Orion Bot

Team 4

Anastasia Borissova,

Joe Ha, Asma Omar

Team Photo

Prior Work

- Experience playing video and board games similar to StarCraft II
- Understanding of basic gaming algorithms from taking CMPUT 355

Our Approach

Research

Implementation

Evaluation

Research

Focus on the rush strategies

12 Marines

6 Rax

1v1v1 (All in)

1

Rush Strategies

12 Marines

- Attack at the 4:30 mark
- Produce as many Marines as possible
- Uses all SCVs available to tank damage
- MULEs support production for the Barracks

Basic Build Order:

1. Supply Depot (1)
2. Barracks (1 – 3)
3. Cut SCV production, produce Marines
4. Orbital Command Upgrade
   4.1. Calldown: Extra Supplies & Calldown: MULE

SCVs and Marines attacking
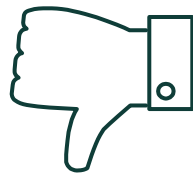
SCVs scouting

12 Marines

- Best against Protoss
- Use SCVs as tanks
- Early scouting
- Good choke point defense
- Early attack

- Worst against Zerg
- Very risky
- Hard to win if rush unsuccessful
- Poor defense
- Bug in SC2API made it impossible to implement exactly

12 Marines Results

12 Marines	Difficulty		
Enemy	Easy	Medium	Hard
Zerg	20/20	18/20	2/20
Protoss	20/20	20/20	15/20
Terran	20/20	19/20	11/20

6 Rax

- Produce as many Marines as possible.
- Attack when we have enough marines.
- Base expansion and choke point act as defense.
- MULEs support production for the Barracks

Basic Build Order:

1. Supply Depot(1) @ the choke point
2. Barracks(1) @ the choke point
3. Produce Marines
4. Orbital Command Upgrade
    4.1. Calldown: Extra Supplies & Calldown: MULE
5. Base expansion
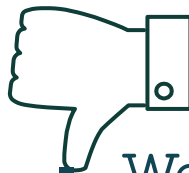
Choke Point

Marines Attacking

6 Rax Results

6 Rax	Difficulty		
Enemy	Easy	Medium	Hard
Zerg	20/20	18/20	12/20
Protoss	20/20	18/20	6/20
Terran	20/20	18/20	8/20

6 Rax

Best against Zerg
- Marines stronger together
- Good choke point defense
- Early attack
- Early expansion

- Worst against Protoss
- Poor later in game
- Poor defense if choke point structures are destroy

Build Order

- Supply Depots
- Refineries
- Barracks w/ Reactor
- Orbital Command
- Starport w/ Techlab
- Factory w/ Techlab

1v1v1: Army Build

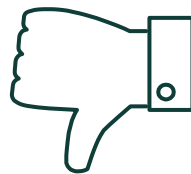| Marines | (1) Hellion | (2) Banshees | Siege Tanks |

1v1v1 (All in) Strategy

1v1v1 (All in)

- Variety of units.
- Can handle enemy expansion.
- Strong when all units attack together.

- Slower to build up.
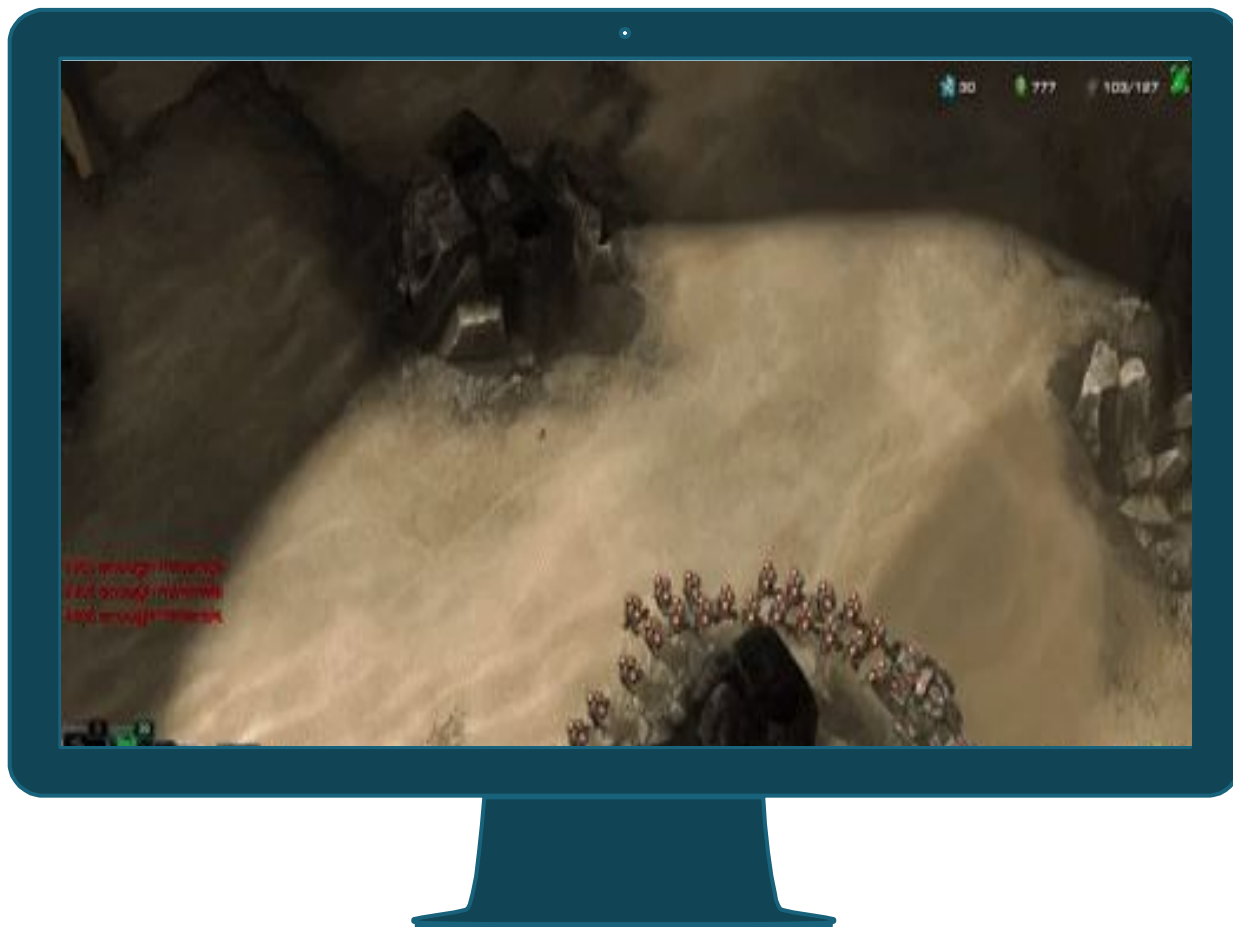- Not enough gas for both banshee and siege tanks.

1v1v1 (All in) Results

1v1v1	Difficulty		
Enemy	Easy	Medium	Hard
Zerg	20/20	13/20	3/20
Protoss	20/20	18/20	7/20
Terran	20/20	19/20	11/20

2

Combining Strategies

Orion Bot Final Strategy

Orion Bot Final Strategy

Build Order

- Supply Depots
- Barracks
- Orbital Command
- Marines
- Factory w/ tech lab
- Siege tanks
- Starport w/ tech lab
- Banshee

Strategy Details

- Build at the choke point for defense.
- Base expansion
- Siege tanks for defence/attack
- Early Attack
- Stronger Units

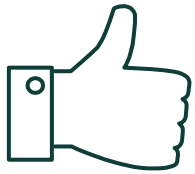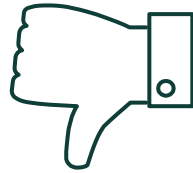# Final Statistics

Orion Bot	Difficulty		
Enemy	Easy	Medium	Hard
Zerg	20/20	20/20	13/20
Protoss	20/20	20/20	15/20
Terran	20/20	20/20	11/20

Pros & Cons

- Orbital Command Center
- Choke Point Expansion
- Stronger Units

- Poor late game performance
- Delay due to building placement
- Siege tanks are resource intensive.
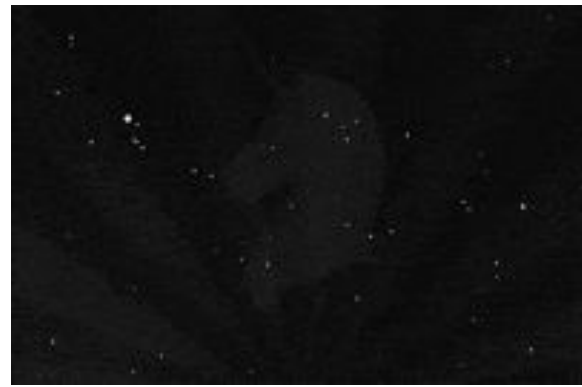
3

Reflection

Challenges

- Lack of prior starcraft knowledge.
- It was hard to understand the SC2 API.
- Calling more than one call downs on onidle.

WHEN LIFE GIVES YOU LEMONS...

Future Work

- Explore other unit types and structure types to see if they offer any additional benefits.

- Better worker management.

- Scanner sweep could be utilized instead of sending scvs to determine the enemy location.

Future Work

- Use a priority queue to keep track of build orders instead of switch statements.

- Implement healing functionality for our structures/units to recover quickly after an attack.

THANKS!

Any questions?

References

- https://liquipedia.net/starcraft2/12_Marines_@4:30
- https://liquipedia.net/starcraft2/6Rax_Allin
- https://liquipedia.net/starcraft2/1/1/1_Build/Banshee_into_Siege_Tech_All-in
- https://github.com/Blizzard/s2client-api