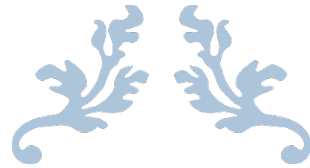


Faculty of Engineering, Cairo University  
Machine Intelligence Project



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# COMMUNICATION RULES SIGNED AGREEMENT

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# COMMUNICATION RULES

## SIGNED AGREEMENT

### Network and Protocol

1. The two PCs will be connected using Ethernet cable creating a local area network (LAN).
2. The protocol to be used will be the internet protocol version 4 (TCP/IPv4).
3. Both teams are allowed to choose their IP addresses as long as no conflict occurs but they have to maintain one subnet mask which is 255.255.255.0.
4. The IP addresses must be shared between the two teams.
5. Stream sockets will be used for sending and receiving data.
6. The port number is 11000.

### Communication Scenarios

1. One player will start the game session and wait for the other to join.
2. Once the second player join the game both players have to record the starting time in the log file using this format **(hh:mm:ss Game started) e.g. 11:30:07 Game started.**
3. The player who started the game session will be considered as player one and the one who joins the game will be considered as player two. Both teams are permitted to choose any desired path to be displayed on the screen, but while communicating with the other team the logic must maintain the same and the logic agreed on is that player one's goal is a **horizontal path (2 vertical sides)** and player two's goal is a **vertical path (2 horizontal sides)**.
4. The player who has the turn has to send the coordinates of his move as a byte array containing string value in the form => **"row,column"**. He sends the row and the column and wait for an acknowledgment.
5. After receiving the acknowledgment the data sent must be recorded in the log file using this format **(hh:mm:ss (row,col) sent) e.g. 11:30:42 (3,6) sent**

6. The Player waiting for a move from the other player will receive the coordinates of the other player's move as a byte array containing string value in the form => "**row,column**". He receives the row and the column and send an acknowledgement.
7. After sending the acknowledgment, the data received must be recorded in the log file using this format **(hh:mm:ss (row,col) received)** e.g. **11:30:42 (3,6) received**
8. The integer value of the coordinates may take the values from 0 to 10 as we have 11 cells in each row and 11 cells in each column, except in the first move of the second player, the value -1 can exist.
9. In the first move of the second player, he may send the values -1 and -1 for row and column respectively and this means that he wants to take the move of the first player. In this situation there is no need for swapping goals, cell's position or color of cell, both players just change their colors in the upcoming turns. For example, if player one's cells are **(Blue)** and player two's cells are **(Red)**. After player one's turn, player two swaps (No change in appearance of the board, but sends "**-1,-1**"). Player one receives the "**-1,-1**" and his upcoming cells will become **(Red)**. After player two receives the acknowledgement, the current cell on the board will belong to player two's upcoming color which will become **(Blue)**.
10. (0,0) coordinates represents the cell in the upper left corner. (10,10) coordinate represents the cell in the lower right corner.
11. No Player is allowed to send coordinates of a cell that is already taken by him or by the other player, otherwise the game ends and he lose immediately.
12. These rules cannot be modified without the approval of the two teams' leaders and the teams responsible for communication in both groups.

## Signatures

Hexa-Bot Team Leader

Hex Team Leader

Teaching Assistant

Ahmed Hassan

Ahmed Adel

Yehia zakaria

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