METU, Department Of Computer Engineering

Graduation Project

Proposal Form

(Please read carefully, and follow the instructions to prepare the project proposal form.)

(Instructions to fill in this form are given in italic fonts and in parentheses.)

(To provide an input for a section of the form, delete the instruction and provide your input in place of the deleted instruction. In the final form that you will submit, there shouldn't be any instructions left over, including this section of the form.)

(If you feel that a particular instruction is not relevant to your project proposal, please use a proper explanation for this, rather than ignoring the instruction.)

(The final form should not exceed 4 pages, excluding this page and including the References section. Please use Arial, Normal, 10pt fonts and single line spacing.)

Important Notes

A project could be proposed by (i) a student group, (ii) a company, or (iii) a faculty member of the department by filling in this form and submitting it to 49x-proposal@ceng.metu.edu.tr by e-mail. For a project proposal, there might be a sponsoring company supporting the project and providing some form(s) of resources for the project.

If your proposal might contain a patentable idea or any type of intellectual property, please first make sure to follow appropriate steps (apply for a patent, etc.) before sending your idea to us. Once this form is received from you, the instructor(s) and the department has no responsibility regarding to intellectual properties of your project/idea.

All sources and documentation developed for this course are assumed to be public domain (GPL, CC or similar license) by default. If you need any exception for license and disclosure of project work, please specify this in detail in IP section of the form.

Please note that source codes, documents and issue tracking should be kept in department servers. No restrictions can be requested for limiting faculty and assistants access to student work.

Project Information

Title

(Provide the title of your project –as short as possible-.)
Sincap – A Mobile Augmented Reality Game

Target

Public [ ]   Restricted [✔]

(If you would like to restrict your project idea to one or more groups, please mark "Restricted" and state the group or groups eligible for the project.)
Only Group30(Flaming Swallow) is authorized to develop this project.

Proposer Information

Name(s)	(Provide the name of the Faculty Member or Student Members of the Team or Company/Organization submitting this proposal.)
	Mustafa Şenol COŞAR
	Metin KAPI
	Musa KARABULUT
	Tahir ŞAHİN
E-Mail(s)	(Provide the contact information of a person or a team who may provide more information on the project.)
	odtusincap@gmail.com

IP (Intellectual Property) Information

(Include information about how the project group -and possibly the sponsor- agreed on the intellectual property rights of the end-products –if any.)
All rights are reserved by Flaming Swallow.

Project Description and Background Information

Description

(Provide a detailed description and detailed usage scenarios of the project.)

We aim to develop an application that uses real world data for playing games like scavenger hunt which is one of many different types of games which can have one or more players who try to find hidden articles, locations or places by using a series of clues. The project will be worldwide. We will keep the GPS coordinates of the locations where the game will take place. The player will be able to collect clues by moving throughout the game location in real life. When the player goes to a game location, he/she will receive a notification by the game and will try to find a clue by looking through phone's/tablet's camera. The game has also has multi-player aspect as players will be able to interact with each other if they are close by. They will be playing a trivia game and the winner gets a bonus while loser gets a penalty. The game may have different modes like RPG, time attack, PvP. In RPG mode, there may be monsters obstructing the roads and players will need to beat them to open the roads or have to take a detour. In Time Attack mode, there will be no monsters, however players will try to get the best time. In PvP mode, players will be able to challenge their friends to a game ad only that group is going to play that scenario.

Similar Products/Projects

(Search and identify similar products and/or projects, and provide brief information about them.)

Parallel Kingdom is and Android game similar to what we plan. Parallel Kingdom is an RTS game that uses real world map data. Players try to conquer territories.

Pokemon GO also is well-known augmented reality game that will be planned to be released in 2016. Pokemon GO is an MMO game that uses real world map data. Pokemon are randomly placed around the world. Players try to hunt Pokemon and battle against each other.

Geoguessr is also web application that uses google street view to have users play a game. Geoguessr is a puzzle game where game places the player somewhere random in the world. Then, the player tries to find out where he/she is by moving around with google street view.

PulzAR is an augmented reality game for PS Vita. PulzAR has various game modes such as football, tank battle, sport games and many strategy games.

Table Ice Hockey is also an augmented reality game for PS Vita. Table Ice Hockey allows players to see ice field from any direction by using PS Vita's camera and augmented reality cards on the table.

(Provide references for those existing solutions including their web URLs in the "References" section.)

Justification of the proposal

(Describe the purpose of the project.)
Augmented reality is going to be the future of most apps and games. Making a real life open world game is a new concept.

(Why is there a need to develop the project you are proposing?)
Because Turkish game sector is behind the world standards. Developing this game will also contribute to improve Turkish game sector.
(Which basic problems does your project aims to solve?)
We aim to solve the boredom of people by having them going outside.

Contributions, Innovation and Originality Aspects of the Project

(State innovation and originality aspects as well as contributions planned in the project.)
Augmented reality games are newly being developed. There is little competition in this area.

(If there exists any developed products or existing projects similar to yours that target the same problem area of your proposal, how will your targeted product be different, possibly be better than those existing ones?)
The game which we will develop will allow players to have different kind of scenarios which is explained in definition part. In addition to that, in parallel kingdom players try to conquer each other's territories and in Pokemon Go the main purpose is battling each others' and wild Pokemon. Guoguessr is played on computer while sitting however our game will require the players go outside. PulzAR and Table Ice Hockey require augmented reality cards to be stationary on a flat surface. Our game will not require this kind of cards.

(What will be the advantages and distinctive characteristics of your targeted product?)
The application will be free.
For now, our main platform is Android however in the future, we might expend to different platforms ios, windows etc.

 (What are the contributions of your project to technological development at national and international levels?)
Turkish game sector is behind the world's. This kind of games are also new for the world game sector. Therefore, this project will contribute the development of game industry.

(Does your project have any potential to initiate further research and/or development activities in the same or different technological areas?)
Augmented reality games will be popular in the future and more similar games will be seen on the market.

Technical Aspects of the Project

(Provide some technical elaboration of the project -not as detailed as an SRS or an SDD, but detailed enough to visualize the technical aspects of the finished project as closely as possible.)

The game client will run on Android platform. The project lies at the interaction of several areas such as;

- Image processing
- UI design
- Game mechanics design
- Database management
- Script writing

Requirements are;

- Accessing to the camera and GPS of the device
- Monitoring location of users
- Registering users' account via e-mail
- Displaying notifications of clues to users

Targeted Output, Targeted User/Domain Profile

(Describe what the end-product(s) will look like and how it will be used.)
The end product is a mobile application for Android devices.

(Provide tangible success measures and goals.)
Developing a product like what is in our minds and have 1000 downloads in the first month and in one year 50.000 downloads.

(Provide information about the users / user groups and/or domain that will utilize the product.)
For ages 13+ and who have Android devices.

Project Development Environment

(State the planned hardware / software technologies and programming languages to be used.)
The application will run on Android phones and tablets. The application will be written using Java. The server will have MySQL database and php scripting language.

(State the planned methods, tools and techniques to be used.)
Android Studio will be our main IDE.

External Support

(List any required hardware and software support for your project.)
Android development tools are required.
Google Maps Api is required.

(List and describe the resources provided by a sponsor -if any.)
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(Do you plan to utilize external support including know-how, consultancy services, etc. for some minor parts of the project?)
We will hire a designer who will design models for avatars, monsters, clues etc.

References

(Please provide references / links (URLs) for your answers in above sections.)
https://play.google.com/store/apps/details?id=com.silvermoon.client

http://www.pokemon.com/us/pokemon-video-games/pokemon-go/

https://geoguessr.com/

http://blog.us.playstation.com/2012/06/12/3-2-1-pulzar-ps-vita-gets-augmented-reality-puzzle-game-today/

https://store.playstation.com/#!/en-us/games/table-ice-hockey/cid=UP9000-PCSA00064_00-TABLEHOCKEYUS000