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User Manual

1. Upload all the files in the term project folder to MARS. To upload the files, click on File -> Open, then find the folder. Make sure that you have uploaded all the files mentioned below:

   - main.asm

   - board.asm

   - game_logic.asm

   - input.asm

   - timer.asm

   - Syscalls.asm

2. Click on Settings, and make sure "Initialize Program Counter to global 'main' if defined" has a checkmark next to it. If not, select that option.

3. Go to the main.asm tab, then click on File -> Save All. If the files are not saved, we cannot assemble the program.

4. Still on the main.asm tab, Click on Run -> Assemble. You should see the message "Assemble: operation completed successfully.".

5. Click on the green circle with a white sideways triangle (run current program) button to start the program. You then should see a 4x4 grid formed with question marks in each of

the cells. Above the grid, you should see the strings "Time elapsed: " and "Unmatched cards left: ". Below the grid, you should see a string saying "Pick a card index (0-15): ".

6. Type the index number of the card you want to select from 0 to 15. Index 0 is the card in the left top corner and Index 15 is the card in the bottom right corner. The number order goes from left to right, row by row.

7. Once you select an index number, it will create another grid, flip the card that you selected, display the elapsed time, and prompt you to pick another card index from 0 to 15. Enter another number than your first guess from 0 to 15.

8. After you select the second card, it will create another grid, displaying both the flipped cards, the elapsed time, and whether it was a match or not. If it wasn't a match, the "Unmatched cards left: " counter will remain the same and it will create a new grid identical to the previous turns grid. If it was a match, the counter would decrease by 2, and the cards that were matched would remain flipped up in the grid.

9. Repeat steps 6-8 until all the cards are matched. You will receive an error message if you try to select a card that is already flipped up or if the number is not between 0 - 15.

10. Once all the cards are matched, you will receive a message saying "Well Done! You finished in XX:XX which is the final time. The program is then finished running.