

PLANET



PROTECTORS

Planet Protectors

Project: Term Project

Game Design Document

Version 1.0

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ABSTRACT

This document outlines the design of *Planet Protectors*, an android application which implements the concept of gamification. The main factor for using gamification is to engage the users in a fun filled way for understanding and performing activities in a non-game applications.

SCOPE

The main scope of this application is to create awareness about protecting the environment, how to save and conserve natural resources, how the pollution is affecting the world causing great damage to the current and the next generation, how many species are becoming endangered, how to protect them all and what every individual can do to save our planet among people of different ages. All of this is embedded within the application in a fun filled way where the user gets the fun as well as knowledge.

GAME DESCRIPTION

Planet Protectors is an interactive socio puzzle application for android devices where the users are presented with several quizzes and tasks to be completed. These task can be a real world task and task within the application.

Design Goals

The game aims to achieve the following goals:

1. Introduce players with several different avatars and the categories they belong to.
2. Develop a fun gameplay, based on:
 - a. Solving – players are presented with many puzzles, quizzes and fun filled task to be performed to gain points.
 - b. Advancement – the playable characters will be able to advance in levels and achieve many titles.
3. Treasures – players are presented with treasures for solving puzzles. These treasures can be used as an asset for their avatar as accessory or attire.

Target Market

Planet Protectors is mainly targeted for audience of age 10 years and above. . The game is designed for both the genders equally. The main reason for selecting the particular age group is that it helps educating the kids as well as adults in understanding the value of protecting the planet and how they can help each other to achieve it in a unique way that has been never done before. As android devices are cheap and are available anywhere in the world both in mobile and tabular format, a large target audience having desired ages have been identified.

CORE GAMEPLAY

Users are presented with a choice of avatars to be selected before starting the game. The avatar is used in identifying the users and gives the details about the user. Users use these avatars to solve a wide variety of puzzles, quizzes and task. Users first begin with a tutorial of “How To Play”. Then, a new level is started with a simple task. After completing the task, User is moved to next level. Each level is uniquely designed and the difficulty increases in ascending order of the levels. Every time a user completes level, the avatar is upgraded with a new title and accessories. Green Points are added to the player profile for every task he completes.

MAIN GAME VIEW

It is a 2d graphic game with a series of background images changing per level and is different for each category of game. Different types of user friendly interactive image and text based user inputs and outputs is provided.

CORE PLAYER ACTIVITY

All player activities is stored in player details page. All task and activity points are saved in player’s Green Points bank.

As the user progresses to new level, certain points are added to his current points and the title of the avatar is upgraded to a new one.

Each level has a different quiz or task that the user has to perform to advance to the new level.

Users are provided with 3 hints to solve a puzzle throughout the game. If all the hints are used, users can buy them using his green points.

If the user submits 2 consecutive wrong answer for a given question, certain points are reduced from the bank.

Players can add friends and chat with them through a chatting system.

Game Controls

A simple graphical touch user interface is displayed on the screen.

Several Game Mechanics buttons are displayed on screen for performing required actions.

Arrows are displayed to navigate the user between the screens.

A back button is displayed to bring the user to the main menu.

Exit button is displayed to quit the application.

IN-GAME GUI

The GUI will feature the following information:

- 1) Number of remaining hints
- 2) Avatar pic
- 3) Score
- 4) Current Level
- 5) Facebook Integration

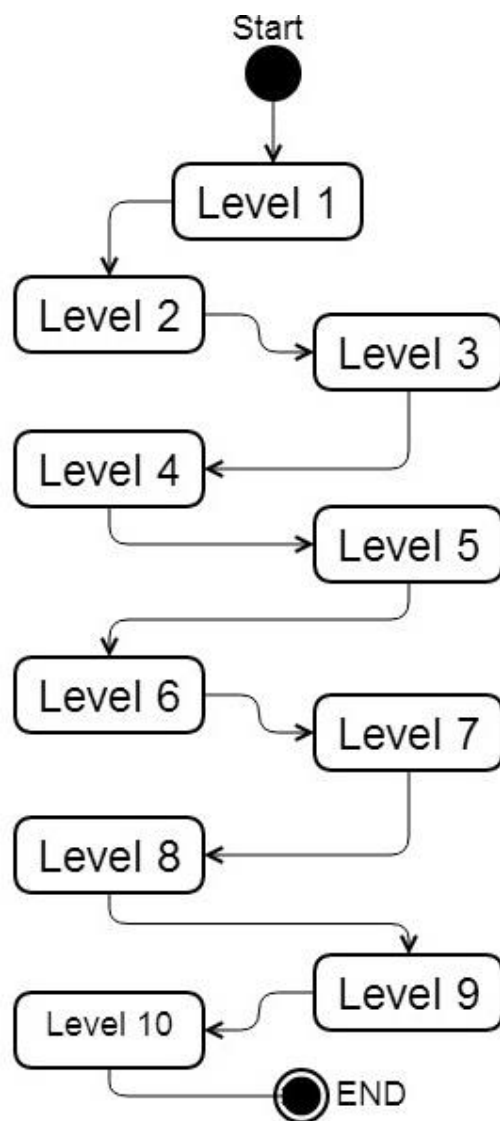
The GUI elements will appear at the top of the game in separate panel / window.

All the UI and the game flow is developed using Java for android platform.

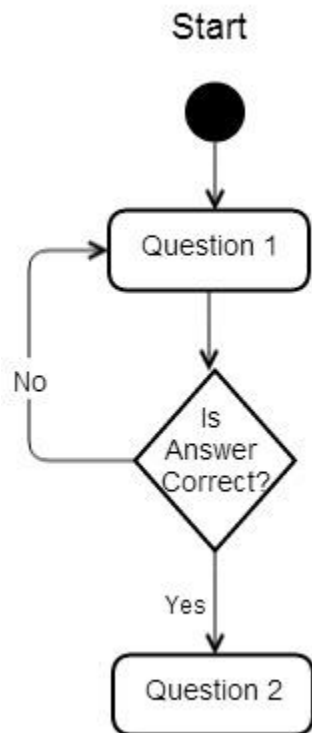
ANALYSIS AND DESIGN DIAGRAMS

FLOW DIAGRAM

Basic Game Level Flow

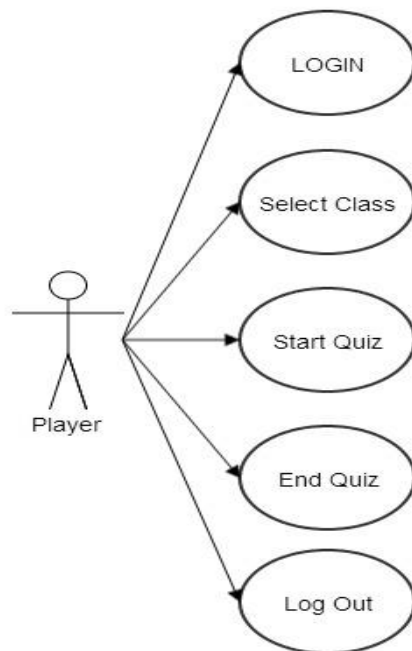


Quiz Flow



USECASE DIAGRAM

Player Usecase



GAMEPLAY MECHANICS

GOALS AND GAMEPLAY DESCRIPTION

The main goal of the game is to complete all the task, quizzes and puzzles and to acquire the title “Planet Protectors”.

Users are first provided to create a profile by entering their details and then selecting avatars that vary for each category of cause/class.

Users are presented with 4 types of classes to select to begin the game.

Each class signifies a unique cause.

“Go Green” class deals with protecting nature.

“Save Animals” class deals with protecting animals.

“Green Power” class explains the importance and depletion of natural resources.

“Green Task” class gives user certain real world tasks to perform to make the user understand how every individual can save the planet.

Then the Game goes in a systematic level by level process. Users are provided with a set of tasks which they have to complete to progress to the next level.

A Cause protector title is awarded to player.

After clearing a class/cause type, Users can select other avatar of different class and continue play until he clears all the levels of all classes.

Hints are provided to help the players to solve the quiz.

RULES

Players should create a profile and select a particular avatar with a particular class.

Players should perform given activity or puzzle to gain points to level up

Players should complete all the tasks of the class to achieve class title.

Players can select other class and avatars after completing all task of other class.

Players should correctly answer or perform designated task to progress.

Players can use hints to help them solve the riddle.

Players should earn a fixed number of points to progress the level.

Players should complete all levels to acquire 'Planet Protectors' title.

CONDITIONAL RULES

Player doesn't level up without answering correct answers

Players need to always login to the profile to continue the score.

Players cannot have more than 3 free hints

Players can have additional hints if he buys the hint with the bank points.

Players need to take screen shot of their task and upload them in to social media in order to progress to next level.

GAME STATE METRICS AND LEVEL PROGRESSION

First the player start with a minimum of 100 points in his "Green Bank".

"Green Points" are the points/score which the user gets for completing a task or solving a quiz.

"Green Points" acts as a currency for buying hints, skipping a level, buying accessories for the avatar and for other transactions.

"Green Points" acts as a leveling exp.

Points earned depends upon the task difficulties. If the difficulty of the task is high, then the points earned is also high.

For every wrong answer, 5 % of the question points is negated or depleted from the Green Bank.

For every friend the player helps, an extra "Green Points" are added in the bank.

Every level has certain number of tasks to be performed to go to next level.

Task

There are several different task in the game the user has to solve. Each class has it own content questions. For example, "Go Green" class will have all the task pertaining to campaigns of saving tree, questions on different types of forest in world, where there are more destruction of forests, what organizations are there to prevent it.

The different task are

- 1) Missing letters : Players are provided with questions and a answer in the form of incomplete word which the player has to fill to go to next question.

Ex: Which wood is used for making fragrance products?

Sa_ _ al wood.

- 2) Fill in the blank : Players are provided with several popular quotes or slogans of the campaigns in a incomplete sentence with a blank in between it.

Ex: WWF says " Plant a tree _____ , save a _____ "

- 3) Select the picture : Players are provided with random pictures and a question is asked in the form of the description of the picture. Players has to select the given pictures which fits the description.

Ex: Which flower oil is used for cooking ?



- 4) Choose the correct : A general knowledge questions are provided to users with a 4 set of options which the user has to select one right answer to progress.

Ex: Which tree produces an orange fruit covered with small soft hairs ?

a) Pear Tree b) Plum Tree c) Apricot Tree d) Quince Tree

- 5) Paragraph Reading : A big essay or a paragraph is given to the user. The user has to read all of it and to answer the questions provided at the bottom of the essay to progress to next level. These questions will be related to the content in the paragraph.

Ex: Trees are the cornerstones of many ecosystems; the building blocks on which millions of other plants and animals rely. They stabilize soils, regulate water cycles, provide us with a wealth of products and, of course, store carbon. Trees are quite simply a fundamental part of life.

Yet over 8,000 tree species, 10 per cent of the world's total, are threatened with extinction. 1,002 species are listed as critically endangered – likely to go extinct unless urgent action is taken now to save them.

The Global Trees Campaign, a joint initiative between Fauna & Flora International (FFI) and Botanic Gardens Conservation International (BGCI) is the only international campaign dedicated to conserving threatened trees. It exists to secure the future of the world's threatened tree species and their benefits for humans and the wider environment.

- 1) How much percent of world's tree species are threatened with extinction?
- 2) What is full form of BGCI ?
- 3) What campaign is a joint initiative between FFI and BGCI?

- 6) World Task : Players are given an outdoor task which he has to perform and upload screenshots of it to progress to next level. World task can be planting a tree , saving a wild animal , limiting the usage of natural resources , conducting events, etc.

Ex: Plant a seed and upload the image of it.

Upload any recent picture of campaigns attended or joined.

- 7) Misc. Task : These tasks are optional. They contains task like adding friend , facebook integration, uploading status and pics to social media. Reviewing blogs etc. Performing these task will give an extra green points.

Ex: Connect with facebook

Add friend to help them

Players move through single levels. Once the level is complete, the player advances to the next level. Every time the player reaches a new level, Green Points are given to them along with a title that describes the type and level. There are total of 10 levels. After completing the levels of a class, players cab start other class levels from beginning or simply can exit the game.

SOUND

MUSIC

A pleasant background score will be played all the time providing player with a soothing environment. The music will be simple loops taken from the various snippets from web.

They should include:

- Opening section
- Menu Loop
- Standard Game Loop

Sound FX

Sound effects will be included throughout the game. On Click button sounds. For every correct and wrong answers a different sound is initialized. Leveling up and green bank points have its own sound clips.

APPENDIX

Platform and Technology

Object Oriented Programming is the key for developing the game. Java supports OOP.

Objects are key to understanding object-oriented technology. Look around right now and you'll find many examples of real-world objects: your dog, your desk, your television set, your bicycle.

JFormattedTextField is a JTextField subclass that allows you to specify the legal set of characters that the user can enter.

FileReader is meant for reading streams of characters. For reading streams of raw bytes, consider using a FileInputStream. It is used for uploading images.

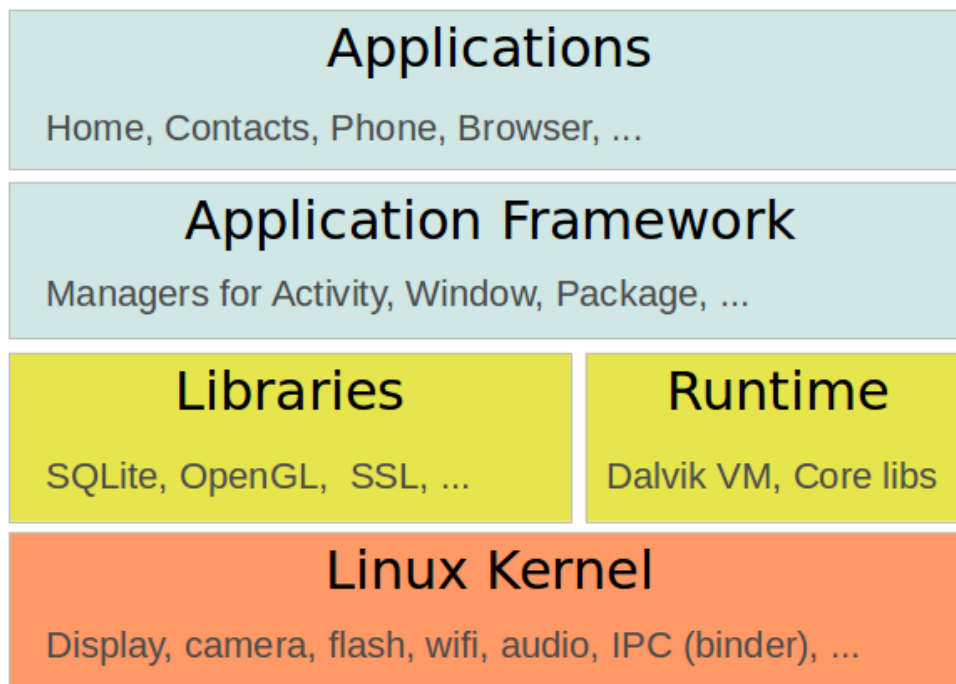
Android is an operating system based on the Linux kernel. The project responsible for developing the Android system is called the Android Open Source Project (AOSP) and is primarily lead by Google.

Android platform components

The Android system is a full software stack, which is typically divided into the four areas as depicted in the following graphic.

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Android SDK

The Android Software Development Kit (Android SDK) contains the necessary tools to create, compile and package Android applications. Most of these tools are command line based. The primary way to develop Android applications is based on the Java programming language.

Android Developer Tools and Android Studio

Google provides two integrated development environments (IDEs) to develop new applications.

The Android Developer Tools (ADT) are based on the Eclipse IDE. ADT is a set of components (plug-ins), which extend the Eclipse IDE with Android development capabilities.

Google also supports an IDE called Android Studio for creating Android applications. This IDE is based on the IntelliJ IDE.

Both IDEs contain all required functionality to create, compile, debug and deploy Android applications. They also allow the developer to create and start virtual Android devices for testing.

Both tools provide specialized editors for Android specific files. Most of Android's configuration files are based on XML. In this case these editors allow you to switch between the XML representation of the file and a structured user interface for entering the data.