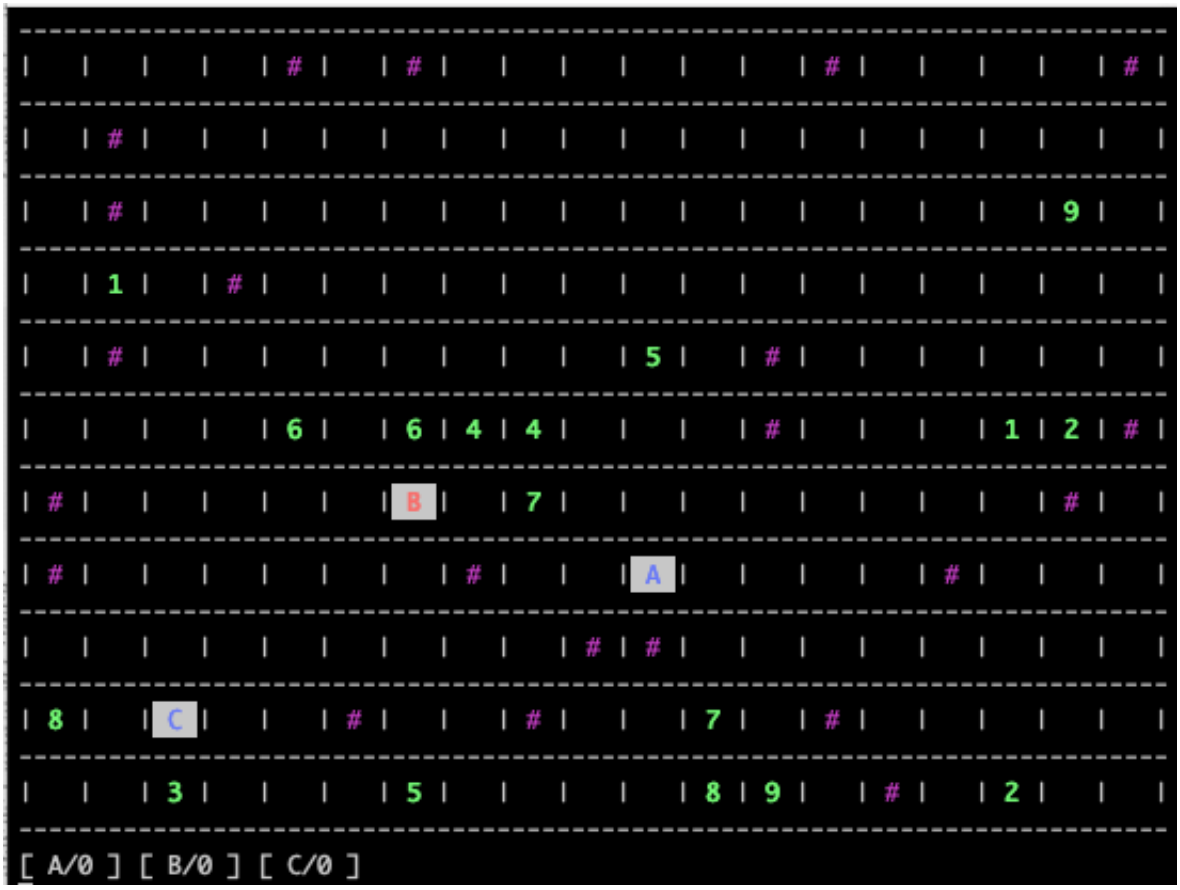
School of Computer Science, McGill University
COMP-512 Distributed Systems

TreasureIsland UserGuide



LEGEND

All players (pirates) are represented using the characters **A** - **J** corresponding to their player number (i.e., player number 1 $\rightarrow$ **A**, and so forth). You can also quickly identify your pirate's character by the color scheme. It will be red for your pirate and blue for all the other pirates.

All the treasures in the island is represented by a number (in green) that is worth it's value.

Cells that are not accessible (barriers) are represented by the # character (in purple).

User Interface

Moving Your Pirate Around

Pirates can move around freely, other than into a cell that contains a barrier (#) or another pirate. When a pirate moves into a cell containing a treasure, the points represented by that number gets added into the pirate's point tally displayed at the bottom of the game.

The following commands can be typed on your console (to be followed by the *ENTER* key), in order to move around your pirate.

L → Moves your pirate one cell to the left.

R → Moves your pirate one cell to the right.

U → Moves your pirate one cell to the top.

D → Moves your pirate one cell to the bottom.

The cells along the edge of the island have some teleportation capabilities. I.e., if you try to "fall off" the right edge, you will find yourself back on the left most cell, etc. If you try to make a move that is not allowed (like into a barrier or another pirate), the game will just ignore your move by itself. So you need not worry about this. We also do not have a **GAME OVER** mode. I.e., even if all the treasures are taken up, the pirates are free to roam around the island and chill.

Terminating Your Game

E → Allows for a graceful shutdown of the game. Your game instance will broadcast its intend to shutdown to all of the other game instances (used by other players). Each player has to shut down their own instance.

Simulating Failures

If you want your game's process to "fail" at specific points in the communication process, in order to test different failure aspects of your Paxos implementations, the following commands can be used.

FI → Immediate termination / failure of the process.

FRP → The process is supposed to fail immediately when it receives a propose message.

FSV → The process is supposed to fail immediately after it sends a vote (promise or refuse) for leader election.

FSP → The process is supposed to fail immediately after it sends a proposal to become leader.

FOL → The process is supposed to fail immediately after a majority has accepted it as the leader.

FMV → The process is supposed to fail immediately after a majority has accepted it's proposed value.

NOTE:- Other than **FI**, the other fail emulations will require YOU to call the *FailCheck* API at the appropriate part of your source code logic of Paxos. Please refer to the **GettingStarted.pdf** for details.

Please note that this is not an exhaustive list of failures that can happen within Paxos, it is just the primary ones that we will be explicitly testing to see how robust your implementation is. You are free to test and debug additional fail points as needed.

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