Dots & Boxes User Manual

Note: Prior to running the program, make sure to have the "Assemble all files in directory" option enabled in settings. To get started, simply assemble and run the "main.asm" file.

Warning: Do not clear the I/O stream while the game is running. Properly stop the program then you can clear the I/O stream.

[Video Demonstration](#)

- You, the user, will be shown a blank board and prompted to input the row and column you wish to place your line. Rows and columns start at the value '0' and end at values 12 and 16 respectively.

```
    0   2  4  6  8  10 12 14 16
0 + + + + + + + + +

2 + + + + + + + + +

4 + + + + + + + + +

6 + + + + + + + + +

8 + + + + + + + + +

10 + + + + + + + + +

12 + + + + + + + + +
    Enter the row:
    Enter the column:
```

- You can only place lines between the dots and are prevented from placing lines where one already exists.

```
+ + + + + + + +          + + + + + + + +
                         |
+ + + + + + + +          + + + + + + + +

+ + + + + + + +          + + + + + + + +

+ + + + + + + +          + + + + + + + +

+ + + + + + + +          + + + + + + + +
```

```
+ + + + + + + +                    + + + + + + + +

+ + + + + + + +                    + + + + + + + +
Enter the row: 1                   Enter the row: 1
Enter the column: 1                Enter the column: 0
Invalid input.                     Repeated input.
Please enter a valid value.        Please enter a valid value.
Enter the row:                     Enter the row:
Enter the column:                  Enter the column:
```

- Your goal is to create more boxes than your opponent, the computer. Whenever a player creates a box, they will gain a point and that box will be flagged by whoever created it ('P' for the user and 'C' for the computer). Additionally, whenever a player creates a box, they gain an extra turn.

```
+-+ + + + + + + +
|P|
+-+ + + + + + + +

+ + + + + + + +
|
+ +-+ +-+ + + + +
      |C|
+ + + +-+ +-+ + +

+ + + + + + + +

+ + + + + + + +
Enter the row:
Enter the column:
```

- The game ends when there are no more moves left. The player with the most boxes wins (or ties if both players have the same score).

```
+-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+
|P|P|P|P|P|P|P|P|      |C|C|C|C|C|C|C|C|      |P|P|P|P|P|P|P|P|
+-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+
|P|P|P|P|P|P|P|P|      |C|C|C|C|C|C|C|C|      |C|C|C|C|C|C|C|C|
+-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+
|P|P|P|P|P|P|P|P|      |C|C|C|C|C|C|C|C|      |P|P|P|P|P|P|P|P|
+-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+
|P|P|P|P|P|P|P|P|      |C|C|C|C|C|C|C|C|      |C|C|C|C|C|C|C|C|
+-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+
|P|P|P|P|P|P|P|P|      |C|C|C|C|C|C|C|C|      |P|P|P|P|P|P|P|P|
+-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+      +-+-+-+-+-+-+-+-+
|P|P|P|P|P|P|P|P|      |C|C|C|C|C|C|C|C|      |C|C|C|C|C|C|C|C|
```

```
+-+-+-+-+-+-+-+-+        +-+-+-+-+-+-+-+-+        +-+-+-+-+-+-+-+-+

Game Over!              Game Over!              Game Over!
User Score: 48          User Score: 0          User Score: 24
Computer Score: 0       Computer Score: 48Computer Score: 24
Winner: User        Winner: Computer        Winner: Tie
```