User Manual
Turtle Trouble

This program allows the user to control a turtle that moves on a 20 x 20 board. You can move the turtle forward any number of spaces, with the turtle stopping at the wall if you run into it. You can turn the turtle in the four cardinal directions, north, south, east, and west, allowing you to change directions. The turtle is holding a pen, which you can toggle up and down. If the pen is down, the turtle will draw on the board with the pen, leaving a certain brush stroke on the ground. There are four different selectable brush strokes you can choose from. You can also have the turtle jump to a new location by entering a specific x and y coordinate on the board. This moves the turtle, regardless of the direction it is facing, directly to that space without leaving any brush strokes in between.

1. Executing the program:

Turn on and boot your computer.

Insert the flash drive containing the program file Project1.exe in the appropriate drive. (We will assume it is the A drive, but it could be any drive. Substitute the appropriate letter where you see a:)

Enter the following at the prompt.

a:Project1

The board will appear, along with a menu which will allow you to choose what you would like the turtle to do.

2. Input

2.1 Input Requirements

All of the menu options require you to enter an integer associated with an option. The number will be next to the option it performs. To turn the turtle, you will enter the first letter of the direction you would like to turn, n, s, w, or e. For the jump option, you input the x and y coordinates, in that order, of the position you would like to jump to.

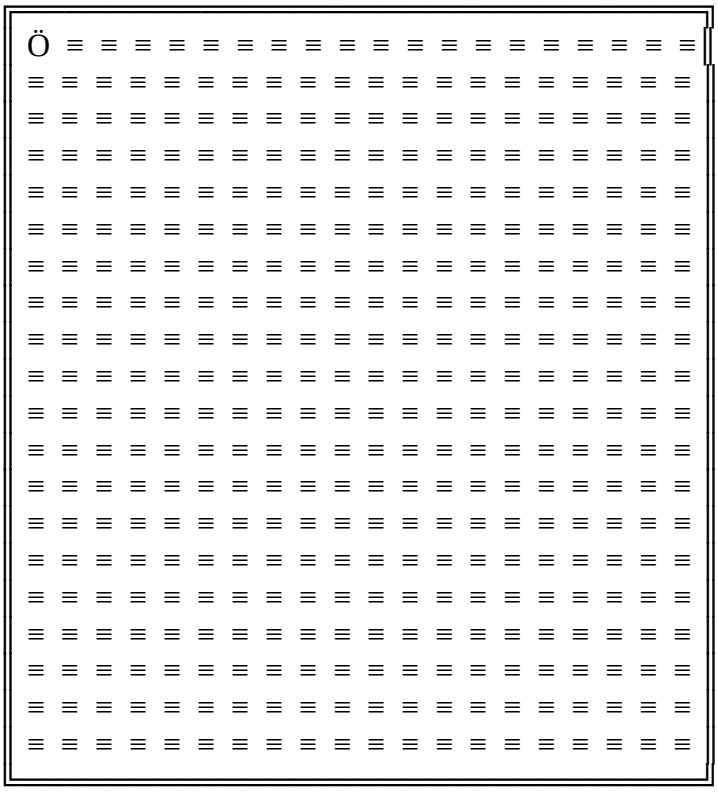
2.2 Input Restrictions

A number not associated with an option, or a letter will re prompt you to input a number for an option. A letter other than n, s, w, or e will not be considered valid to turn the turtle and you will be re prompted if anything else is entered. If the turtle is moved off of the board, either by the move option or the jump option, the move will still occur, but the turtle will hit the wall at the maximum number of spaces allowed by the size of the board.

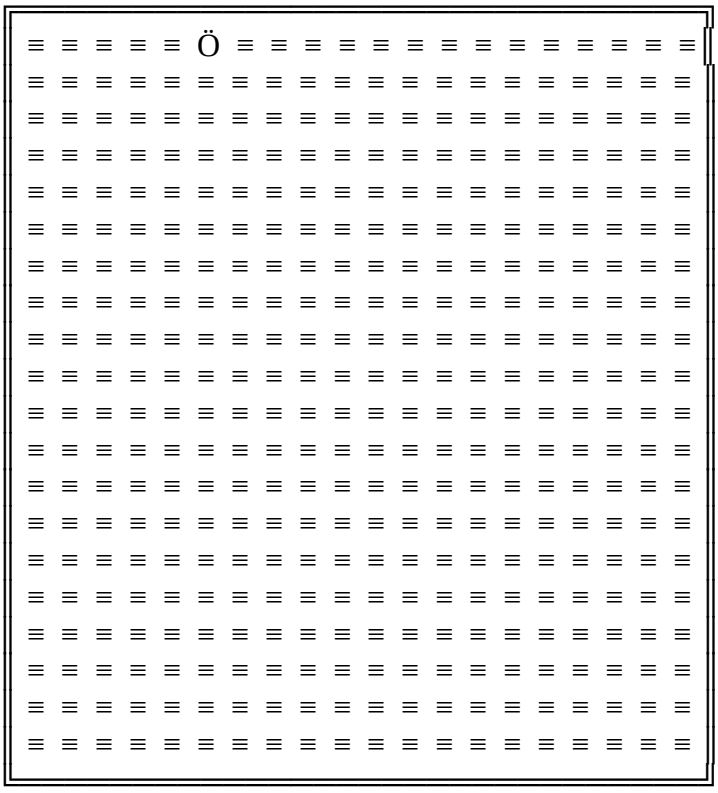
3. Output

The output will be the menu printed out again. An option allows you to output the updated board with any new movements or drawings appearing on the board.

Example Run



The turtle is at position (0, 0)
The turtle is facing east
The turtle's pen is up.
1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program
Enter your option: 3
How many spaces would you like to move?: 5
The turtle is at position (5, 0)
The turtle is facing east
The turtle's pen is up.
1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program
Enter your option: 4



The turtle is at position (5, 0)
The turtle is facing east
The turtle's pen is up.

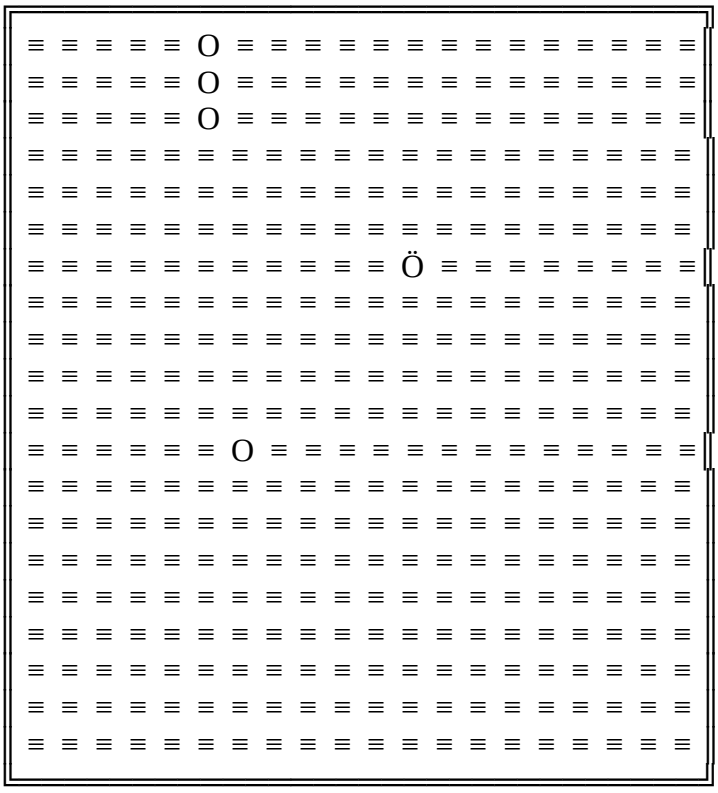
1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program

Enter your option: 1
The turtle is at position (5, 0)
The turtle is facing east
The turtle's pen is down.

1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program

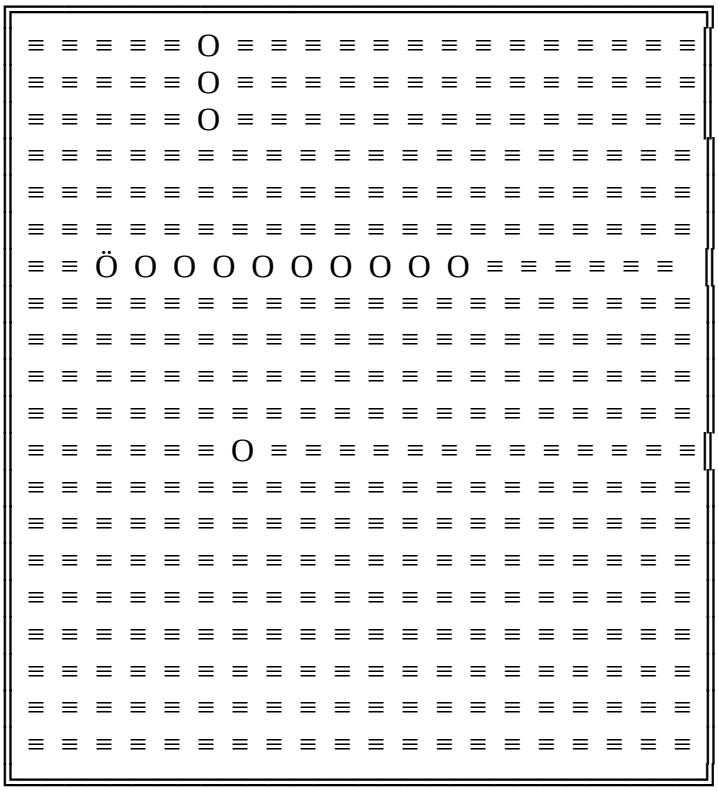
Enter your option: 2
Which direction would you like to move (n, s, w, e)?: s

```
The turtle is at position (5, 0)
The turtle is facing south
The turtle's pen is down.
1	change pen position
2	turn
3	move forward
4	print
5	change brush
6	erase/start over
7	jump
8	see menu again
9	end program
Enter your option: 3
How many spaces would you like to move?: 3
The turtle is at position (5, 3)
The turtle is facing south
The turtle's pen is down.
1	change pen position
2	turn
3	move forward
4	print
5	change brush
6	erase/start over
7	jump
8	see menu again
9	end program
Enter your option: 7
Enter the x and y coordinates to jump to:
11 6
The turtle is at position (11, 6)
The turtle is facing south
The turtle's pen is down.
1	change pen position
2	turn
3	move forward
4	print
5	change brush
6	erase/start over
7	jump
8	see menu again
9	end program
Enter your option: 4
```



The turtle is at position (11, 6)
The turtle is facing south
The turtle's pen is down.
1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program
Enter your option: 2
Which direction would you like to move (n, s, w, e)?: w
The turtle is at position (11, 6)
The turtle is facing west
The turtle's pen is down.
1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program
Enter your option: 3

How many spaces would you like to move?: 9
The turtle is at position (2, 6)
The turtle is facing west
The turtle's pen is down.
1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program
Enter your option: 4



The turtle is at position (2, 6)
The turtle is facing west
The turtle's pen is down.
1 change pen position
2 turn
3 move forward
4 print
5 change brush
6 erase/start over
7 jump
8 see menu again
9 end program
Enter your option: 9