

# Treasure Hunt App and Engine

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RESEARCH DOCUMENT

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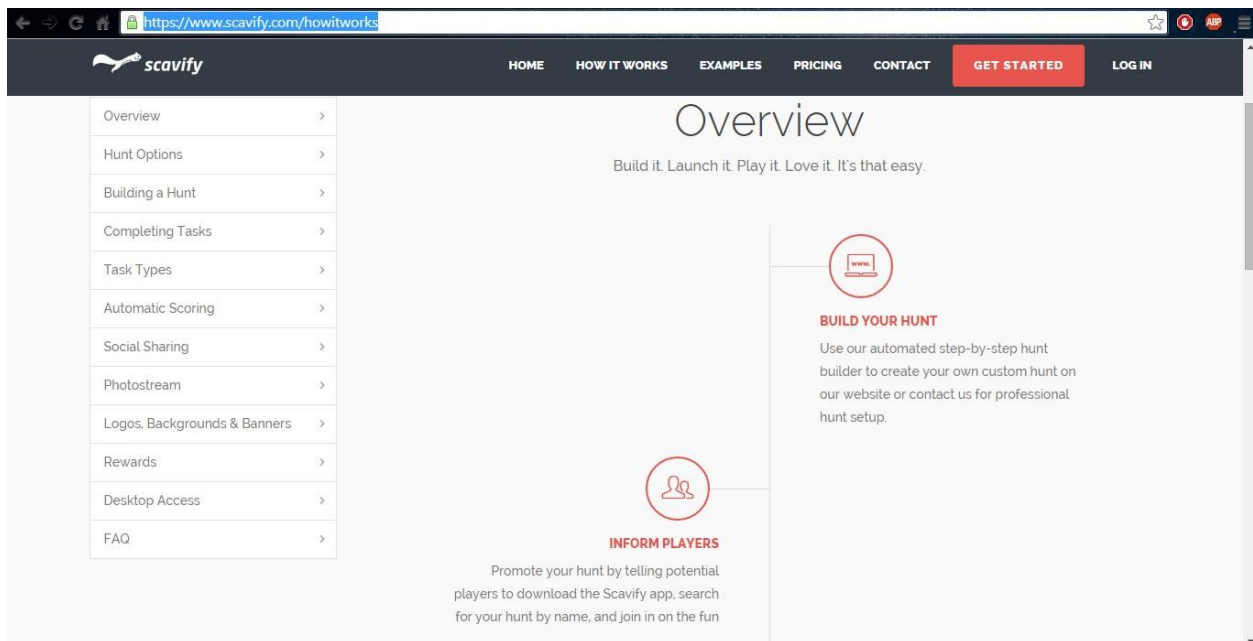
# Introduction

This document specifies the treasure hunt app and engine project original vision, the use cases detailed use cases and FURPS.

## Similar Applications

I have began my research by visiting applications similar to the type I intend to implement. I have observed that there are various ways to create treasure hunt apps and engines. I will include screenshots of some of the sites I have investigated.

## Scavify



[Figure 1]

This engine allows users to create their treasure hunts using a step by step guide. Players have the option provided to search for hunts by creator's name. The users can track their score, they can view other players score and rate each treasure hunt.

# Geocaching



[Figure 2]

This engine is a real world , outdoor treasure hunting game that uses Gps-enabled devices. The users have to navigate to a set of coordinates then attempt to find to a little Geocaching container.

# Developer Tools And Languages

[Ref 3]

As for my technologies I will consider using some the following: Android Studio(Java), PHP, Python 3, JavaScript, JSON, HTML5 and Joomla Content Management System. I already bought the services of Black night Solutions to setup my domain for the website. The package includes domain name, database, application vault etc.

## Frontend

[Ref 4][Ref 5][Ref 6][Ref 7][Ref 8]

The frontend is the presentation layer which is the interface between the user and the backend. This usually consist of two parts the web design and the web development. As File Transfer Protocol(FTP) access allows Me on the web host I will install a Content Management System(CMS). I researched multiple CMS's like Django which uses python, Frog CMS which uses PHP and Drupal which uses PHP too. They all looked professional and their demo was impressive too, it is also easy to learn how to use them but I already had experience with Joomla 3 when I worked on a previous project, why I intend to continue to use it . I did think about using Django as my CMS because uses python which we currently learning it is very simple to create web pages. But based on my knowledge in Joomla 3 and the usage of PHP within Joomla i will use those tools to create my project.

## Backend

The backend is the layer which the user doesn't know about but handles requests coming from the frontend. It has three parts a server an application and a database. On the backend i will use a database which is administered by a database tool to handle the following operations on the database(managing databases, tables, columns, relations, indexes, users, permissions, etc).

## **Android Studio**

[Ref 9]

Android Studio is based on IntelliJ IDEA which is an IDE by JetBrains. On top of IntelliJ functionalities it offers many more functions, one of them is the Google Cloud Platform support. Android Studio is a tool used to build applications for the Android Platform. Most of the applications are written in Java programming language.

## **JavaScript**

JavaScript is a scripting language which is mostly used as part of the web browser. JavaScript is used in the HTML files to create functions, modify the content of the webpage (create, delete, update, make it interactive) etc... JavaScript belongs to object-oriented, imperative and functional programming styles; therefore it's a multi-paradigm language.

## **HTML5**

HTML5 is a markup language that is widely used to create web pages. Each HTML file is just a text file which is made up of HTML tags which will allow to add different content to the website and it has the extension of .html. HTML files can be connected by linking them together. The HTML tags are hidden keywords that define and format the content of the browser.

## **PHP**

PHP is a widely used open source general purpose scripting language which is used for web development and is embedded into HTML. The PHP code is enclosed in special `<?php ?>` tags.

PHP development is focused on server-side scripting. After the PHP code is executed, the web server sends resulting output to its client.

## **MySQL**

[Ref 10]

MySQL is a database management system which is open source developed and distributed by Oracle Corporation. It is a relational database system which means that the data is stored in separate tables. The MySQL server is very fast , reliable , scalable and easy to use. It works in client/server embedded systems. A large amount of contributed MySQL software is available.

## **JSON**

[Ref 11]

JSON stands for JavaScript object notation, which is a lightweight data-interchange format. It is easy to machines to parse and generate. It's based on a subset of the JavaScript Programming Language. JSON is text format and it is completely language independent. JSON is built on collection pairs and ordered list of values.

## **Google Maps JavaScript API v3**

[Ref 12]

The Google Maps JavaScript API is perfect for people who like's to work with JavaScript. But it is not difficult to use even without any JavaScript programming background. The API enables the user to work with the google maps using JavaScript, to add and delete markers, create custom markers with custom messages displayed on the info window, change different views on the map etc.. The only thing the user should request before working with the API is an API key which enables the user to monitor the application usage. In order to request a key the user must have a google account.

## **Python 3**

[Ref 13]

Python is a high level programming language developed under an OSI-approved open source license, making it freely usable and distributable, even for commercial use. Python supports multiple programming paradigms, including object-oriented, imperative and functional programming or procedural styles. Python can be easy to pick up whether you're a first time programmer or you're experienced with other languages. Python can be installed on many operating systems allowing it for a widely use.

## Conclusion

Now my chosen technologies are the following:

- Joomla
- HTML5
- JavaScript
- PHP
- MySQL
- Android Studio
- Google Maps JavaScript API v3

For my mobile application I decided that i want to work on android platform therefore it did not hesitate to pick Android Studio since that now is the official android developer tool to use. Another big advantage to use this tool was already had options to create different project and since it had google maps project this tool was perfect.

For my web client the choice was harder because I had multiples of technologies to choose from. I previously worked with Joomla what is a content management system. It had some useful features that I would have not needed to create myself like the register/login feature. Also it had nice and colourful templates which made the web client look really professional so i decided to use Joomla. Still that was just the shell for my project. Previously I purchased the services of Black night Solutions to hosting my project on the web. In addition I also got a package which was a MySQL database with large amount of space and the phpMyAdmin to manage my database.

Now to put everything together I now chose HTML5, JavaScript and PHP. The reason I am not using python is because it is really new for me and even now that we are working with it I am confident that I can finish my project using the other technologies specified.

After I had an incident with Joomla I decided to change. I am using CSS to create



## References

Ref 1: [Figure 1] Scavify Mobile Scavenger Hunts, <https://www.scavify.com/howitworks>

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Ref 11: Introducing JSON, <http://www.json.org/>

Ref 12: Google Maps JavaScript API v3, <https://developers.google.com/maps/documentation/javascript/tutorial>

Ref 13: Python, <https://www.python.org>