**Testing and Reflections**

Based on the input we see the program run the following ways:

**Queue**

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| fred6 won against john7  hgo6 won against mary56  oemje10 won against oweng9  fred6 won against yu90  hgo6 won against oemje10  fred6 won against hgo6  The Tournament Champion is: fred6  Total Games Played: 6  The average number of Games Played: 0.86  fred6 played 3 games.  john7 played 1 games.  mary56 played 1 games.  hgo6 played 3 games.  oemje10 played 2 games.  oweng9 played 1 games.  yu90 played 1 games |

**Stack**

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| --- |
| oweng9 won against yu90  oemje10 won against oweng9  hgo6 won against oemje10  hgo6 won against mary56  hgo6 won against john7  fred6 won against hgo6  The Tournament Champion is: fred6  Total Games Played: 6  The average number of Games Played: 0.86  fred6 played 1 games.  john7 played 1 games.  mary56 played 1 games.  hgo6 played 4 games.  oemje10 played 2 games.  oweng9 played 2 games.  yu90 played 1 games |

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What differences did you see?

The queue has a better distribution that is more players were involved in the tournament whereas the stack involved the same individual over and over until they lost.

How do these differences help you understand a Queue or a Stack better?

The

Is there a significant difference with different numbers of players?

What about when there are only a few players?

What about when there are a large number of players?

Persuasive Argument:

**Errors**

Error: Computer does not generate a correct queue when the last item in the queue is a hit

An error in computer.cpp's logic causes the error as Project 2 C and Project 2 B fail equally, with the task – we also see that STL Queue and the self created Queue are equally functional however, when creating the Queue and the removal of items from the Queue.

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| Based on this map:  0 1 2 3 4 5 6 7 8 9  A o o o o o o o o o o  B o o o o o o o o o o  C o o o o o o o o o o  D S S S S S o o o o o  E S S S S S o o o o o  F o S S S S o o o o o  G o o o S S o o o o o  H o o o o S o o o o o  I o o o o o o o o o o  J o o o o o o o o o o    ~~~~~~~~~~~~~~~~~~  //Random Guess Results in Hit  Random Guess: D 2  Computer Guessed: D 2  Computer player: Hit    //Queue is created with (Up, Right, Down, Left):  //C 2  //D 3  //E 2  //D 1  Queue Size: 4  Computer Guessed: C 2  Computer player: Miss    //Remove C2 and guess next  Queue Size: 3  Computer Guessed: D 3  Computer player: Hit    //Remove D3 and guess next  Queue Size: 2  Computer Guessed: E 2  Computer player: Hit    //Remove E2 and guess next  Queue Size: 1  Computer Guessed: D 1  Computer player: Hit  //D1 results in a hit on last item in queue  //Create new Queue (Up, Right, Down, Left):  Queue Size: 4  Computer Guessed: E 1  Computer player: Hit    Queue Size: 1  Computer Guessed: D 0  Computer player: Hit |

Error: Human player wins after seventeen turns (number of total ship sections)

A proper check for the human player and computer player is performed to make sure that when checkPosition results in a hit you subtract one from shipsectionsleft for the appropriate player.

The error exists when you keep attacking the same "H" section of map – so essentially if you keep hitting the same area of the map because the checkPosition was returning H for a section of map hit multiple times. Altered checkPosition function to return "Already" if area was already attacked.