# Manual

Because our final project is a game, the use of our code speaks for itself. However we will still explain how to get the program started and all the mechanics the player of our game should know about.

## Getting the program running

To play the game, the player must have all the documents within our zip file downloaded into the same folder. Next they should make sure pygame is installed. If they’re unsure because they have never used it before they can follow the steps explained on: <https://www.geeksforgeeks.org/how-to-install-pygame-in-windows/>   
After pygame has been installed, the file called ‘Main code.py’ can be opened on any preferred IDE. As soon as the player runs the code the game screen should open and the game can begin.

## Start screen

Once the game has been opened the start screen will be displayed with a total of six buttons, as seen in (Figure 1). The player can click on each of these buttons. The four coloured ones describe the difficulty levels, if any of these are clicked the game will start on the selected difficulty. In the top left there’s a button with which a player can immediately exit the game. In the top right corner players can find the help button, which will be displayed throughout the entire game. This will display a new screen and pause any timer while in-game.

A screenshot of a computer

Description automatically generated

Figure The start screen

## The help screen

A screenshot of a game

Description automatically generatedIf the question mark in the top right corner gets clicked on, the help screen will be displayed (Figure 2). This screen will show the player the rules of the game and give three options; returning to the game, returning to the start screen, and closing the game. These options are all buttons once more, so the player simply has the click on any of the three buttons to close the help screen and go back to any screen they want.

Figure The help screen

## The game screen

Once a difficulty has been chosen the game screen will appear (Figure 3). The idea of the game is to collect as many SET’s as possible within the time limit. To do so the cards that make a SET have to be selected, this can be done by clicking on the cards. A selected card will have a yellow edge around it, like the card in the top left in Figure 3. The player can select a total of three cards, if the player wants to deselect a card it has to be clicked on again and the yellow outline will disappear.

A screenshot of a game

Description automatically generatedOnce a player has found a SET and selected all three cards, they have to click on the submit button. The computer will then check if the selected cards are indeed a SET. If it is the player will get a point. Was the player wrong, then it’s the computer’s turn. Did the timer run out before the player was able to submit a SET, then it’s also the computer’s turn.

Figure The game screen

If it’s the computer’s turn the computer will check if there is a valid SET within the cards on the table. If there is the cards will get a blue outline (Figure 4) for three seconds so the player can see what they missed. The cards will then be removed and new cards will take their place. If there is no SET within the displayed cards the computer will remove the three cards in the right row and replace them. The timer will then start over and the player gets another turn.

A screenshot of a game

Description automatically generatedThe game continues for as long as there are cards within the stack or SET’s to find. If neither of these are the case then the game will display an end screen depending on the final result. When on that screen the player can push any button on their keyboard to return to the start screen and either start a new game or close the game.

Figure Computer's SET

## Adapting the code

The game can be adapted, however most adaptations would be quite useless. One adaptation that could be useful however would be changing the length of the timer for the different difficulties, depending on the player’s preferences. The duration of the timers can be found in line 350, 355, 360 and 365, depending on the difficulty (Figure 5). Here you can change the numer to the preferred duration in seconds, times 1000, plus 900.

Figure Determining the duration of the timer

