

MICHIGAN STATE
UNIVERSITY

Alpha Presentation

BAPS 2: Battle Aircraft Position Share 2

The Capstone Experience

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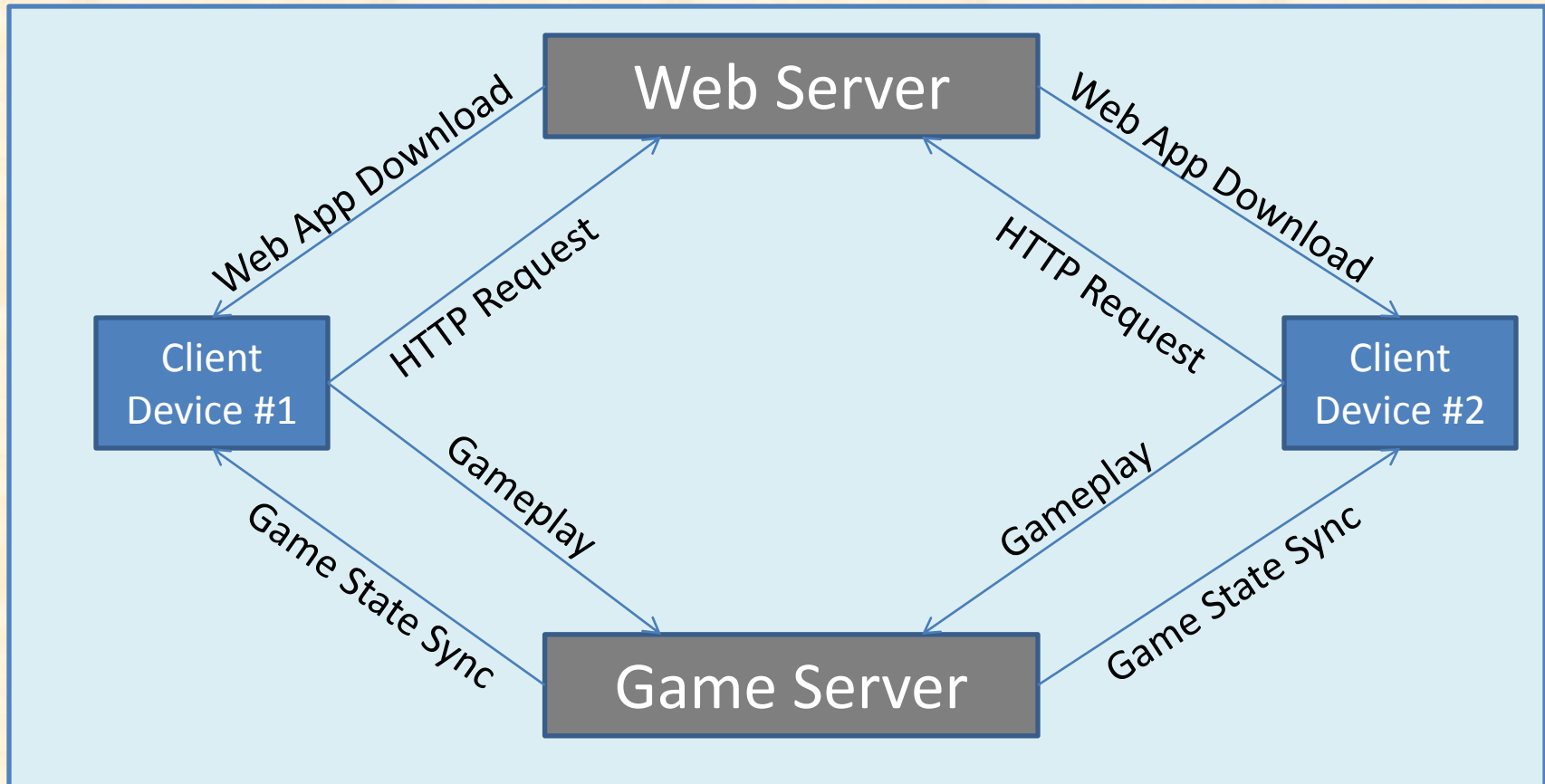
*From Students...
...to Professionals*

Project Overview

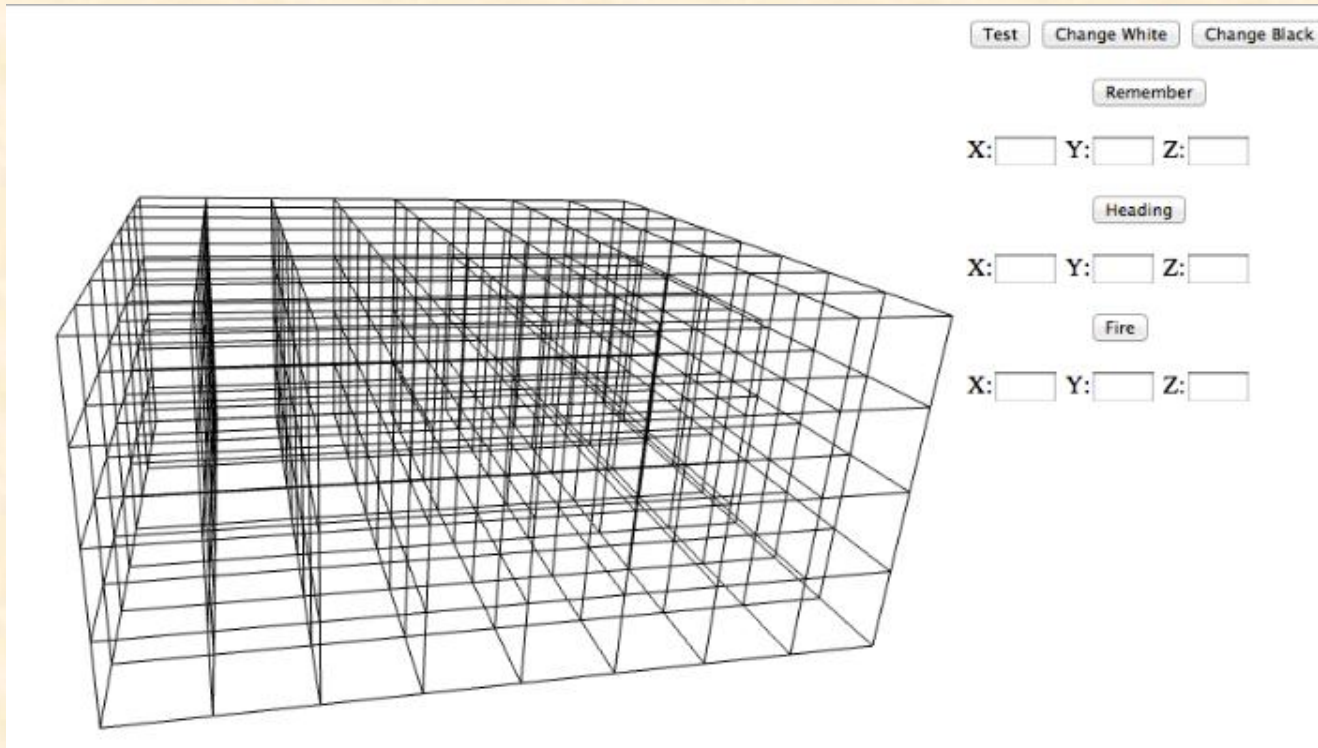
- Players compete in a 3D arena, seeking out and destroying opposing targets
- Players have the option of utilizing one of several cyber defense strategies
- Players must command an entire fleet consisting of planes and technology centers
- A player wins the game by destroying all opposing targets
- Played in a universal web app



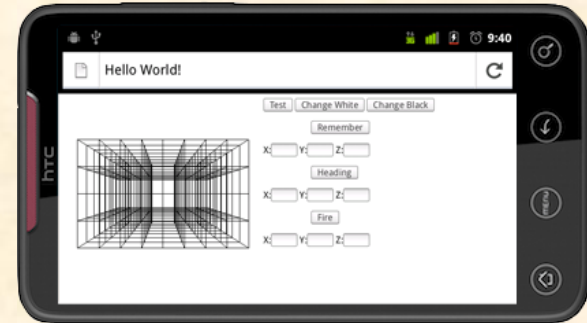
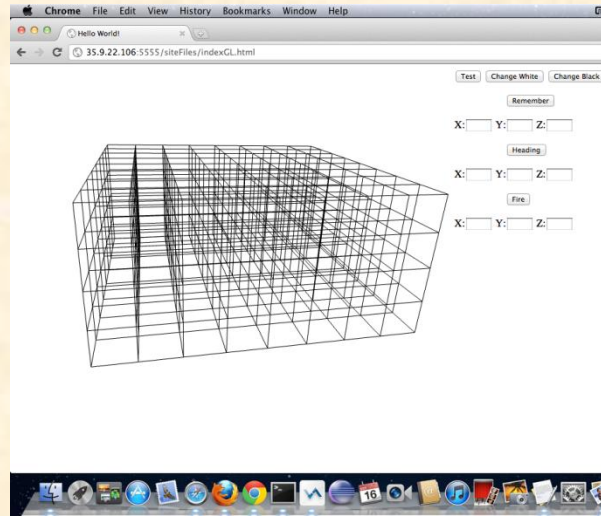
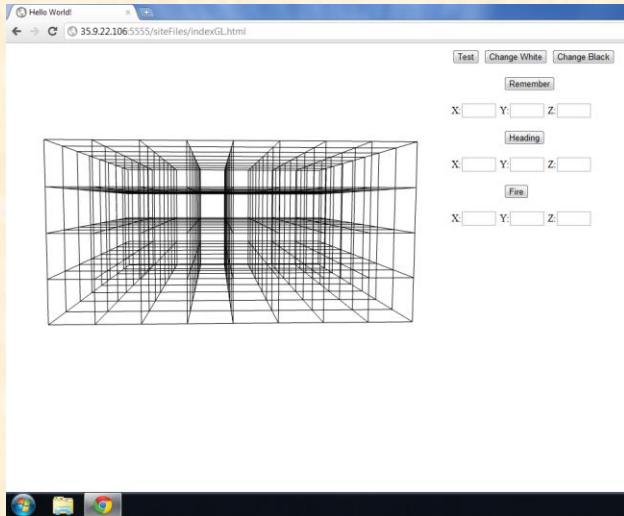
System Architecture



WebGL



Cross Platform



Encryption

```
File Edit Options Buffers Tools Help
Generating Public/Private Keys:
-----
Generating: p,q
Generating: u
Generating: d
-----
Done With Generation.
-----
Can encrypt? True
Has Private? True
Maximum string size: 255.0
-----
ENCRYPTION DECRYPTION SESSION:
-----
-----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEAI14qJb0b0675UX3y/ps5QaBjF610SU+ /P3hZsgawUihjQur
Oxd8w0kV6e+89koW5LLB8eCA30efvJpx+42d3GvVwpD7qf70dV1u+89Qv0+Dep
jv+7xpCoA2yK66nb2eXX4CZIdwDkP+eL5CYHQtrfSQwMRUo7whxDRrAxf29B5
BB+XSVpCU9AZP56v6Rah0e/NVNH4Vr1G25R0ZymlF5mJjCSy6/KiTnt4U/Q3/P3
GIER0N3PzgwPhP+S12tK479sxZ6hAORS8/GXVaInfQZyJMS14Urf3vXAKV0e7rz3
L3cZPbXU5442Vntc9WHz45z8Z4CU3LP2ZrEc4wIDAQABoIBABEU0QqX1CTUNhX
4HtY3Gbfj1WqB8pYQBPHh2outYgyXcHimBktdnbjL/LGdbYHtHh30R-ZSXZ2nh0
3q8ToVZPfaag+G0KUCGNBCYjHhKkMl4J1CSZa55u7TEPzHmE6ZUkS4MNXFZZAf
4oisbQl8jVefyWmdeBebZfyku1RjL1b0h9hXrs8tuVpNLcK461znZ8koAtKz
mzBgrTM11L9UEZYfK0hmsVtXtnmu/7WmLc6FCbeZg2M1ETV0jdlUxhoIZN76
IFu/JA+dgz8e8BMDG_r/CjpmTg33DplzouSewNHfQV23cCTHGz0qex8eTs1Vhsn
zucwmTECGYEa3+YtRM6rFbcW63Br1Trz0dkuUwKTDdbfEAceou0s fViZaguu0S
U-/3/wpz13DkFuoNoPBX8tzx561j43T08-j5tbtGx1c88HmTs03yEj3b2sUhtg
RuTvkk6eA+/Z5q4p3NNVjDLqEihHj8D0t3Vr0ipNzz1nUWFLc07te+UcGYEA8wei
N+pWlJtI6UEWY0MVjLScCoCrxCN/SH3+bx3Jjg73eGvTqE2GBLZz1cKURVcXZw
PanTexoz7qZgz6xM1rvhV0yHPCFHB8Bzdy8i0tXPp+E8hKTWgFbfjvPz53wd3z
F5MJXSeF2bXcR5iy5k81E2d9/8YtqxBV1XkeScCgYEAHlcR2Fbo+w8GJFmBnr7
fEY8D027/MSqSx99eC0iYCNskjaBfddmdRg9iRekQubhQlQgv2Q/00TH9AHF3k/
8L8ZagFajmdFGLmtYcZc+/i4m+ALXyEenCCUJWU2P75CqCjDtYtFDzaav1r0s7
1P0T0b6Ng+CLFR67Zzu6uUcGYEA70t3B4Rz2+9p/nYfkevVCar6uYREVIRT0/h
tUSQ0+IsIWMYk71fu3jkjeak0s3d73ayFcZ2WP+dl1klyfZy1G0t1p0GIHURMn
LwY80enB3zyG1sgfK095u7TfQAfFDnvy1p5mGebUPa22XgYe8a2EXKxtB1LAe
b3ee0UUCGYEAj0sPXB/1-Pqow/mSPWE+BADPjW/g5GeruySC1CAQoH9E9y83+Hv
YKP1AphIchg3T40UB0Y1XxarmFIN09ygtYhZPHmTG0X1usDKswtZmyth8mpAun0Q
oJo+h0ZUCmi/ahsBh6Tnd4jSSgzZDadPQXsus/hZnIbZHFpwj1dWQ=
-----END RSA PRIVATE KEY-----
-----BEGIN PUBLIC KEY-----
MIIBIjANBgkqhkiG9w0BAQFAAQ0A8AMIIBCgKCAQEAI14qJb0b0675UX3y/ps5
QaBjF610SU+ /P3hZsgawUihjQurOxd8w0kV6e+89koW5LLB8eCA30efvJpx+J4
2d3GvVwpD7qf70dV1u+89Qv0+Depjv+7xpCoA2yK66nb2eXX4CZIdwDkP+eL5
CYHQtrfSQwMRUo7whxDRrAxf29B5BB+XSVpCU9AZP56v6Rah0e/NVNH4Vr1G25R
0ZymlF5mJjCSy6/KiTnt4U/Q3/P3GIER0N3PzgwPhP+S12tK479sxZ6hAORS8/GX
VaInfQZyJMS14Urf3vXAKV0e7rz3L3cZPbXU5442Vntc9WHz45z8Z4CU3LP2ZrEc
4wIDAQABo
-----END PUBLIC KEY-----
-----
String To Encrypt = This is a string.
-----
Encrypted Tuple = ('6ix93x0b\wd2HgI \n\xbf\x84(\xc4\xbb\x7f\x4eT2\xB6\x8d\xE4v49\x9d1 =\x1
x2\xce\x1dAp\xD37q\xE7\xC8\xE1P5\x00\xddo\x13\xF8\xB8\xA9\xcaall"\x9d\x97\x97\xF9\x9c3\xcc\
ka2\xfaL\xac\x06\xccH\xa2;\xffAW.L\x01\x14\xbc(\x152W\x03fj\x82H\xbc\x0c\xbc\x89dA\x95\
xde\xD5R: (\xe3\x9a\xae\xac\xe4e"\x8f\xB0\xcb\xF5\x02\xac\xD3\x19\xaeek\xce1e9f\x9d\x00\
xc8\x92\xD6\xcb\xC3\xcd\xabZU\x7f\xA6\x56\xC0\xbf\x13'\x9c\x850cF\x8dJ\xae\x07.\x09)\x0c
(\x7\xD7\x07\xC1a+\xa7w\x93td\xF5\xaf\x8d\x1c\xA3\xA6\xA9\xE7\xbc(\x86\x13\xF1\xA8B\x8)
f#\x03c'\x18Lm\xC5(\xa1\x0B\xee)1\xB6\xD5\xB9\x01\x8du\x03\xD0\xC0\x1f\x99H\xF2\xeb\xC27)
4\xE7\xF9f}\xe2c\x9cRk\xdb\xda\xC8\xae\X:\x94_\x0f\x895\xfaR\x9a\xB7\xaf"\0\xebF5\xF1f\X\
1b\x9f9r}\x8a\xC4\xcb\xC6*\x81\xF2\x8Bk',)
-----
Decrypted String = This is a string.
-----
END SESSION.
-----
-uu:----F1 output.txt Top L1 (Text)
-uu:----F1 output.txt Bot L70 (Text)
```

What's left to do?

- Client UI
- Game Logic
- Game State Sync

