

## TOY ROBOT CODE CHALLENGE ASSIGNMENT

PROGRAMMING LANGUAGE USED: C# and .Net

### HOW TO RUN THE PROGRAMME

STEP01 Open the folder win-x64, which is located under the path application/bin/Release/net8.0/

STEP02 Double-click the executable file name "app.exe" to launch the programme

WARING: Your computer should have .NET runtime before running the system.

STEP03 Enter the command by starting with "PLACE" and following the location and direction of the robot when placed on the 5x5 unit square table

STEP04 Entering a single command, which consists of MOVE, which is used to move forward, LEFT and RIGHT, which are used to rotate the robot 90 degrees in the specified direction, and REPORT, which is used to print the output

**UNIT TESTING** used to verify the individual units or components of a software application work correctly

01. Test for entering the wrong format of the starting command that is not PLACE with a capital letter. The system will show the error message and let the user input again until they get the correct format.

Case of input empty space and entering a new line

```
WELCOME!
TOY ROBOT SIMULATOR SYSTEM

note: to exit the system please write EXIT

[INPUT: 
ERROR! PLEASE INPUT THE INFORMATION

[INPUT: 
ERROR! PLEASE INPUT THE INFORMATION

INPUT: 
```

Case of input wrong wording

```
WELCOME!
TOY ROBOT SIMULATOR SYSTEM

note: to exit the system please write EXIT

[INPUT: HI
ERROR! PLEASE INPUT THE CORRECT FORMAT

[INPUT: place
ERROR! PLEASE INPUT THE CORRECT FORMAT

INPUT: 
```

## Case of input in the wrong format of a command

```
WELCOME!
TOY ROBOT SIMULATOR SYSTEM

note: to exit the system please write EXIT

[INPUT: PLACE
ERROR! INVALID PLACE COMMAND FORMAT

[INPUT: PLACE , ,
ERROR! INVALID PLACE COMMAND FORMAT

[INPUT: PLACE A,0,C
ERROR! INVALID PLACE COMMAND FORMAT

[INPUT: PLACE 0,V,C
ERROR! INVALID PLACE COMMAND FORMAT

[INPUT: PLACE 0,0,
ERROR! INVALID PLACE COMMAND FORMAT

[INPUT: PLACE 0,0,G
ERROR! INVALID PLACE COMMAND FORMAT

[INPUT: PLACE 0,0,NORT
ERROR! INVALID PLACE COMMAND FORMAT
```

02. Test for entering the wrong format of command after inputting the starting command correctly. The system will show the error message and let the user input again until they get the correct format.

Case of input empty space, entering a new line, wrong wording, and not being a capital letter

```
WELCOME!
TOY ROBOT SIMULATOR SYSTEM

note: to exit the system please write EXIT

[INPUT: PLACE 0,0,NORTH

ERROR! PLEASE INPUT THE INFORMATION

[
ERROR! PLEASE INPUT THE INFORMATION

[HI
ERROR! INVALID COMMAND

[move
ERROR! INVALID COMMAND

[move left right
ERROR! INVALID COMMAND

[report
ERROR! INVALID COMMAND

[MOVE
[MOVE
[LEFT
[right
ERROR! INVALID COMMAND

[REPORT
OUTPUT: 0,2,WEST

INPUT: █
```



03. Test for entering the wrong format of command when you want to close the system.

```
WELCOME!
TOY ROBOT SIMULATOR SYSTEM

note: to exit the system please write EXIT

[INPUT: PLACE 0,0,NORTH
[MOVE
[REPORT
OUTPUT: 0,1,NORTH

[INPUT: exit
ERROR! PLEASE INPUT THE CORRECT FORMAT

INPUT: █
```

**INTEGRATION TESTING** used to demonstrate how different units or components of a software application work together as expected

01. Test the workings of the system by using examples as shown within the description document.

```
WELCOME!
TOY ROBOT SIMULATOR SYSTEM

note: to exit the system please write EXIT

[INPUT: PLACE 0,0,NORTH
[MOVE
[REPORT
OUTPUT: 0,1,NORTH

[INPUT: PLACE 0,0,NORTH
[LEFT
[REPORT
OUTPUT: 0,0,WEST

[INPUT: PLACE 1,2,EAST
[MOVE
[MOVE
[LEFT
[MOVE
[REPORT
OUTPUT: 3,3,NORTH

[INPUT: EXIT

Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]█
```



02. Test the working of the system in the case of just using the command REPORT to print the result without calling any command.

```

WELCOME!
TOY ROBOT SIMULATOR SYSTEM

note: to exit the system please write EXIT

[INPUT: PLACE 0,0,NORTH
[REPORT
OUTPUT: 0,0,NORTH

[INPUT: EXIT

Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

03. Test the workings of the system in the own case of the developer, which will be used to check the overall correctness of the system.

<pre> WELCOME! TOY ROBOT SIMULATOR SYSTEM  note: to exit the system please write EXIT  INPUT: PLACE 0,0,NORTH [MOVE [MOVE [MOVE [RIGHT [MOVE [MOVE [MOVE [MOVE [REPORT [OUTPUT: 3,3,EAST  INPUT: PLACE 2,4,SOUTH [MOVE [RIGHT [MOVE [LEFT [LEFT [LEFT [LEFT [MOVE [MOVE [RIGHT [REPORT [OUTPUT: 0,3,NORTH </pre>	<pre> INPUT: PLACE 0,5,NORTH [MOVE [MOVE [REPORT [OUTPUT: 0,5,NORTH  INPUT: PLACE 5,0,EAST [MOVE [MOVE [REPORT [OUTPUT: 5,0,EAST  INPUT: PLACE 5,5,NORTH [MOVE [REPORT [OUTPUT: 5,5,NORTH  INPUT: EXIT [ Saving session... ...copying shared history... ...saving history...truncating history files... ...completed.  [Process completed]</pre>
--	--

