1. **Introduction**

Farmio is a basic 2D farming simulator video game we planned to develop. The main aim of this game is to manage a farmland by planting different types of seeds, taking care of plants, gathering their grown crops to either sell or eat. If the player chooses to sell the grown crops, this will facilitate in generating income, helping the player to invest in different types of seeds to attain more money. Alternatively, the player may also choose to eat the grown crops so that the health of the farmer can be kept at its maximum. The player has to balance these two actions properly since either running out of money or worsening health means the end of the game. In other words, the game will be over when the player loses all of his/her money -and there is no investment in plants to provide income- or when the farmer represented in the game loses his/her health.

Additionally, we will implement Farmio in Java programming language by Object-Oriented Programming principles and it will be a desktop application. This report contains the game overview, basic game objects, and the basic structure of the game. Besides, we also added the functional, non-functional requirements as well as the use-case, class, activity and state diagrams.

1. **Overview**
   1. **Gameplay**

The game is played using the mouse. Some actions are to be handled through right-clicking to choose one of the several possible actions.

* 1. **Map**

The map initially consists of a farm house whose location is fixed (defined by the game). Surrounding the farm house are the “slots” of soil on which the player may plant and grow seeds depending on the type of the soil (see the next section *2.3. Soil* for details).

* 1. **Soil**

The soil slots can be considered in two different categories as “grass” and “pit”. Grasses are blocks of soil which are not suitable for planting. On the other hand, pits are the ones on which the player can plant and grow seeds.

* 1. **Store**

The player is able to buy seeds of different kinds from the store. The store, which is to be made available directly on the game screen, displays the available seeds and their respective prices as small icons.

Note that, at the beginning of a new game, the player is provided with some initial money to buy some seeds to begin planting. Except this initial money, the actual income is supposed to be generated through growing crops and selling them.

* 1. **Seeds**

The game represents strawberry, corn and sunflower seeds available for purchase at the store. These seeds differ by their growing times and prices. Having planted seeds, as long as they are watered *once* using the “watering can” tool, they grow continually and form grown crops.

* 1. **Grown Crops**

As already mentioned above, seeds produce grown crops when treated properly. These crops need to be harvested as soon as possible, otherwise they will rot, which is indicated by the change of the color of the soil.

* 1. **Harvesting**

When the seeds are grown fully and have produced grown crops, which is indicated by slots’ attaining new icons, the player is expected to harvest them. To harvest the grown crops, the player simply clicks on these new icons.

* 1. **Inventory**

The purchased seeds and collected crops appear directly on the inventory, which also is continuously accessible on the game screen for ease of use. The player can switch back and forth between both the purchased seeds to plant and also between gathered crops to eat or sell.

* 1. **Selling**

To sell the gathered crops and generate income, the player may right-click on the harvested items on the inventory to select “Sell”. Note that each crop will yield a different amount of money, depending on the kind of the seed from which it is grown.

* 1. **Farmer’s Health**

As one of the main objectives of the game, in addition to maintaining money, the player needs to keep the health of the farmer highest so as to keep the game continuing. This involves the player’s letting the farmer eat some of the gathered crops through using the inventory.

1. **Functional Requirements**
   1. **Play Game**
      1. **Start a New Game**

The player is allowed to launch a new game anytime without needing to override any previous progress. In other words, the player may maintain multiple “save files” with each having a possibly different progress.

* + 1. **Load Game**

Since the player is granted access to multiple save files as mentioned above, this will allow the player to choose and load one of the previously saved games.

* 1. **Credits**

This screen displays some information about us as the developers of the game.

* 1. **Help**

The player can access this screen to learn more about the game controls as well as the objective of the game.

* 1. **Exit Game**

The player may exit the game through this option.

1. **Non-functional Requirements**
   1. **Usability**

The game should represent an intuitively understandable user interface. More specifically, the positions of the store icon, inventory and the farmer icon should be easy to identify and convenient to interact with.

* 1. **Performance**
     1. **Response Time**

The game should respond to the input provided by the user as quickly as possible. Primarily, the images need to be updated instantly to indicate the changes the player has made, also providing a smoother gameplay.

* 1. **Supportability**

Since the player can start a new game anytime in addition to the previously saved ones (also mentioned in *1.1.1 Start a New Game*), the generation of this new game should not cause any changes to the previously saved games. That is, the game system should handle all save files separately, independent of each other.