Software Requirement Specification

Mining volunteered geographic information (Crowd-Sourced data pool) for predictive Target Marketing

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Abstract
This document describes the software requirements of a student project activity for implementation of data mining volunteered geographic information (crowd-sourced data pool) for predictive target marketing.

It provides a description of all functional and non-functional requirements for the system. It also entails a high-quality end product for the system.

1.1 Introduction

The Introduction contains the purpose of the Software Requirements Specification (SRS) in Section 1.1 and its connection with the entire software production process, as well as how this document will change throughout this process as part of the evolution of this document in Section 1.2. The scope of this document is mentioned in Section 1.3, and details of the personnel involved with this project are contained in Section 1.4. Any acronyms, abbreviations or definitions used throughout this document are contained in sections 1.5 and 1.6 respectively, and the references we utilized in the construction of this document are included in Section 1.7. Finally, a complete overview of the remainder of this document can be found in Section 1.8.

1.1 Purpose

This document is intended to present the requirements of the system to be produced, both functional and non-functional. The specifications contained in this document will be used to support the production of the system in later stages, in an attempt to reduce the development effort involved.

1.2 Evolution of this Document

In general, this document prioritizes writing the requirements of the system and analyzing in detail the tools being provided to its users. Every requirement has its own priority (non-conflicting). In addition, few figures are also being provided to make requirements clearer to the reader.

1.3 Intended Audience and Reading Suggestions

The audience of this document (Software Requirements Specification) primarily includes any individual user, developer, tester, project manager or document writer that needs to understand the basic system architecture and its specifications.

Developer: The developer who wants to read, change, modify or add new requirements into the existing program may need first to consult this document and update the requirements in appropriate manner so as not to change the actual purpose of the system.

User: The user of this program reviews the diagram and the specification provided in the document and checks to determine whether the software has all the suitable requirements and if the software developer has implemented all of them.

Tester: The tester needs this document to validate that the initial requirements of this program actually correspond to correctly executable programs.

1.4 Acronyms & Abbreviations

- VGI: Volunteered Geographic Information
- HCI: Human Computer Interaction

- SRS: Software Requirements Specification

1.5 Definitions

Data Mining: The practice of analyzing large databases in order to generate new information

Volunteered Geographic Information: The use of digital tools to collect, analyze, and share geographic information that was provided by individuals.

Crowd-Sourcing: The practice of obtaining information or input into a task or project by enlisting the services of a large number of people, either paid or unpaid, typically via the internet

Module: Each separate component developed within the System.

Project: This term is also used in this document to refer to the system that we are developing.

Task: A function to be performed by individuals using the system.

User: Those people who will be using the system. This may be, but is not limited to, our client.

1.6 References:

The reader can refer the following sites to acquire the basic understanding of the interface system:

1. Afuah, A., and Tucci, C.L. 2012. "Crowdsourcing As a Solution to Distant Search," Academy of Management Review (37:3), pp. 355-375.

2 .Aguinis, H., and Lawal, S.O. 2012. "Conducting field experiments using eLancing's natural environment," Journal of Business Venturing (27:4), pp. 493-505.

3. Getting_Started_with_Studio.pdf

4. (IEEE-SA Standards Board, IEEE Recommended Practice for Software Requirements Specifications) and (433-340 Software Requirements Specification Template)

1.8 Overall Description:

The remaining sections of this document is structured in the following way;

Section 2: Project Overview - Contains details of the system, what is the current system, and the proposed system to be developed.

Section 3: Functional Requirements - All of the functional requirements of the proposed system are detailed here.

Section 4: Non-functional Requirements - Details the non-functional targets of our system.
Section 5: Operating Environment: This detailed information about the operating environment and supported systems

Section 6: Design and Implementation constraints: Includes all design constraints
Section 7: Use-cases - Use case diagrams are presented to identify how the system will be used.
Section 8: SRS Modification Process - This section details the process involved with making any modifications to the SRS.
Section 9: Acceptability Criteria - Detailed list of criteria is presented here for the client to assess.

Section 2: Project Overview

2.1 Project Scope

There is already a tremendous number of users creating Volunteered Geographic Information (VGI) on social platforms.

Harvesting such data with the help of machine learning methods yields promising opportunities for businesses and public sectors to create additional business value through mining their internal and external data sources.

The goal of this project is to demonstrate the potential of using natural language processing and machine learning to identify relevant articles from social media platforms about users' preferences in consumption of products. This information will be used to draw conclusions and used in advertisements of products.

Section 3: Functional Requirements

- The system should enable recruiting participants for surveys
- Content inform of videos and audio should be possible to perform transcriptions
- The system must provide the ability to select and access certain crowds (populations) based on defined criteria
- The system should provide the ability to find and post crowdsourcing targets
- The system should be able to allow the user to perform editing of the content to a maximum of 10% of the content only.
- The system should automatically collect the location of every user who complies or agree to the terms and conditions.

Section 4: Non-functional Requirements

Specific non-functional requirements.

- The system must not leak users data and personal information to ensure data security of data,
- The system will be rolled in three different servers to ensure availability and speed of the systems.
- The system will be kept as simple as possible to enable "ease of use", with intuitive user interface layout

Section 5: Operating Environment:

Server will run on Linux while the website should run on all latest major browsers

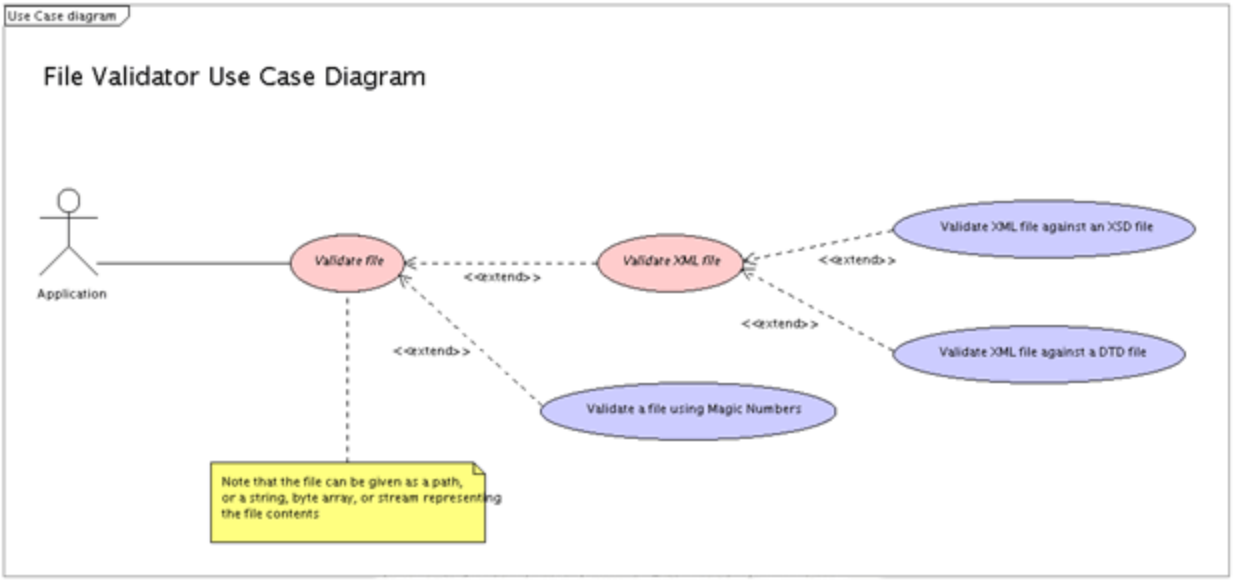
The mobile app will run on iOS and Android operating systems

Section 6: Design and Implementation constraints:
The platform is to be provisioned on the Django framework (On python language) also as the size of data being exchanged or stored is large, so the proper type of data management system should be adopted for efficient performance.

For successful running of a program with a desirable speed requires a minimum RAM and Hard Disk space provided by a standard system (normally available).

Section 7: Use-cases

Use case diagrams consists of **actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application**. A single use case diagram captures a particular functionality of a system.



Section 8: SRS Modification Process

This contains the procedure to be followed if the needs arise to modify the SRS once the requirements have been signed-off by the client.

Team Modification Process
The procedure for the Team to modify the SRS is listed below:

1. A meeting will be called by the initiating Team Member to inform the Team of the proposed modifications.

2. If all Team members agree to the proposition, the Team Supervisor will be informed.

3. If the Team Supervisor agrees to the modifications, the stakeholders Team will be informed.

4. The stakeholders Team will have a meeting with the Team Members and the Team Supervisor (where possible).

5. If the proposed modifications are agreed upon, the changes will be made to the SRS, and a sign-off will take place on the revised requirements.

This will effectively create a new agreement between the Project Team, annulling the original SRS Acceptance.

6. If no agreement is made, the Team and the stakeholders will abide by the original SRS Acceptance agreement.

Section 9: Acceptability Criteria

This section outlines the criteria that the Project Team must meet to ensure that the stakeholders Team accepts the SRS and the final software product.

9.1 SRS Acceptance

To ensure that this document is acceptable, the stakeholders Team must review all requirements and verify that they are consistent with those specified. The stakeholders Team must inform the Development Team of any ambiguities or inconsistencies with this document and all requirements therein prior to sign-off.