

PaperGame: UI

TableTop RPG User Interface

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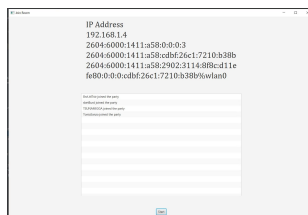
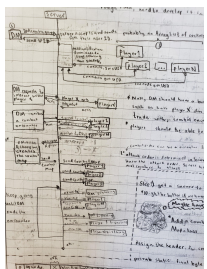


Abstract

A program that gives user's creative freedom over the content and experiences of a tabletop RPG campaign. User's navigate an easy to use user interface, while the underlying software handles networking, gui, concurrency, persistent data storage, polymorphism, and many other programming features.

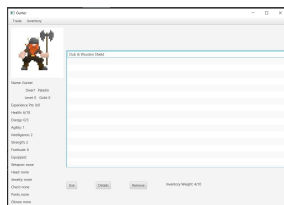
Networking

The Network is peer-to-peer, the Dungeon Master acts as the server, and the Player's act as the clients. Communicating Objects is implemented with a sliding window protocol built on top of UDP.



GUI

Implemented with JavaFX



```
public void connectToServer(String ip) {
    try {
        Socket s = new Socket(ip, 25565);
        OutputStream out = s.getOutputStream();
        ObjectOutputStream oos = new ObjectOutputStream(out);
        oos.writeObject(new PlayerClient());
        oos.close();
    } catch (IOException e) {
        e.printStackTrace();
    }
}
```

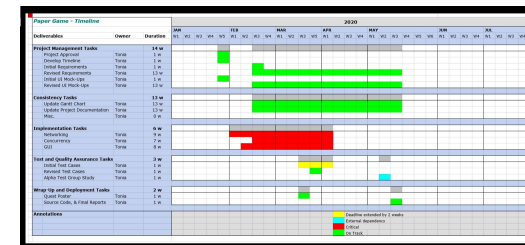
Concurrency

The Network and GUI run concurrently, they communicate to one another via a synchronized static class called ThreadBridge. ThreadBridge is a collection of boolean flags, with synchronized methods to set and check boolean flags.

```
public static void main(String[] args) {
    // Construct threads wrapper class
    ThreadBridge tBridge = new ThreadBridge(
        new Thread(new GUI()), new Thread(new DServer()), new Thread(new PlayerClient())
    );
    tBridge.init();
}
```

Software Engineering

Designed using standard software engineering models e.g. class diagrams, activity diagrams, interaction diagrams. A Gantt chart is being used for time management and planning.



Acknowledgment

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References

Lowe, D. (2015). JavaFX For Dummies.
Lesson: Concurrency. (2019). Retrieved From docs.oracle.com/javase/tutorial/essential/concurrency/index.html
Force a valid Windows filename. (n.d.). Retrieved from rgagnon.com/javadetails/java-0662.html
Where Developers Learn, Share, & Build Careers. (n.d.). Retrieved from stackoverflow.com
java-buddy. (n.d.). Retrieved from java-buddy.blogspot.com

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