**Game Design Document**

**Deadline –** 10/04/2024

**Summary**

This is an isometric game that aims to teach computer science students how to solve problems using algorithms. Depending on the map, the player will be given a range of algorithms available to them, in which they must choose the appropriate one to complete their tasks efficiently.

**Minimum Viable Product**

* Completed Main Menu
* Contains one maps:
  + Farm
* Players rewarded with points after completing a task
* Difficulty increases as the game progresses, aka harder algorithms.

**Requirements fulfilment**

* Gameplay
  + Design Pillar:
    - **Farm:** This map uses the sorting and searching algorithm. The player has to manage a farm with different types of crops and animals, which are going to be transported by a truck. The player gathers what they need around the farm and brings them to the barn. Here, the player uses an appropriate sorting algorithm to sort them into different categories based on what they game wants (such as by colour, price, alphabetical , etc), and they must complete before the truck leaves. This measures the time and steps it takes for the player to sort the item. The game will also introduce different challenges, such as limited space, random items, or changing orders. The player will learn how different sorting algorithms work and compare their performance.
  + Core loop: Exploring the map, solving problems, game progression
* Game Elements
  + Post Processing
* Assets
  + There will be no background music, only environmental sounds
  + 3D models include:
    - NPC
    - Player
  + Link to UI assets: <https://www.figma.com/file/duEVpWMLZbyKoJcHdbC4wE/Algorithm-Adventure-Wireframe?type=design&node-id=0%3A1&mode=design&t=wjrqHQc4aflFT75T-1>

**Game Elements Diagram**

* Dynamics
  + Trade-offs
  + Feedback
  + Learning
* Mechanics
  + Shooting
  + Hacking
  + Puzzles
  + AI
  + Loadout System
  + Score System
* Components
  + NPCs
  + Player
  + Small attention to detail
  + Weapons

**Version Control**

**Link to GitHub:** [**https://github.com/fali0909/AlgorithmAdventure**](https://github.com/fali0909/AlgorithmAdventure)