

CosmoFighter

Software Requirements Specification

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1. The Purpose of the Project

‘CosmoFighter’, an Android game, is a space shuttle which will fight against the debris in space to prevent collision and protect the universe. The intention of the game is to have fun by attracting the users and by keeping them engaged in such a way that it will help in increasing their concentration and analytical skills.

2. The Client, the Customer, and Other Stakeholders

2a. Client

- XYZ is a leading game development company. They are in search of a game targeting the audience of all age groups. The game should be intriguing thus engaging the interests of most of the users.
- The intention of the game is to allow users to have fun and keep them interested.

2b. Customer

- Users of the system will be anyone who has a mobile device operating the Android OS with access to the Android Marketplace.
- The targeted audience would be the users who are able to access any Android enabled mobile device.

2c. Other Stakeholders

- **Client** – The client is the key stakeholder. The game is customized exactly according to the requirements of the client.
- **Testers** – The job of the testers is to test the smooth functioning of the game. They should successfully detect all bugs and ensure that no bugs are left undetected while the game is released in production.
- **Marketing experts** – The marketing experts must do enough publicity of the game to a wide audience. They should target a wide audience to try and get maximum downloads for the game.

3. Users of the Product

3a. Hands-On Users of the Product

The end user could be any person with an Android device and having the minimum specifications. They could be novice or advanced users of the Android OS.

3b. Priorities Assigned to Users

- Key User –
 - a) **Client**
The Client is the key user of the game. The game will be designed and developed exactly as discussed with the client.
- Secondary User –
 - a) **End Users**
The end users will be the secondary users of the game. The end users may suggest feedback but it depends on the client whether those will be implemented in the game.
 - b) **Testers**
The testers will report any bugs that are discovered during the testing phase. The development team will fix all the bugs that have been listed by the testing team.

3c. User Participation

In the first phase there will be no user participation of the users in the development of the game. However in the future we may implement a feedback system so that the users can share their feedback directly to the client.

3d. Maintenance Users and Service Technicians

The game once released will have maintenance support at the initial stage for bug fixes. Also, future updates if suggested by the client will be implemented.

4. Naming Conventions

- **CosmoFighter** - This is the name of the game.
- **Debris** - This are the obstacles that will be generated while playing each level. They are not user controlled.
- **Spaceship** - This will be a user controlled object that is used to navigate through the game.
- **Flag** - This is the destination where the spaceship must reach.

5. Relevant Facts and Assumptions

5a. Facts

- The minimum requirement being Android OS v 2.3, any modern version of OS like Marshmallow can support the game. Screen size variations, being taken care of during development, will help in running game across all mobile devices- available now or in future.
- In the category of android games, 'arcade' games statistics shows that 9% of its types get more than 50K downloads.
- 18.42% of newly released apps and 27.82% of the installed apps have Facebook integration in them. Thus we are integrating social media in CosmoFighter.
(Source: appbrain.com)

5b. Assumptions

- Eclipse or Android Studio running on any OS
- Premium version of the same game can be built and released rapidly by introduction of newer levels in the game.

6. The Scope of the Work

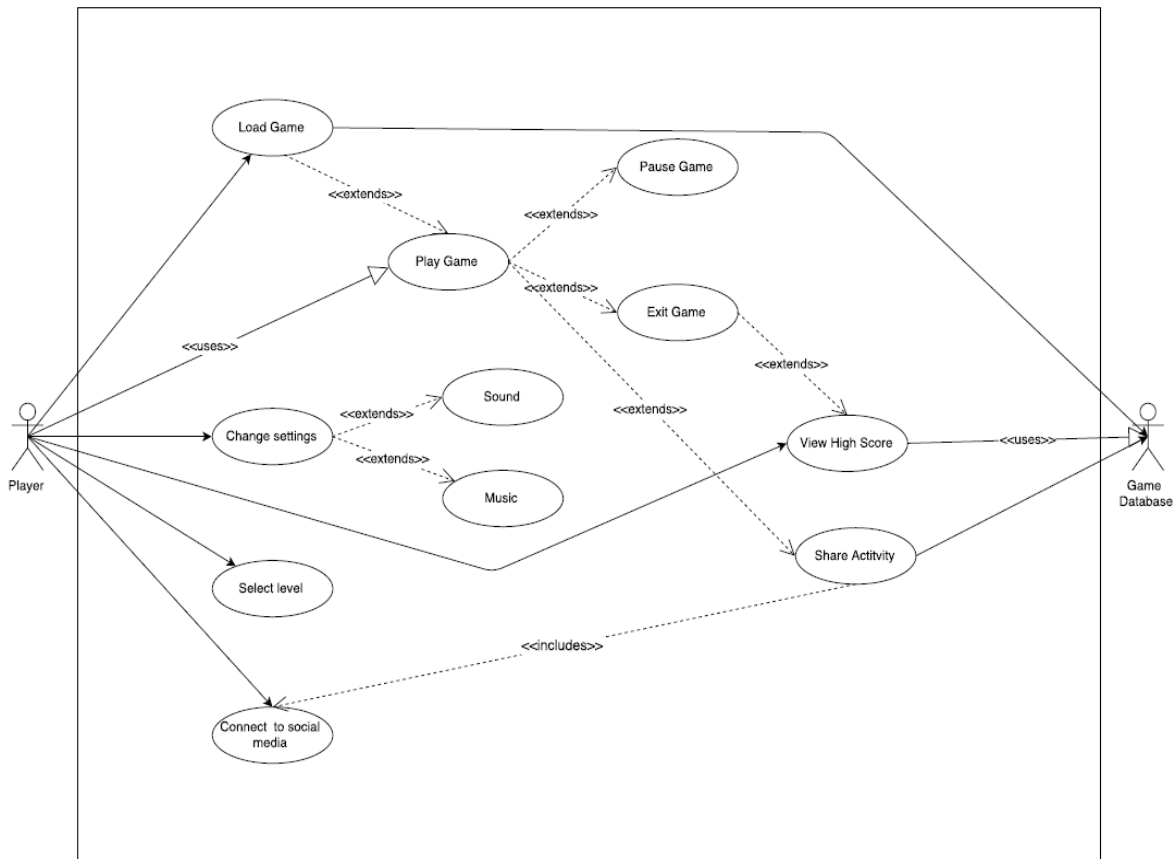
- The scope of the project includes requirement gathering, design, building and implementing a marketable Android game which would be intriguing and attract more users. The success of the project should depend on the number of users downloading the game and their playing frequency.
- The project should follow an agile methodology of development where development team would consist of four resources.

7. The Scope of the Product

- CosmoFighter is an Android game application which is designed for the user entertainment. It has a spaceship which will escape the debris and reach the destination by travelling in a projectile trajectory.
- The game will be available free for downloading from any Android play store. The game requires internet connection for downloading and sharing game activity but can be played offline.
- This is a single player game which can be played from any Android device. The game will contain multiple difficulty levels and packages such that every level of difficulty

- will be unlocked if you clear a level prior to it.
- The game will have social media integration that will enable users to share their game activity with the community.

8. Use Case Diagram



9. User Scenarios

1. Load Game

Load Game	
Description	On clicking the game icon, the game will be loaded.
Pre Condition	Game is installed on the device.
Workflow	Game is initialized.
Post Condition	Menu screen will be displayed.

2. Play Game

Play Game	
Description	On clicking the play option in the menu, the game will be started.
Pre Condition	Menu has been loaded.
Workflow	The UI is loaded for the selected level.
Post Condition	Score is calculated.

3. Change settings

Change settings	
Description	On clicking settings icon, volume and music controls can be changed.
Pre Condition	Menu screen is displayed.
Workflow	Volume and music are changed.
Post Condition	Volume and music settings are saved.

4. Share Game Activity

Share Game Activity	
Description	The game activity like score can be shared on Facebook.
Pre Condition	User is connected to Facebook.
Workflow	User can share his high score and game profile on Facebook.
Post Condition	Activity is shared as a post on Facebook.

5. View High Score

View High Score	
Description	User can view his score for the particular level played in the game.
Pre Condition	User has played that level at least once.
Workflow	User selects the level for which he wants the score to be displayed.
Post Condition	Score is displayed for that particular level.

6. Exit Game

Exit Game	
Description	User can exit the game if he wishes to.
Pre Condition	Game has been loaded and exit option has been displayed on the screen.
Workflow	On clicking exit button in the menu, game can be exited.
Post Condition	User exits the game.

10. Functional Requirements

a. Firing ammo to kill the obstacles/debris

While navigating through the game arena, obstacles in the form of debris often try to trouble the spaceship. Firing ammo can kill these obstacles. Number of ammo required to demolish a particular obstacle depends on the attributes of the obstacle like its shape and size.

b. Select difficulty level

Player can choose easier levels any time during the game but for playing higher levels, he has to complete the previous level to unlock the new one.

c. Sharing game activity on social media

Social Media (Facebook) can be used to share progress of the user in the game within his community. The user should be provided with seamless sharing of his profile on social media.

d. Navigating through space to reach the goal

The space world is where in the game runs. User can navigate his way through the arena with an ultimate goal of reaching the flag and seeking more points without colliding with the obstacles in the form of debris.

e. View Instructions

All new users should be given an overview of the game. The instructions should be able to give the user a glimpse of what he will experience during actual game play.

f. Change Settings

User should be given total control over music and sounds settings. He should have control over the background music as well as the game sounds.

g. View Menu

Menu is a way of navigating through options from which users can perform following actions – Play Game, Instructions, Settings and Share.

h. View Score/Profile

The user can visit his profile to monitor his game activity, current progress and ranking associated with the game from across the globe.

11. Non Functional Requirements

a. Efficiency/Performance

The game should use very little device memory as well as storage space. Efficient memory management techniques should be implemented to prevent memory leaks and battery drainage in mobile devices. The game should also be responsive and load quickly. Game graphics should be fluid without putting much load on the processors.

b. User Experience

The game play should be immersive and engaging at the same time it should be easy to understand. The levels of the game should be designed in such a way that as the user plays the game, his understanding of the game play should evolve, so that the difficulty of the level matches with the skills of the player.

c. Scalability

The game should be scalable to add new features in the subsequent releases. Features like shop module, new levels etc. can be introduced without affecting the existing code base.

d. Security

Privacy of the user will be maintained by keeping the data completely confidential. No personal data of the user shall be shared with a third-party.

12. Open Issues

- The game cannot be played by multiple players at the same time.
- The game does not support Android version 2.2 and below.

13. Risks

- The ROI depends on number of people downloading the game.
- Game play may become overwhelming to some users which might cause them to stop playing the game.

14. Environment and Software Compatibility

The product should be capable of running on Android OS - A device with minimum 512 MB RAM, 1 GHz processor, GPU (Graphic chip), WVGA screen, Android 2.3 or higher. The game should be compatible with all screen sizes in such a way that the screen size does not affect the user experience. High end graphics, though not a requirement, is an added advantage. Game Screen orientation should be fixed to landscape.