



# MYORPG

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SDDEC20-24



# Members

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Clayton Surfus - Software Engineering - Server Developer

Nadine Quibell - Software Engineering - Meeting Facilitator

Jonathan Morris - Computer Engineering - Meeting Scribe

Henry Williams - Computer Engineering - Security Manager

# About

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MYORPG - Make Your Own Role Playing Game



# Functional Requirements

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Players must log in before being able to play the game.

Players can move their avatar in game.

Items can spawn in the game. Players can add items to their inventory from the map.

Players can communicate with other players in their zone.

Objects have accurate collision detection.

# Non-Functional Requirements

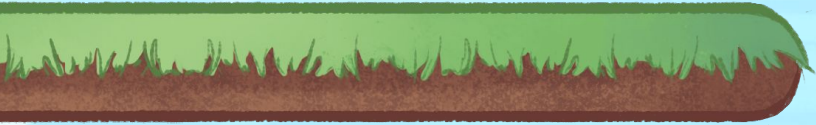
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Player framerate does not affect player action rate.

Player communication does not persist between sessions.

Players are unable to affect entities outside of their current zone.

# Design Choices



# Market Survey

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- MMORPGs are some of the most popular games
  - Minecraft has 1.4+ million players, World of Warcraft has 4.88 million subscribers...
- Tap into the nostalgia of the flash game generation
- User-created content in MMORPGs is often popular, but rare

# Project Milestones and Schedule

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Over the ~15 weeks of class, the first two will be used to create the server and code basic picture download/upload between that and the basic webpage.

Weeks 3-6 will focus on creating basic multiplayer on the webpage, updating a canvas at a fixed framerate where 2 or more basic tokens can move around

Weeks 7-9 will focus on setting up basic player account data and a login screen.

Weeks 10-12 will combine the file upload with player accounts, allowing players to use sprites hard-coded to their account.

Weeks 13-15 will focus on creating a menu for player-end picture upload, allowing the sprite upload for players.

Smaller, quality-of-life tasks such as backgrounds, a chat system, and other menus will be scheduled in to pad the major tasks.

For the second semester, emphasis will be more on the front-end, developing battle, inventory, and item mechanics and developing a player base.

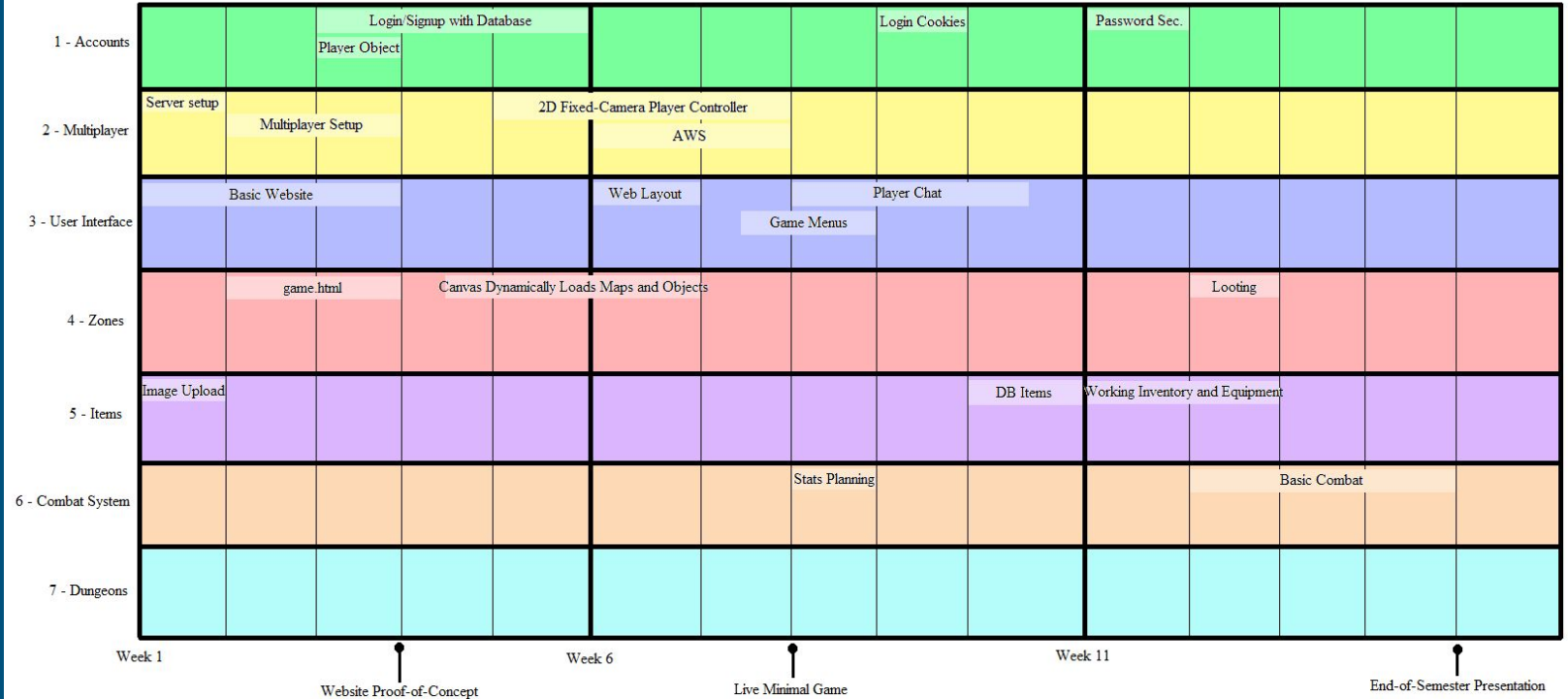
Original project plan schedule



# Semester 1 Adjusted Schedule

MYORPG Schedule GANTT Chart

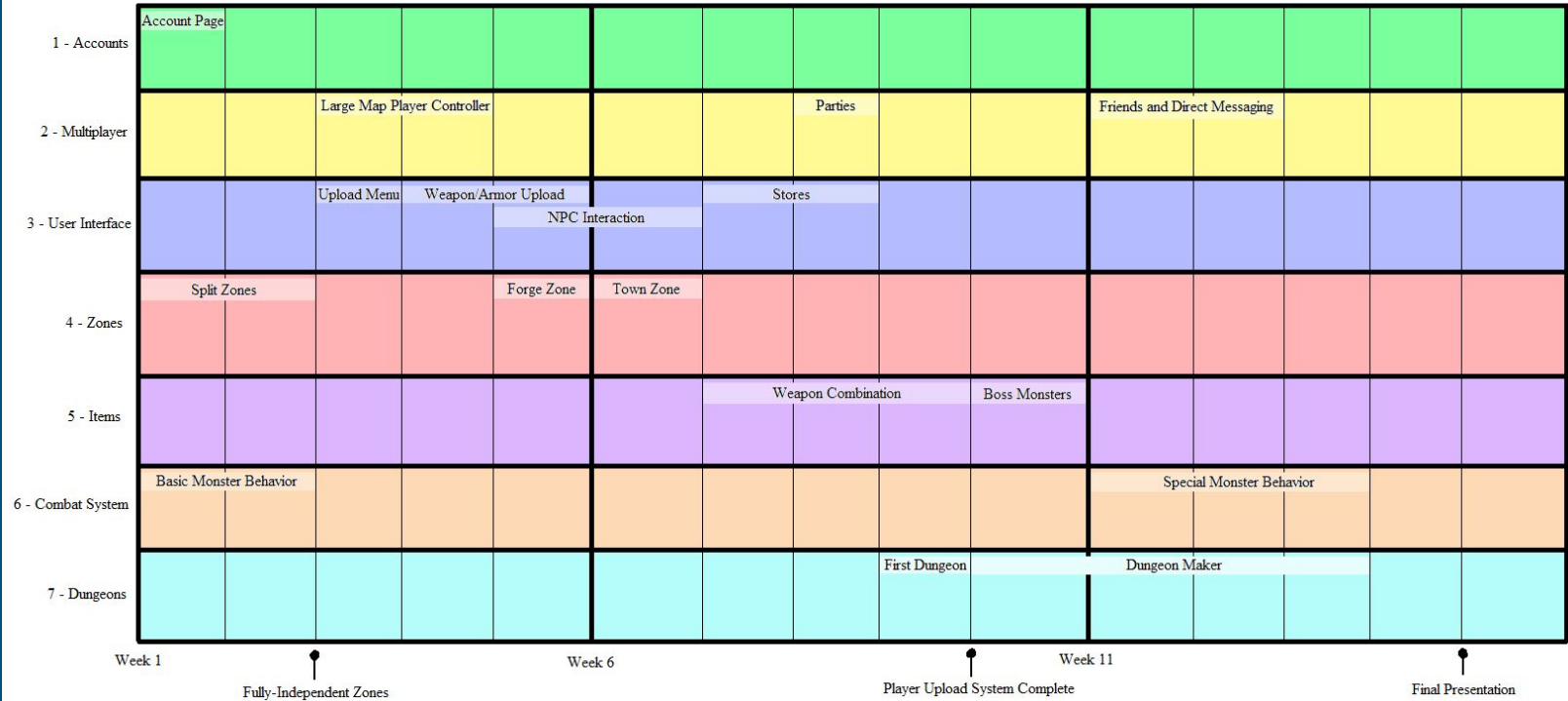
Semester 1



# Semester 2 Schedule

MYORPG Schedule GANTT Chart

Semester 2



# Technology Used

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- JavaScript & Node.js
- Database: MySQL
- Libraries:
  - Express (Web Framework)
  - Handlebars (View Engine)
  - Socket.io (Sockets)
  - Jasmine (Unit Testing)
  - Canvas API (Game)

# Project Status

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- Secure logon
- File upload
- Multiplayer: first zone and player chat
  - Player controller
- Player inventory and equipment
- Item and monster spawning
  - Item pickup
- Live web and database host

# Amazon Web Services

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- Why?
  - Scalable
  - Taking advantage of Amazon services for different tasks when needed.
    - EC2 for servers (Running code)
    - S3 for storage (Storing uploaded user content)
    - RDS for databases (MySQL)
- Cost:
  - Per EC2 T2.Micro Instance:  $\$0.0116 * 750 \text{ Hours} = \$8.70$  Each Month
  - Per GB S3:  $\$0.023 * X \text{ GB}$  ( $\$0.023 * 50 \text{ GB} = \$1.15$ )
  - Per RDS Instance:  $\$0.017 * 750 \text{ Hours} = \$12.75$  Each Month

MYORPG

<http://18.222.147.241:8080/>

# Security

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- Using bcrypt to hash passwords upon registration of account
- Password requirements include having a length longer than 8 characters and having a combination of characters and symbols
- No credit card information or personal information will be stored

# Legal ©

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- In-house vs. Uploaded Assets
- DMCA compliant
- Escalation via Moderators and Admins



# Testing

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- Using Jasmine
  - Configurable
- What can we test?
  - Server Side
  - Client Side
- What are we unit testing?
  - Functional Requirements



# Risks & Mitigations

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- Project Backups - Use of repository and CID
- User Storage, Disk Space Use - Scalable AWS Server
- Mitigation for the COVID-19 Epidemic
  - Plan for team members getting sick - Tasks tracked and reassigned
  - Meetings put on hold - Use of VOIP to conduct scheduled meetings

# In The Future

- Summer plans: Alpha testing
- Additional zones
- Multiplayer features
- Dungeons
- Weapons forge
- Streamline item uploads



# Questions?



Thank you!