**System Design Document**

**YouAnalytics**

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# Introduction

KMART Consulting is proud to introduce a new application that will benefit anyone who posts content on YouTube. We call this application YouAnalytics. A simple web-based user interface will be the starting point for a process that quickly allows users to select their desired information and date range for their YouTube channel. The data will be returned in a versatile comma separated flat file. All of the features will be simple and intuitive so that every user will be able to operate it without any technical knowledge.

# Purpose

The purpose of this System Design Document is to provide a description for how YouAnalytics will be constructed. The System Design Document was created to ensure that the YouAnalytics design meets the requirements specified in the project. The System Design Document provides a description of software, hardware, database design, and security.

# System Overview

For YouTube channel owners wishing to gain a better understanding of their metrics, whether that be subscribers' overtime, average watch time, etc..., YouAnalytics provides just solution. YouAnalytics provides very little burden hardware wise on the part of the consumer as all they must do to gain access to beneficial metrics is simply sign in with their google/YouTube account, choose their desired metric(s), and submit from the YouAnalytics website. No downloading applications necessary.

In addition, YouAnalytics is furthering these metrics by providing visual feedback (through charts) that the user can easily understand.

# Design Constraints

The main design constraints are based on what is available in the Google YouTube application programming interface (API). Since all of the analytic data is owned by YouTube, YouAnalytics is a tool that is used for quick and simple access to that data. Therefore, the type and format of the data is limited to what can be delivered by the API.

# Roles and Responsibilities

|  |  |  |  |
| --- | --- | --- | --- |
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# Project References

List of references:

* Google YouTube Analytics API guide (<https://developers.google.com/youtube/analytics/data_model>)
* W3 Schools for Django, HTML, CSS and JavaScript (<https://www.w3schools.com/>)
* Tailwind CSS (<https://tailwindcss.com/)>

# System Architecture

**Hardware:**

Computers vary per individual/developer for workstations.

Entry level workstations suffice: (example)

* + 8GB ram
  + i3 CPU w/ integrated graphics (if no dedicated GPU)
  + 128gb storage preferred
  + Windows OS 64bit
  + Additional peripherals necessary to operate if not a Laptop.

High End PC’s are not required for this projects operation nor development.

**Software:**

YouAnalytics is worked on through free software/development tools/API

* + GitHub (source control)
  + Visual Studio Code (Editing front end and back end)
  + PyCharm (Back-end)
  + Venv (virtual environment)
  + Django (provides back bone for our back end
  + YouTube API (Provides the method of obtaining data)
  + YouTube (the source for all data)

In addition, KMART consulting makes use of Zoom and Outlook for meetings and

Communication. Outlook may be used as a method for contacting project members.

# Database Design

YouAnalytics will incorporate existing data in the legacy database into a new enhanced database with additional capabilities such as searchable and sortable fields. YouAnalytics will also have the capability of exporting the data directly to the user’s system.

The fields that the user can sort from would include:

* Views
* Comments
* Likes
* Dislikes
* Minutes Watched
* View duration

# Hardware and Software Detailed Design

**Hardware:**

User hardware is any computer with the ability to connect to the internet. Having a personal computer will allow a user to install the necessary software to access the application, if that computer does not already have the necessary software installed as standard.

To host the website, a web server will be utilized. This will allow the web-based application to be hosted on the internet and for users to access it. During development, this functionality can be accomplished on a developer’s local machine by hosting the webpage locally.

**Software:**

The main software used will be a web browser that can utilize HTML and JavaScript. With that browser, a user can navigate to the uniform resource locator for the application and see the homepage. Once at the homepage, the user can use the web browser to select the appropriate actions and submit a HTTP response to the web server.

# System Security and Integrity Controls

The main system security and integrity controls will be hosted with Google, as the application will use the Google authentication services API to verify who a user is and also enable access to a user’s confidential YouTube account information. None of a user’s personal information will be hosted locally, so there is no need to secure that information. There is little risk on the YouAnalytics’ side as far as security and integrity controls are concerned due to the overall design.

Sponsor Acceptance

Approved by the Project Sponsor:

Date:

<Faculty Sponsor>

<Faculty Sponsor Title>

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