COSC 345
Assignment 1

Max Stewart (1086706) | Elbert Alcantara (4435223) | Sarah Sarang Han (5098495)

Team Members:

- Max Stewart (1086706)
- Elbert Alcantara (4435223)
- Sarah Sarang Han (5098495)

Standard Layout:

1TBS (OTBS). We have chosen this layout as it is one that all the members on our team currently use and are familiar with so we will be able to easily integrate it in our project. We also found that it was a style that doesn't waste too many lines by having the "{“ brackets on the same line as the method declaration.

What are we building?

For our project we wanted to go back to the roots of gaming. We looked at games from the early eras (1960 to 1970) and chose to build upon the classic game ‘Minesweeper’ which first appeared within the decade. Many people have heard of minesweeper before, but never actually knew how to play the game, including our group unfortunately. Many who start playing the game simply lost interest, having no knowledge of how the game worked, and not bothering to learn since they didn’t feel motivated to do so while others assumed the game was won by chance which is quite a common misconception of the game.

This is one of the main reasons we chose the game. We want to redesign the classic game and build upon it to create a game that would capture the player’s attention, provide a motivation for them to learn the game mechanics, and to finish the game.

The main idea we have is to add a character the player will role play as and provide this character with a backstory that will prompt the player to progress further. The game is a logical puzzle which could frustrate new players mentally if they click on a mine having cleared such a large area already. The classic implementation gives the player only one lifeline, but we want to implement it in a friendlier approach, giving the player more leeway to make mistakes.

We are still currently developing the game mechanics so it has not yet been finalized at this current stage, but obviously it will mainly be the game mechanics of Minesweeper with some adjustments. We have had a few ideas such as adding points of interests in the maps that the player may want to reach in order to gain bonus lives or maybe learn more about the characters in the story. The story may also change as we progress.

STORY

The player starts out as a Mexican Father in a dystopian North America, where Donald Trump has miraculously built multiple walls. Between these walls lay innumerable amounts of mines, the largest minefield ever laid in place. Only the brave dare traverses these lands.

Unfortunately for the Mexican Father, his daughter lay in a cell in the other side of these walls, across the border, in mainland US. The thought of his daughter laying in a cell, hundreds of miles away from her family, tore him apart.

Her cell had a small window upon which she gazed through, every night, at the dazzling stars that sparkled in the sky when the sun has set. Night after night she brooded beside it before eventually crying herself to sleep.

The Father had no money, no powerful friends or allies he could rely upon, to seek aid from, no there was only one way. But there is nothing that could compel a man more to risk everything, his life, than saving his beloved child. And so, his perilous journey begins.

GAME

We will start by telling the backstory of the characters to player to gain their attention. There will be X maps that the player must traverse. Once the father reaches the end, there will be an interlude, and the story continues, and we move to the next map (crosses the second wall), which will (hopefully by implementing different shaped tiles) be more difficult, and so on and so forth, X amount of times (levels), until he is reconciled with his daughter at which point the player finishes the game.

As we go through the mine maze, we will try to evolve gameplay mechanics, so it doesn't go stale.

How are we building it?

This game will be developed in C++ using the third-party library SFML, (Simple and Fast Multimedia Library) this library contains graphics utilities to help create our program. We have chosen to use C++ as it is a language that is widely used for game development and suits our purpose well. It will also allow us to fine tune how memory is used and allocated, therefore allowing us to optimize our program. We have chosen SFML as it will abstract away many of the trivial tasks so we can focus on the overall experience. In terms of portability and compatibility, SFML will work on multiple platforms such as Windows (XP through to 10), macOS and Linux. It has integration for all OS on both 32- and 64-bit systems. This means that our final program will be easily available to most people. SFML is also written natively in C++ which means that we will be able to maximize the efficiency of our program.

To maximize efficiency and cut down on time wastage we will be splitting our year into weekly sprints. We will be splitting the tasks seen on the Gantt chart into smaller subtasks that will take one or two weeks. We will pair this with weekly meetings where we will discuss and report on our progress and plan our next steps. This will split a daunting whole year slog into smaller more achievable goals. It will allow us to manage our time more effectively and pinpoint early on if we must change our plan or divert more resources to tasks.

Who's building it?

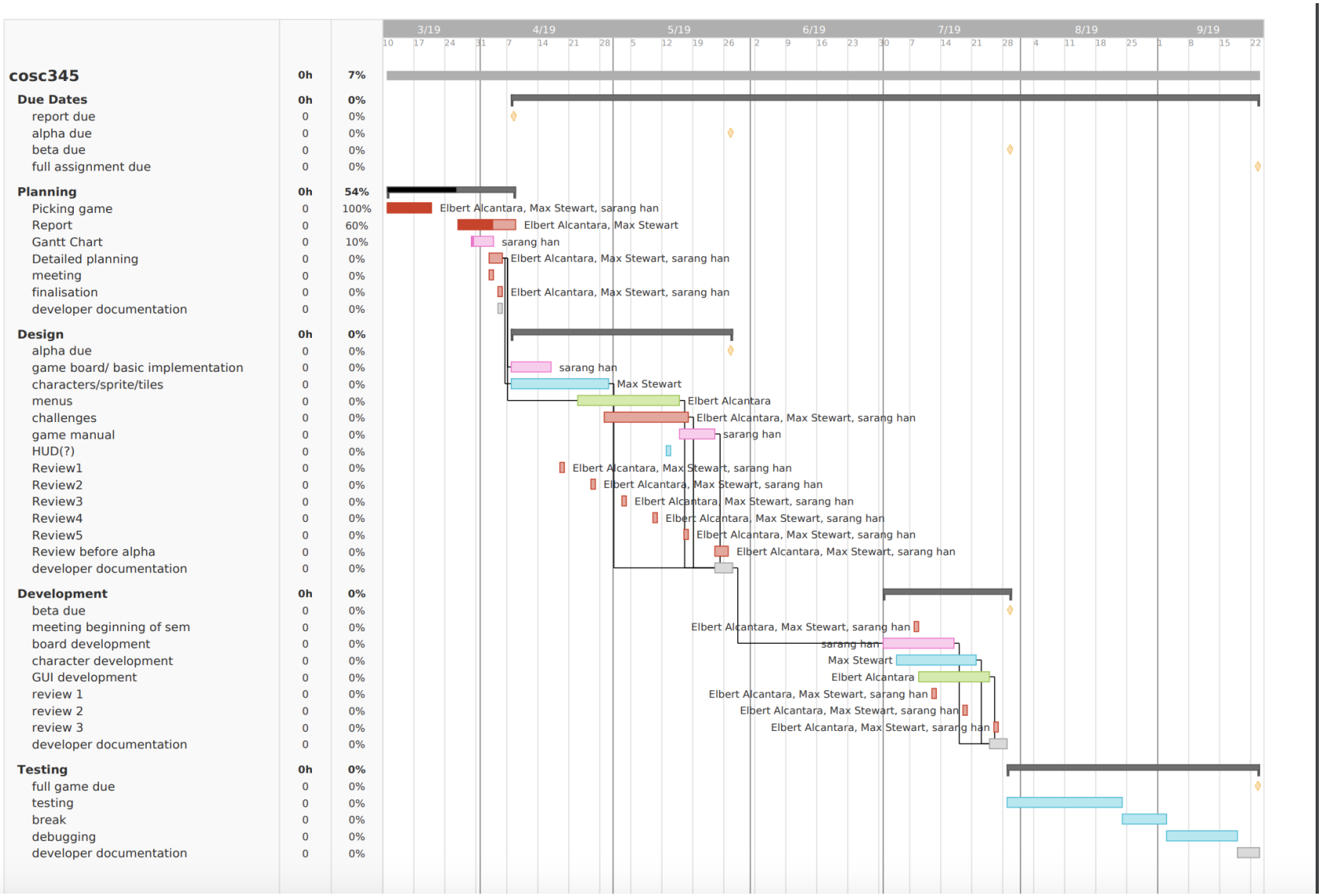
Our team consists of three members.

- **Max Stewart (1086706)** has the most experience in developing games through working for multiple game development studios. He will be using this knowledge and will be focusing on the player movement and how the character will interact with the game board. Max also will be creating level art since he is a good artist.
- **Elbert Alcantara (4435223)** will be focusing on GUI and the look and feel of the application. We have assigned Elbert to this role as he has the most knowledge and experience in using SFML so he will be able to use this knowledge to create an impressive interface. This knowledge will also help teach the rest of the team to use the SFML library during the early stages of development.
- **Sarah Sarang Han (5098495)** will be focusing on the game board and creating the algorithm that will generate a minefield with different paths through to the end goal. We

have assigned Sarah to this role as she has a background in mathematics and physics. She will draw on this prior knowledge to design efficient algorithms for our game board. Sarah will also be advising the team on the User Interface as she has a good eye for colour and contrast from having over three years of clothing retail experience. Using this experience, she will be able to offer a different outlook.

What else is there that already does this, and our program differs from those other programs:

Our game is based on minesweeper, there are many different open source projects that have based their ideas off minesweeper. A game that is similar to ours in the game on android and apple app store called Maze Frontier. This game is a 3D game that makes the player move through the levels that tell a story avoiding mines. By playing Maze Frontier we found that the mine avoidance was usually simplified, and many levels did not even have mine avoidance elements, favoring the story more. We were disappointed to see that a game that was based on minesweeper had so little mine avoidance. Our game will focus more on the mine avoidance aspect while also telling a story. We will add items in the game that will help the player and change the gameplay in different ways.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cosc345 0h 7%
Due Dates 0h 0%
report due 0 0%
alpha due 0 0%
beta due 0 0%
full assignment due 0 0%
Planning 0h 54%
Picking game 0 100%
Elbert Alcantara, Max Stewart, sarang han
Report 0 60%
Elbert Alcantara, Max Stewart
Gantt Chart 0 10%
sarang han
Detailed planning 0 0%
Elbert Alcantara, Max Stewart, sarang han
meeting 0 0%
finalisation 0 0%
Elbert Alcantara, Max Stewart, sarang han
developer documentation 0 0%
Design 0h 0%
alpha due 0 0%
game board/ basic implementation 0 0%
sarang han
characters/sprite/tiles 0 0%
Max Stewart
menus 0 0%
Elbert Alcantara
challenges 0 0%
Elbert Alcantara, Max Stewart, sarang han
game manual 0 0%
sarang han
HUD(?) 0 0%
Review1 0 0%
Elbert Alcantara, Max Stewart, sarang han
Review2 0 0%
Elbert Alcantara, Max Stewart, sarang han
Review3 0 0%
Elbert Alcantara, Max Stewart, sarang han
Review4 0 0%
Elbert Alcantara, Max Stewart, sarang han
Review5 0 0%
Elbert Alcantara, Max Stewart, sarang han
Review before alpha 0 0%
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developer documentation 0 0%
Development 0h 0%
beta due 0 0%
meeting beginning of sem 0 0%
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board development 0 0%
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character development 0 0%
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GUI development 0 0%
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review 1 0 0%
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review 2 0 0%
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developer documentation 0 0%
Testing 0h 0%
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break 0 0%
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