

Mobile App Development Report: The Dungeon Run

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1 Introduction

1.1 Project Description

The app allows a user to create a profile and play through a game with the profiles attributes being integral. The game itself consists of 30 predetermined assailants (Loaded from a CSV File) that the user must defeat using on screen buttons which represent actions, the Foe will pick an action based on an algorithm which takes into account the Foes properties. Upon completing the game the user is issued the name and their score which is represented by the time elapsed during the play session.

1.2 Project Goal

To create an application that can entertain a user for a short burst of time, through the use of careful planning and execution to insure ample quality.

1.3 Scope

- Use of input from files
- Validation
- A user friendly design/aesthetic.
- Use of multidimensional arrays to store data.
- Displays all relevant information in an obvious manner.

1.4 Boundaries

- The user will have no direct access to Files containing game relevant data.
- The user will be unable to share contents of application to external sources.

2 Software Design

2.1 UML Activity Diagram

A UML (Unified Modeling Language) activity diagram was created as seen in Figure 1: the diagram shows the actions taken by the user to complete certain tasks for which the application will be used and from this, I learned the tasks to be completed.

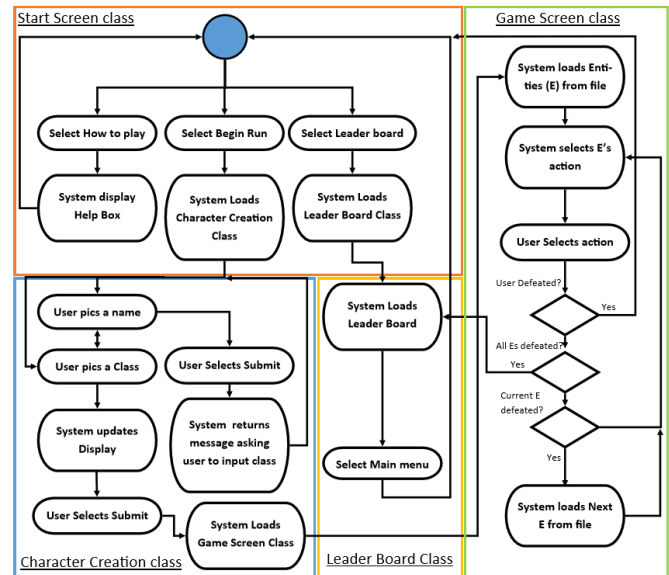


Figure 1: UML Activity Diagram UML Diagram of Mobile Application

2.2 Pseudocode

```

Foes AI: EAction is Global variable
EAction = new random number(between 1 and 4)
if EAction == 4 then
    if Entity's strength is largest Stat then
        | Set EAction = 1
    else
        if Entity's defence is largest stat then
            | Set EAction = 2
        else
            | Set EAction = 3
        end
    end
end
end
    
```

end

switch EAction do

```

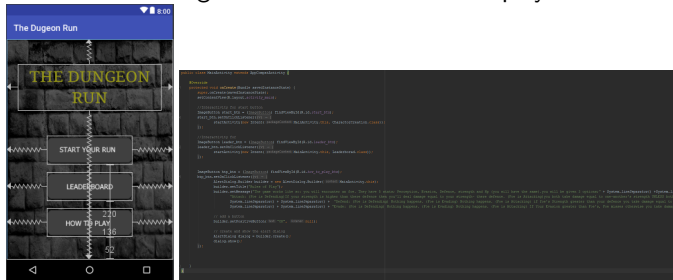
Case 1 Display Foe is Attacking
Case 2 Display Foe is Defending
Case 3 Display Foe is Evading
    
```

end

3 Implementation

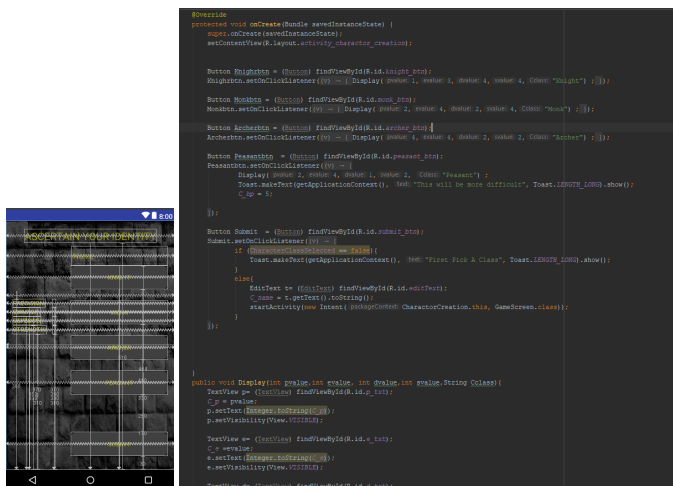
3.1 Main Screen Class

The implementation of the main screen was simple and only took around 2 hours all that was needed was some simple and code to change to different classes or display a text box.



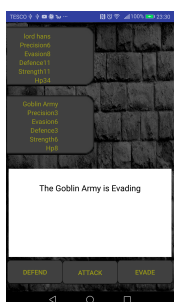
3.2 Character Creation Class

in character creation class require the allocation of global variables and input validation to insure the user didn't enter the game without a class. over all the implementation of the character creation class was smooth only taking a few hours to complete, Encountered issue with XML re sizing but fixed the issue by adding additional constraints.

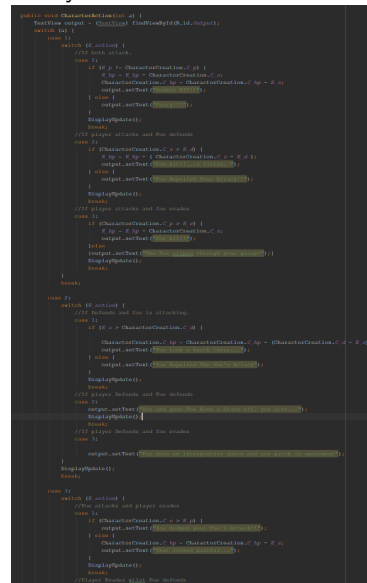


3.3 Game Screen Class

This Class Game me the most trouble at first but after the CSV file import section was complete the implementation was rarely impeded. Then the Entity AI was coded following from my Pseudocode this was mainly painless. Both user interaction and the display update were coded with minimal issue. The game checks were implemented as part of the Button listeners and were simple to set up and run. This section of code was the longest section of code and took around 16 hours to complete



Entity AI Code



User Interaction Code



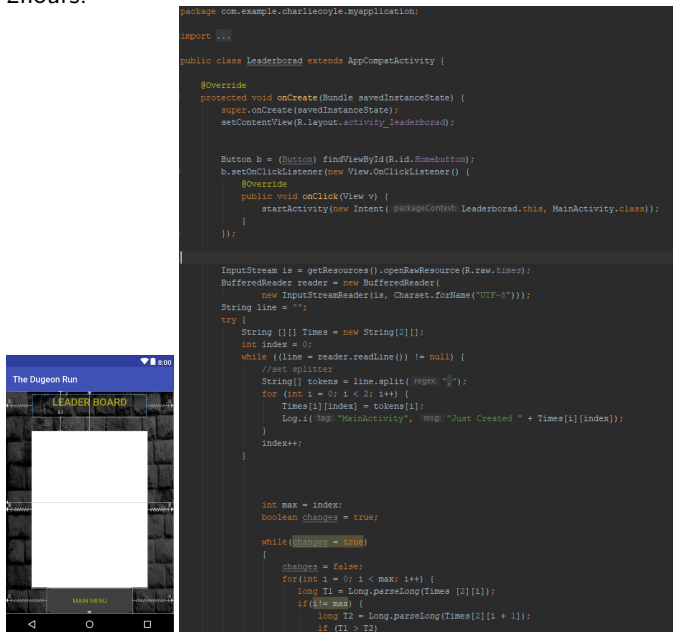
Entity Import Code



Button Listeners

3.4 Leader board Class

The Leader board class was by far the simplest class it displays the leader board and allows the user to return to the main screen. The implementation of this class took around 2 hours.



5 Personal Evaluation

Considering the factor of not having previous experience working in java or mobile app development I am entirely happy with the outcome BUT if i were to start the app development now with the comparable wealth of knowledge i now have the out come would be entirely different. Learning Java from scratch allowed me to grow as an individual and broadens my understanding of mobile app development and its perils. My performance for the most part was good but i lack discipline in my time keeping ability. Overall i felt that the development of my application was a success.

4 Critical Evaluation

4.1 Comparison to Concept

The game runs the way it was designed, all features were implemented and function like intended.

4.2 Comparison to other Applications

The applications functions well comparison to other applications is User friendly in design and follows a consistent aesthetic through out which isn't alleyways the case for apps. It does however lack comparable graphics in comparison to bigger apps.

4.3 User Feedback/ Possible Changes

Testers Name	Problems Encountered	Likes
Jillian Cameron	Spelling errors. *fixed	Graphical style
Sal Blades	Lack of explanation of traits system. *fixed Spelling errors. *fixed	Help button. The simplicity of the game. Entities action display.
Jon Gilmour	Spelling errors. *fixed The simplicity of the game.	Comedic tone

From this its reasonable to assume that the game could use more features like; more graphics, more game play elements and a custom stat editor for the character creator Class.