build and run the project:

1. Go to the GitHub and download the file tagged with “Beta”.
2. Open the Devolution command line project file.
3. Create a new scheme in Xcode for the assignment.
4. Build and run the program in Xcode.

Storyline and text files:

The story is approximately 70% complete.

The placeholder variables throughout the text indicate where to change the text, which is handled by the software code:

- [NAME] - Name of the main character
- [Xe] - He and she
- [Xer] - Her and him
- [Xis] - his and her
- [Xers] - hers and his
- [Xself] - himself and herself

The links to the choices and following paths are held by the placeholder variables too.

The program code:

The code includes GUI and integrated text manipulations. The source file and associated modules (translation units) written in C contain the comments that describe what functions within the code do. In the text manipulation files all the display text and select choice bugs were fixed as well as all the memory leaks (fixed memory allocation issues in Valgrind). The working command line version produces unexpected errors when implemented into GUI that has working window with set elements and structures. For this reason we have submitted only the command line version. Images of the GUI title page, text page and choices page are shown at the end of the report.

Playing the game:

The command line version has the instructions on how to navigate through the game and select choices (simply pressing the number for each choice and pressing the enter).

The GUI version has a title screen which also displays instructions on how to navigate through the game. The up and down arrow keys on keyboard are for choosing between the options and the space bar is used to select the current choice. To switch over pages of text left and right arrow keys are used.

A description of each source file and their associated functions is provided below:

main.c

The application file for where the program runs from. It creates the first instance of the GUI window where the program will be running from.

Text handling algorithms:

mylib.c

mylib.c holds two memory allocating methods emalloc and erealloc. These two methods are used for calling malloc and realloc as well as checking that the memory was allocated correctly.

fileManager.c

fileManager.c has five main functions, it can get the location of current working directory, open and close the selected file. It also have functions to save the current path and open the saved path which are not implemented yet with GUI.

textManipulation.c

The setFile method loads all of text from the file into memory and returns a pointer to the loaded text. textManipulation.c also contains functions to get the current file, set the choices and text blocks as well as to add all pointers to the array and a function to set character name (currently the default name is Andrew T), which is to be improved to read a name from input. It also deals with the sex of the character.

Graphical User Interface:

We are using SDL2 to implement GUI elements.
(https://www.libsdl.org/index.php)
The window size is fixed at 1366 x 768 pixels wide as this is a common screen resolution and allows for a good presentation of the GUI elements (i.e. text is readable).

graphics.c

The functions for loading the game, event processing and rendering the display are all utilised in the createWindow function to ensure the game runs properly. Other methods load all the required resources, fonts, image, window center coordinates, title screen and game events.

titleScreen.c

Draws the GUI elements relevant to the titleScreen. Has three main functions for creating the text to be rendered, draw and display title screen items and destroy all the textures used.

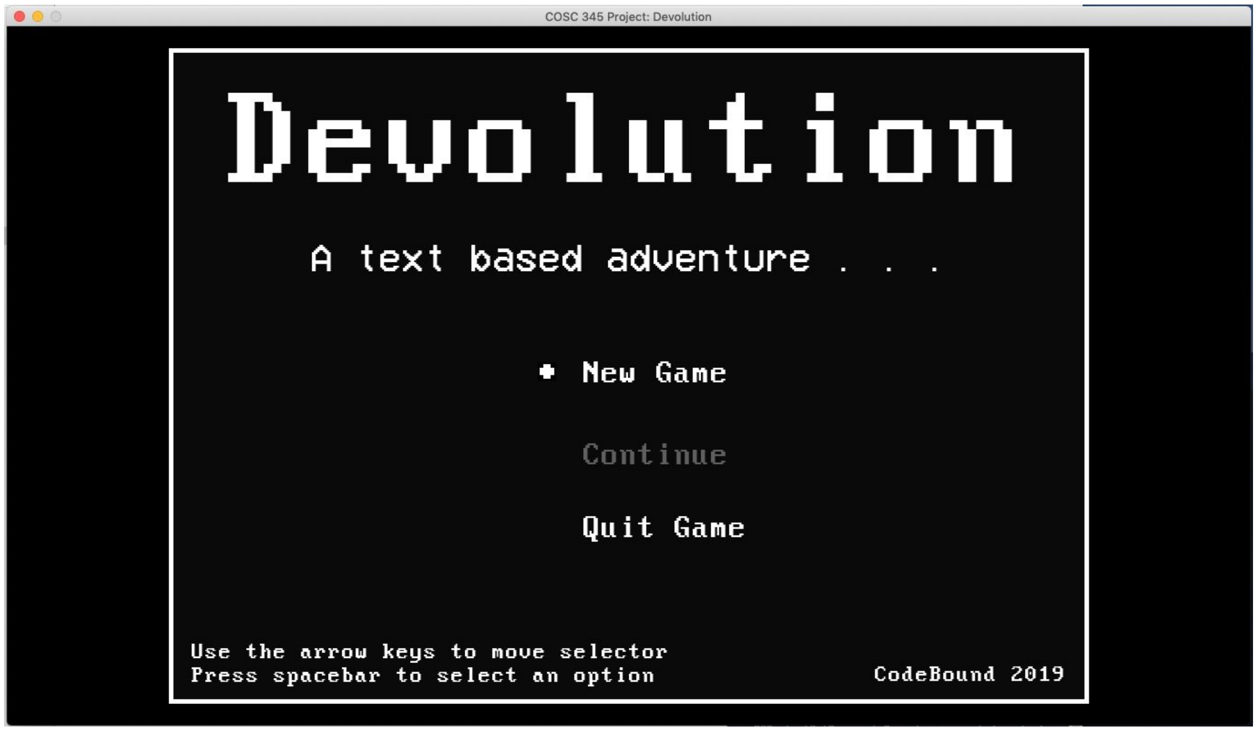
gameScreen.c

Draws the GUI elements relevant to the gameScreen. Has three main methods to move the selector, draw the shape for every element on the screen and destroy the used textures.

displayText.c

Draws the text used in the gameScreen. The displayText.c has functions to grab the text (story and choice) from the specified text files and uses these to create textures and to draw them into their corresponding shapes. It also has functions to navigate through the pages as the large text is split into pages. At the end the textures used get destroyed.

Title screen:



Use the arrow keys to move selector
Press spacebar to select an option

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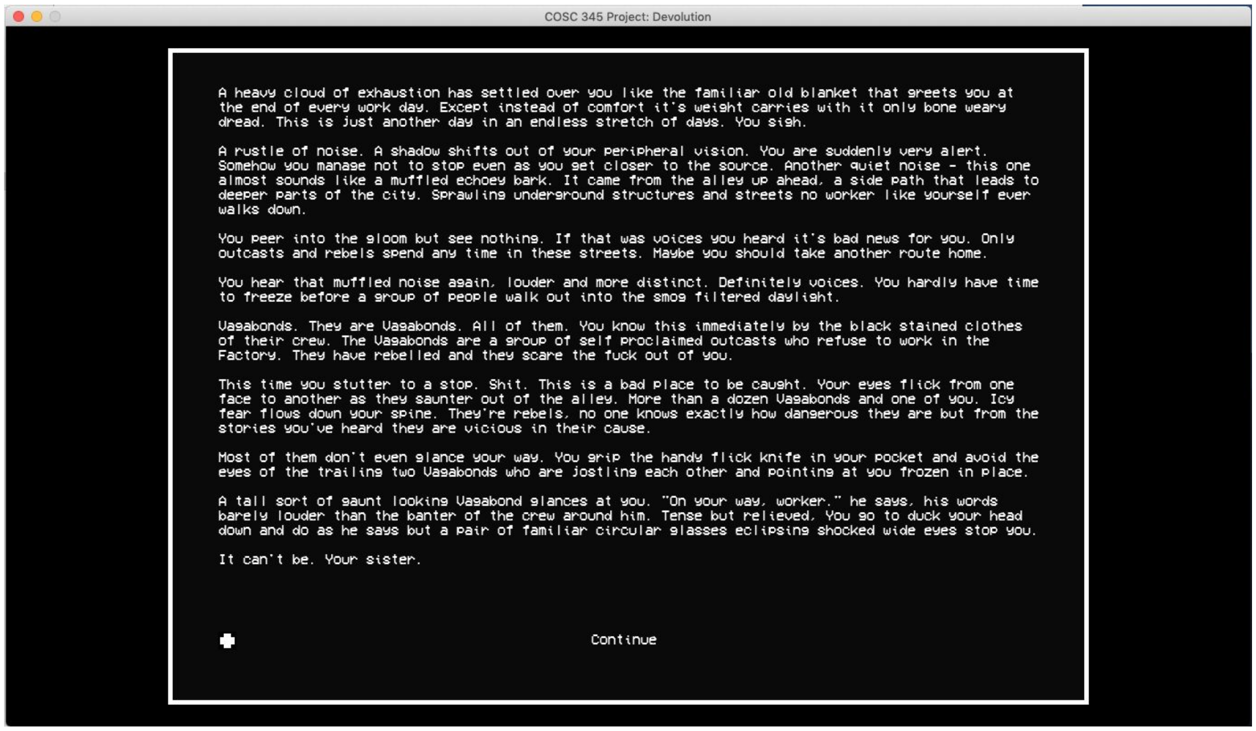
Game screen (displaying story text):



A heavy cloud of exhaustion has settled over you like the familiar old blanket that greets you at the end of every work day. Except instead of comfort it's weight carries with it only bone weary dread. This is just another day in an endless stretch of days. You sigh.

A rustle of noise. A shadow shifts out of your peripheral vision. You are suddenly very alert. Somehow you manage not to stop even as you get closer to the source. Another quiet noise - this one almost sounds like a muffled echoey bark. It came from the alley up ahead, a side path that leads to deeper parts of the city. Sprawling underground structures and streets no worker like yourself ever walks down.

You peer into the gloom but see nothing. If that was voices you heard it's bad news for you. Only outcasts and rebels spend any time in these streets. Maybe you should take another route home.

You hear that muffled noise again, louder and more distinct. Definitely voices. You hardly have time to freeze before a group of people walk out into the smog filtered daylight.

Vagabonds. They are Vagabonds. All of them. You know this immediately by the black stained clothes of their crew. The Vagabonds are a group of self proclaimed outcasts who refuse to work in the Factory. They have rebelled and they scare the fuck out of you.

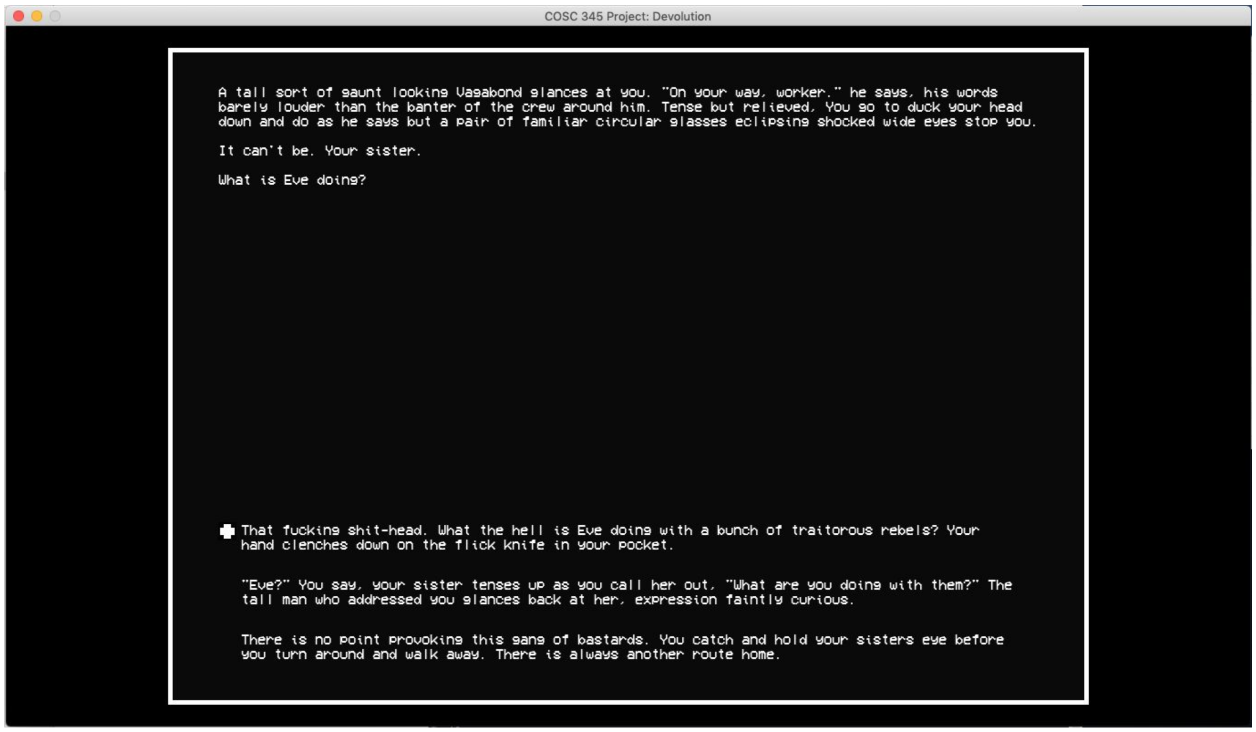
This time you stutter to a stop. Shit. This is a bad place to be caught. Your eyes flick from one face to another as they saunter out of the alley. More than a dozen Vagabonds and one of you. Icy fear flows down your spine. They're rebels, no one knows exactly how dangerous they are but from the stories you've heard they are vicious in their cause.

Most of them don't even glance your way. You grip the handy flick knife in your pocket and avoid the eyes of the trailing two Vagabonds who are jostling each other and pointing at you frozen in place.

A tall sort of gaunt looking Vagabond glances at you. "On your way, worker." he says, his words barely louder than the banter of the crew around him. Tense but relieved, You go to duck your head down and do as he says but a pair of familiar circular glasses eclipsing shocked wide eyes stop you.

It can't be. Your sister.

Game screen (displaying story and choices):



A tall sort of gaunt looking Vagabond glances at you. "On your way, worker." he says, his words barely louder than the banter of the crew around him. Tense but relieved, You go to duck your head down and do as he says but a pair of familiar circular glasses eclipsing shocked wide eyes stop you.

It can't be. Your sister.

What is Eve doing?

That fucking shit-head. What the hell is Eve doing with a bunch of traitorous rebels? Your hand clenches down on the flick knife in your pocket.

"Eve?" You say, your sister tenses up as you call her out, "What are you doing with them?" The tall man who addressed you glances back at her, expression faintly curious.

There is no point provoking this gang of bastards. You catch and hold your sisters eye before you turn around and walk away. There is always another route home.

Milestones for the final release:

- Complete the storyline: wrap up the dead end paths and link back to the previous paths
- Implement the GUI to the command line version of the game
- Optimize the code by revising it and by organizing the repeated code and calls into modules
- Simplify the GUI into image if the code cannot be organized as mentioned above
- Change the page handling so that multiple pages can be created from a single large text file instead of manually splitting the file
- Check for memory allocation issues when GUI is implemented into text handling
- Debug code and text file issues