159.336 Assignment 3

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Introduction

This APP is a simulation& strategy game. In a Dungeons & Dragons world, heroes with varies skills and magic gather in the popular cross road inn in order to exchange messages and looking for jobs for golds, since it is located at the frontline to a number of dungeons.

This APP player is to act as the inn keeper of cross road inn to recruit and mange heroes arrive in this inn, and then send them to undertake different quests.
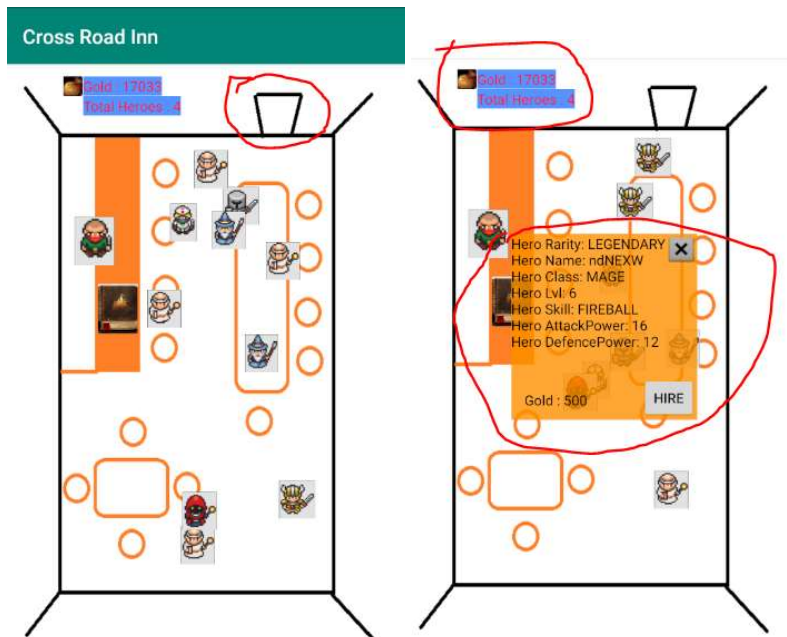
**Development Team**

Only myself.

How to Play
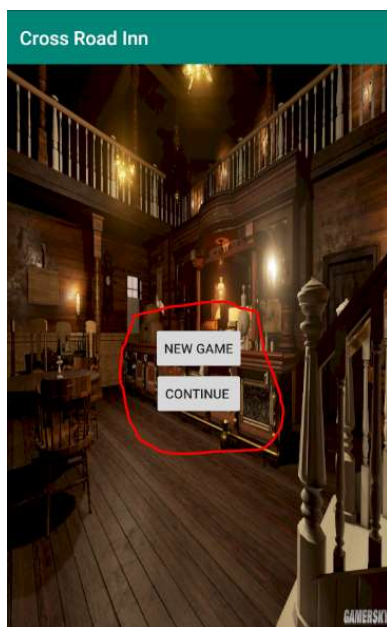
Click **NEW GAME** button to start a new game, or **CONTINUE** button from previous recorded game process.

Heroes arrive and depart cross road inn randomly during a certain time at the gate of inn, if click one of them, a window will pop up showing his stats. Basically, there are 3 classes of hero: warrior, mage and priest, 3 type of rarity: normal, elite, and legendary. If click **HIRE button,** you can recruit this hero into your team with 500 gold.

At this stage, all 3 type of rarity heroes will arrive the inn at the same possibility as per demo purpose. However, I prefer to set legendary heroes with better stats to appear at a very low chance in real game.

On the top left corner, it shows the amount of gold you hold and number of heroes you have recruited. Gold is the **only resource** to recruit and upgrade heroes in this game.
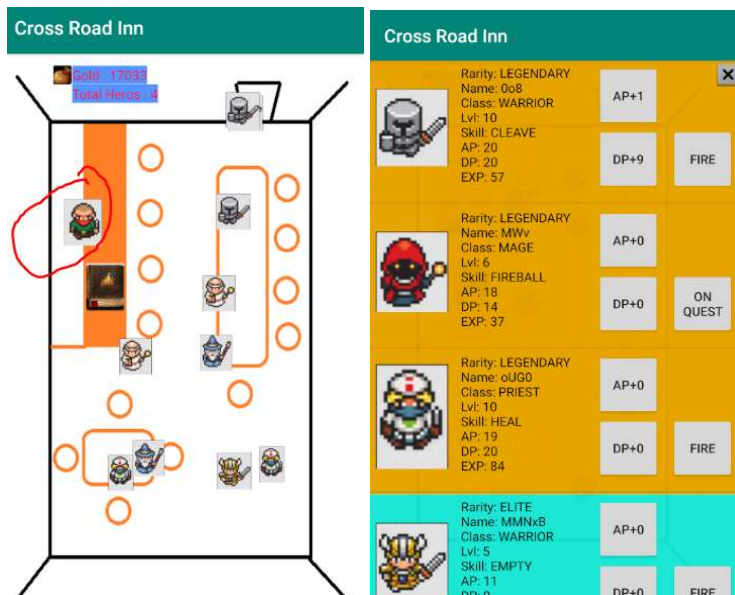

Click inn boss will pop a new window showing all heroes you have recruited, which shows their stats, the **AP+** and **DP+ button** can be used to enhance heroes' capabilities, **FIRE button** is for you to remove this hero in your team since the maximum number of hero you can hold is **10**. **ON QUEST** means this hero is on a quest, then you cannot manipulate him.

Click the **book** on the bar desk will open all the available quests to be undertaken by your recruited heroes. Each quest also has its difficulty level : Normal, elite, and legendary, which has different number of mobs , normal bosses, elite bosses, and legendary bosses, plus time duration for this quest.

Normal quest , elite quest , and legendary quest has 30 minutes , 2 hours and 1 day quest duration respectively. There are 5 normal quests, 4 elite quests and 1 legendary quests in the quest list.
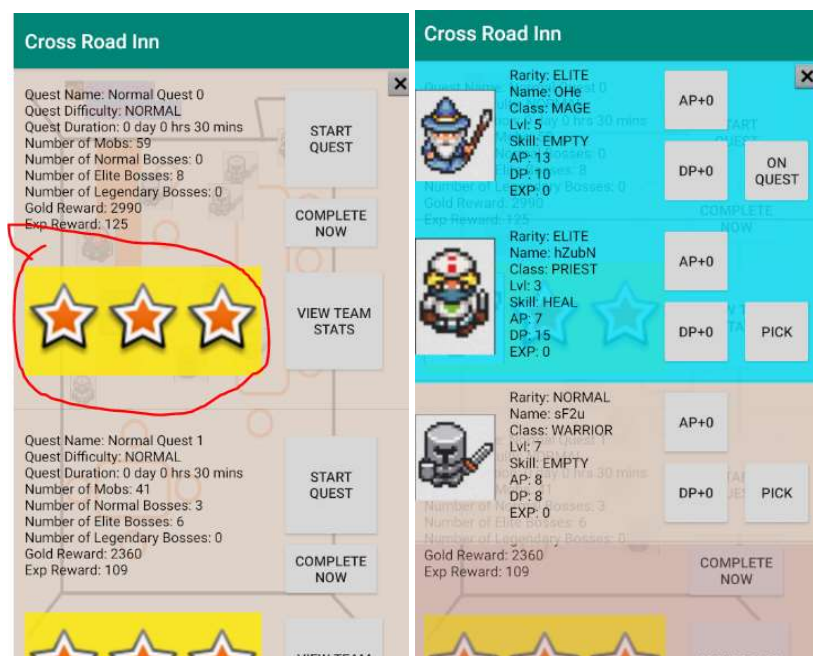
You can organise 1-3 heroes to undertake this quest , by clicking one of the star to select the hero you need in the team , if one of them is ON QUEST, then you can not pick him.
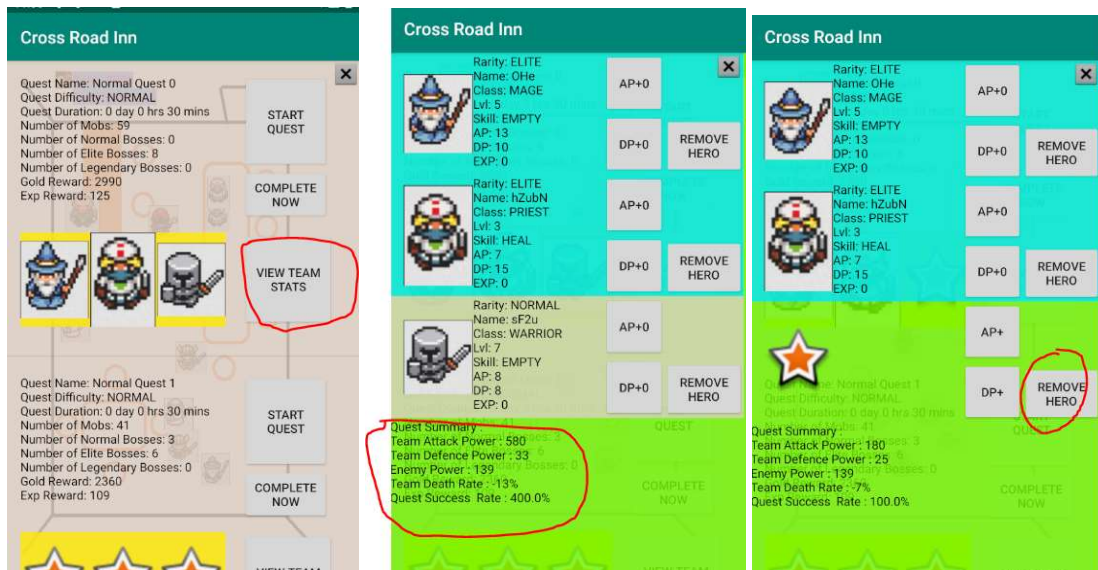
Once you pick all your team member, you can click VIEW TEAM STATS button to view this quest detail, the Quest Summary will show team stats , such as team attack power, team defence power, enemy power, which is used to evaluate quest death rate and quest success rate.

If click **REMOVE HERO** button, this hero can be removed from team, the Quest Summary information will be updated.


If click **START QUEST** button, this quest will be stated and can not be manipulated until it has been completed. This button will be replaced by a timer showing remaining time. Again I have put a dummy **COMPLETE NOW** button to complete task immediately instead of waiting 30 minutes for demo and testing purpose. This button should be removed in real version of game.
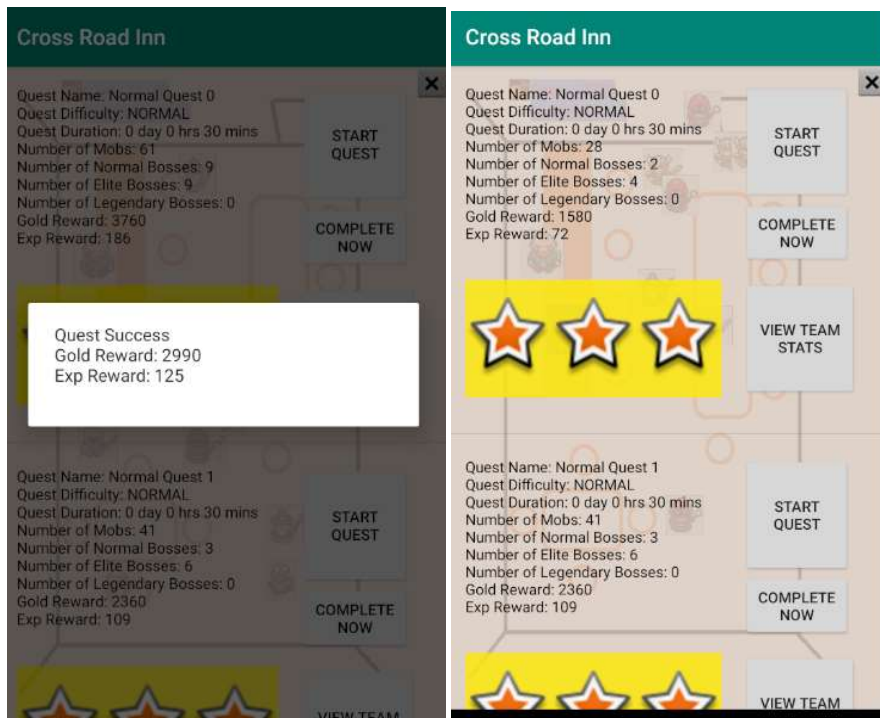
After click **COMPLETE NOW** button, a dialog window pop out showing the Quest completion summary , and another new same rarity level quest has been refilled. The gold reward is for hero to enhance his capability by gold, Exp reward is for hero to increase his level, now each hero has maximum 10 levels.
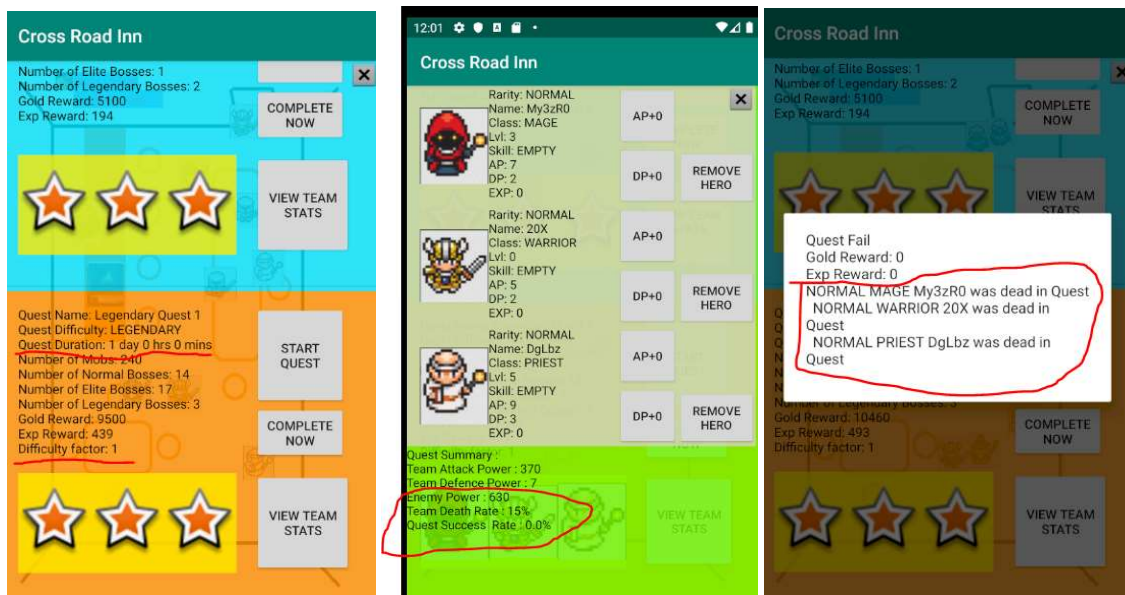
There is a legendary quest at the bottom of quest pool, which has very long time duration, high death rate and powerful enemies, but has more gold reward. The death rate means if you failed in this quest, there was certain chance for hero dead and to be removed from you team, which means all your investment on this hero will be lost.
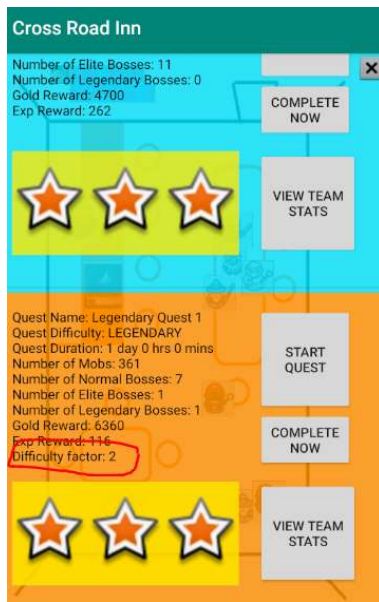
However, the **difficulty factor** for this game will be increased by **1** permanently if you have completed this legendary quest. Since all the gold reward and Exp reward are scaled up by difficulty factor, which means you can upgrade your heroes more quickly, if you have either lost some of them or recruit new heroes. Meanwhile, the only legendary quest in pool will be more difficult to complete in order to increase the life of this game.

Some hero will has an extra skill , WARRIOR will has CLEAVE that greatly increase attack power of this hero , MAGE's FIREBALL can reduce the time duration for quest by 20%, PRIEST's HEAL can reduce the death rate of quest by 5% to save heroes life if failed this quest. In addition, a team combination with WARRIOR, MAGE and PRIEST will increase the overall team attack power dramatically, which increase the success rate of this quest. Therefore, it is highly recommended to formalise a combo of WARRIOR, MAGE and PRIEST team.

AP+ and DP+ button could be clicked to enhance heroes' capabilities, the cost for every enhancement will be increased exponentially for player to consume GOLD.

Notifications
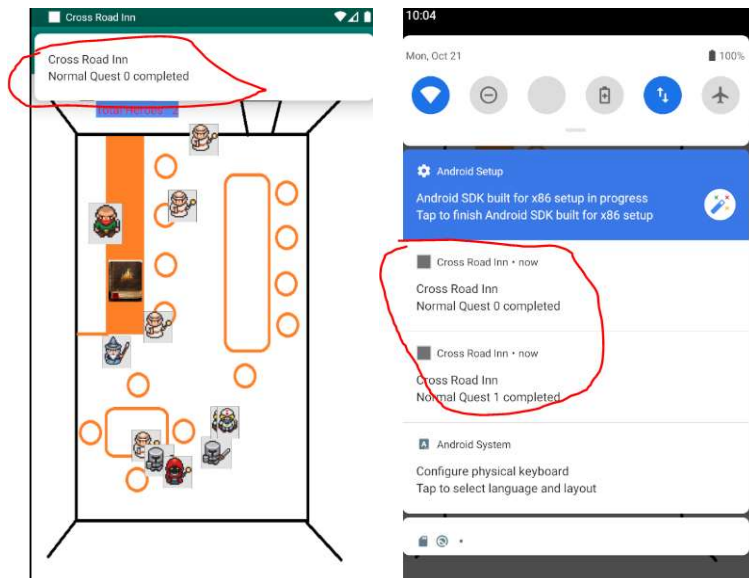
Once a quest has been completed, a notification will be triggered to remind user to manipulate quest activities on the cell phone device.

External Resources, Library Used and SDK version

-implementation 'pl.droidsonroids.gif:android-gif-drawable:1.2.+' (for display GIF imageView and button in Android)

-All images and drawings are from internet and free to use.

-minSdkVersion 24 (lambda expression has been used in this app)

-targetSdkVersion 29

Source Code Structure

The graph below shows source code point towards different components of this game. Clear version could be viewed from attached **Source Code Graph.pdf** file.
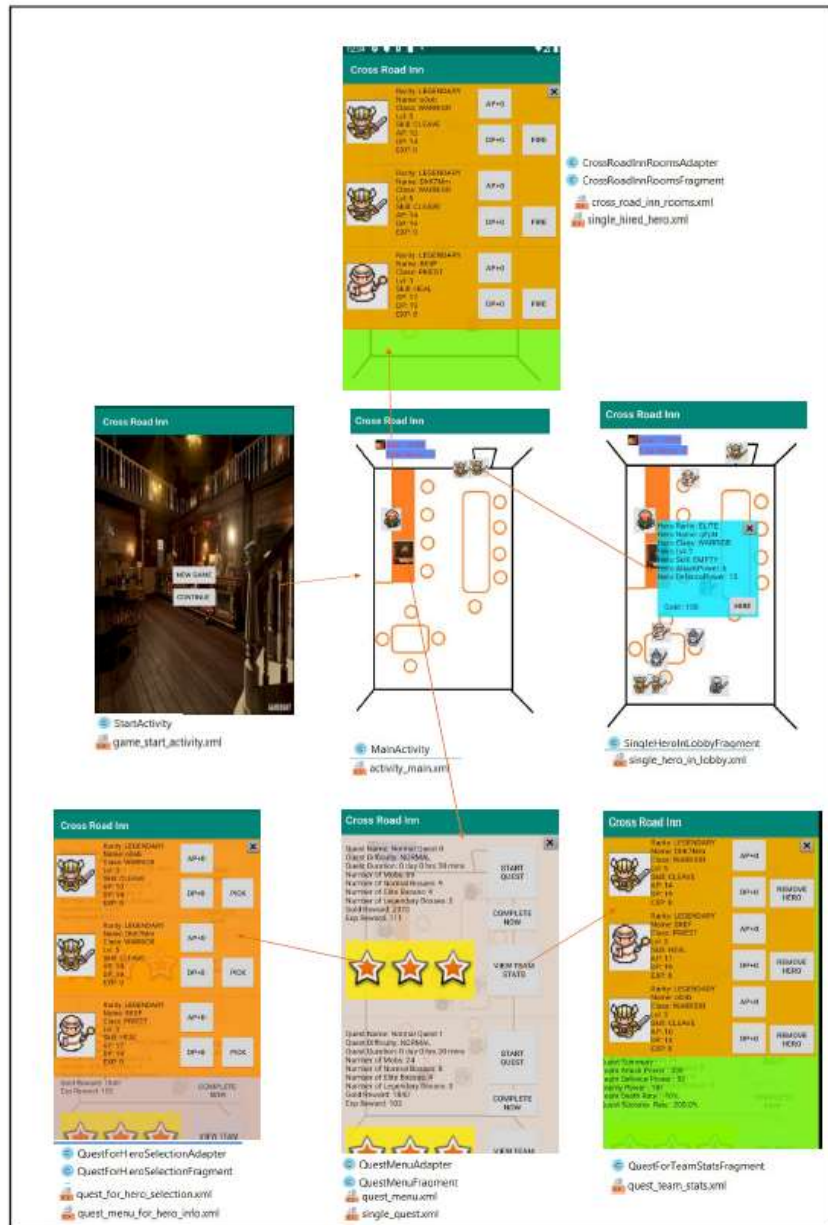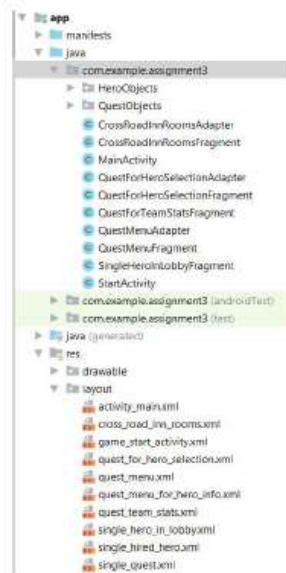
How to Enjoy this Game

Since this is a simulation& strategy game, it is supposed to play at a slow rhythmic. Player/user just need to spare 1-3 minutes to have a look at his cell phone to manage his heroes and check/complete assigned quests.

I prefer the formula for how to calculate hero attack power, skills and death rate of quests etc. to be hidden in the source code of this app. Player/user could explore it by himself for extra fun.

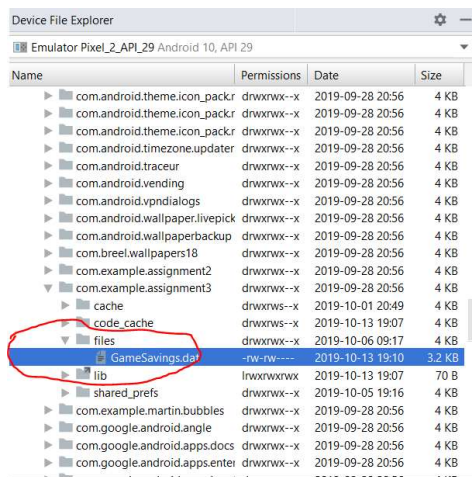## Compatibility to Device Rotation and varies Screen Size

The Scroll View has been used for this game to be fit in varies size of screen and rotation of screen


Game Savings

There is one saving file per game, and it has been saved under

/data/data/android/ com .example.assignment3/files/GameSaving.dat

Memory Usage

The major memory consumptions are heroes enter and leave the inn, where the object has been created and removed through Garbage Collection process of JAVA virtual machine. The overall memory consumption has been stabilised between 55-60 MB.
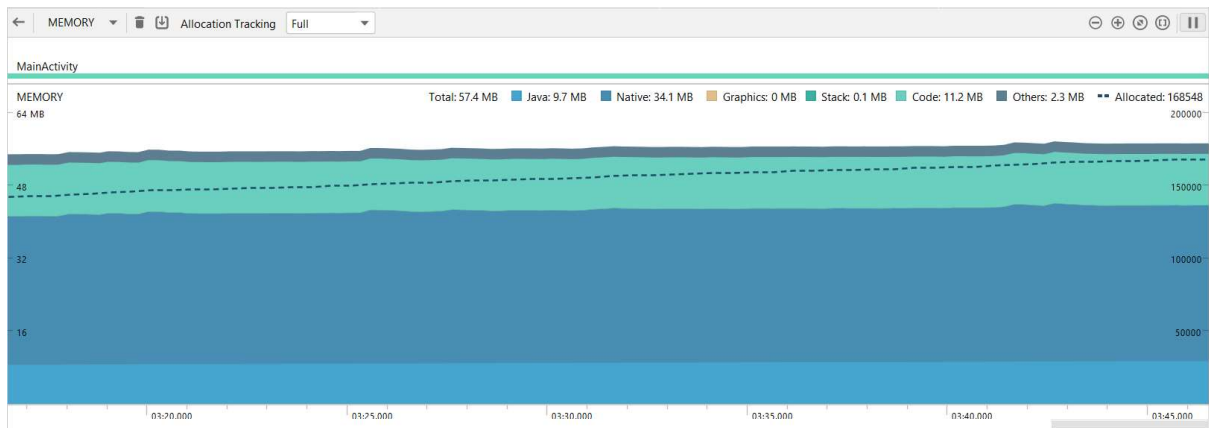
Improvements

Due to the time and resource restriction, the following is the improvement for this project that could be expected:

-User interfaces could be improved significantly, as most of them are vanilla resources from existing SDK.

-Game saving file (GameSavings.dat) has been saved on local device, it could be saved at some content distributed network (i.e. google drive, cloud drive etc.).

-There could be more heroes' skills and classes, quest types plus animations in this game, however, they are super time consuming. In addition, have already taken me a lot of time to debug game logic and features for the existing version of this game. I have also tried to make the code as extensible and readable as possible.