
Software Requirements Specification

for

Tribal Knowledge

Version 1.0

Prepared by

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Revisions

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1 Introduction

The charter of Undefined Reference to teamName (to be referred to as “our team”) is to create an internal video sharing application as requested by our team’s sponsor, Workday. This application,

tentatively named “Tribal Knowledge,” will facilitate the sharing of training materials, job descriptions, and announcements.

This section will give a brief overview of the scope of the product, definitions of technical terms, a statement of our target audience, and the purpose of the document.

1.1 Document Purpose

The purpose of this document is to formally provide a list of Tribal Knowledge 1.0 features to be implemented over the course of the project. This document will serve as an assurance to both our team and Workday that the video description of the project sent to our team by Workday was understood and will be implemented as specified.

The product functionality will be broken down into smaller pieces and will lie out which features are most important, the requirements of the specific features, and the order in which features will be implemented, based on perceived value and importance.

1.2 Product Scope

Tribal Knowledge will provide companies with an internal video-sharing infrastructure. Tribal Knowledge will have a secure, easy to use platform available to both computers and mobile devices. Employees will be able to easily record and view training videos, and watch company announcements. Both current employees and prospective job hunters will be able to view job descriptions recorded by someone in that job, instead of reading a dull text description written by someone that never occupied that position.

1.3 Intended Audience and Document Overview

The intended audience of this document is Professors Chandra Krintz and Tim Sherwood, and our mentors at Workday.

1.4 Definitions, Acronyms and Abbreviations

1. Django— a web framework made for Python
2. HTML(Hyper Text Markup Language)— used for displaying web content
3. Python— a flexible and extensible programming language
4. UI (user interface)
5. GUI (graphical user interface)

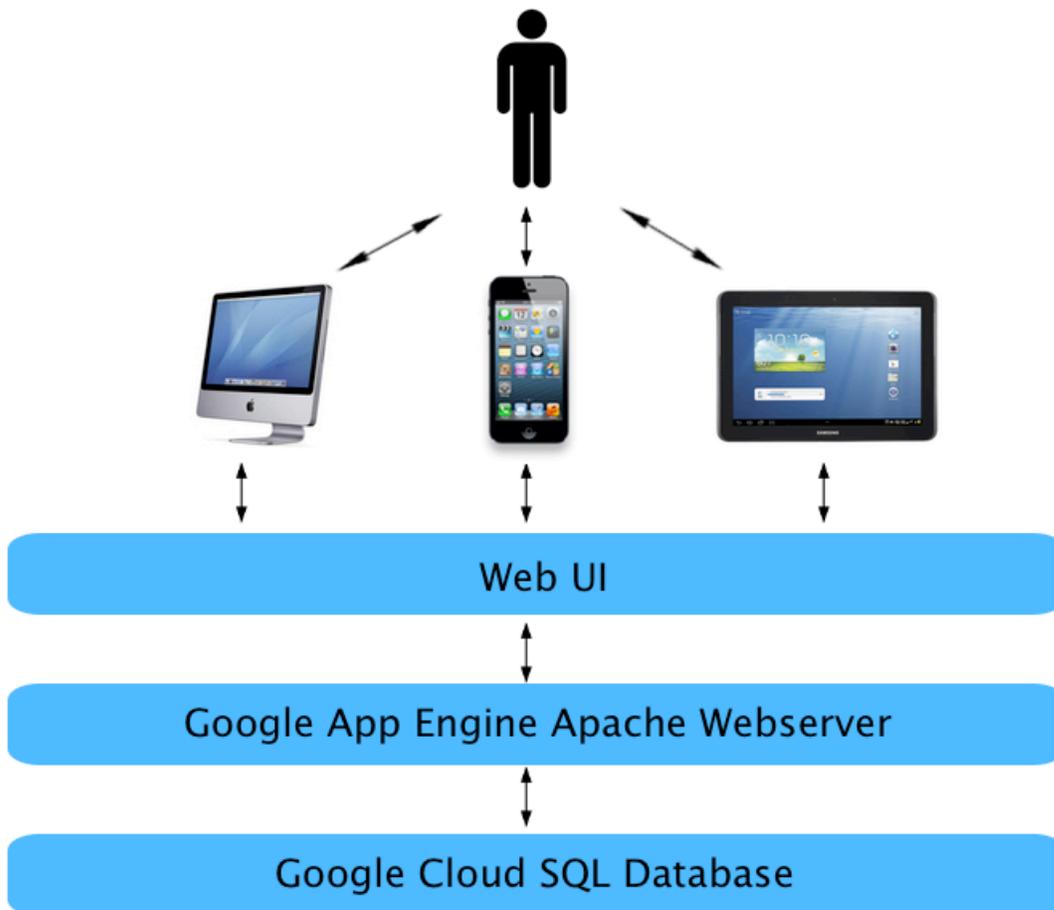
1.5 Document Conventions

This document conforms to IEEE formatting standards; Arial 11 font is used throughout, with single spacing and 1” margins.

2 Overall Description

2.1 Product Perspective

Tribal Knowledge will have a publicly facing Django/Python and HTML web application supported by Google App Engine. The web application will be available to desktop users and will also be optimized for mobile. There will be no requirement to have a native application, and all user functionality will be available to both mobile and desktop platforms.



2.2 Product Functionality

- Secure login
- Intuitive opening screen
- Intelligent search function
- Easy to use video creation, titling, and tagging
- Management oversight to approve and moderate videos and content
- Broadcast company announcements
- Allow employees to receive video training
- Allow job hunters to view job positions

2.3 Users and Characteristics

1. Company Employees
 - a. Easily find and access videos relating to a topic they need information about
 - b. Easily upload videos about areas they have expertise in
 - c. This system should require little prerequisite knowledge
 - i. Familiarity with their own hardware
 - ii. Video sharing sites like Youtube
2. Administrators
 - a. Certain company employees will have the ability to remove videos and moderate content
 - b. They will also have the same abilities as those listed under “Company Employees”
 - i. Moderation functions may require some slightly more advanced knowledge, but should be easy to use
3. Job Hunters
 - a. Should be able to view public job postings for positions

2.4 Operating Environment

Our system will be delivered on a web platform and will target modern browsers (both desktop and mobile). We will target the newest releases of Chrome and Firefox for desktop use, and iOS and Android for mobile. Older releases and other browsers will be supported to the best of our abilities given the time constraints.

2.5 Design and Implementation Constraints

The biggest implementation constraint will be imposed by browser incompatibility. Tribal Knowledge will be implemented using cutting edge HTML video capture which is not yet supported across all browsers.

2.6 User Documentation

Our team hopes to implement Tribal Knowledge in such a way that it is familiar and intuitive, even to first time users. Users that have used similar sites, such as Youtube should feel at home using our UI. If done properly, there should be no user documentation required.

2.7 Assumptions and Dependencies

We will assume that the client will be using an up-to-date release of Chrome, Firefox, iOS or Android browser. We will also assume that we can capture video from a wide range of desktop and mobile devices using HTML5.

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

Our team will focus on creating a simple and user-friendly interface. Tribal Knowledge will feature a simple log in screen. Upon successfully logging in, users will be met with a category screen laid out similar to the start screens of Google Chrome, Opera, and Safari. After logging in, the top right of each page will feature a search bar.

Once a video is found (either by use of the search bar, or browsing via category views) the video will display comments and feature a “thumbs up/down” rating system similar to that of Youtube. These user feedback mechanisms will be displayed below the video.

To upload a video, users will be met with a simple page that will prompt them to upload a video file, give a short description, and tag the video to facilitate searching.



3.1.2 Hardware Interfaces

As mentioned previously, Tribal Knowledge will support all modern desktop browsers as well as recent releases of iOS and Android. Our team will strive to support older browsers and other operating systems, but this support will be considered a secondary objective. Desktop users will most likely be using a mouse (or trackpad) and keyboard, and mobile users will use either a touchscreen or slide out keyboard, as is common on most phones.

3.1.3 Software Interfaces

Most interfacing with the user's hardware will be done with the microphone and camera. HTML5 is capable of capturing video from most modern browsers, although for iOS our team may need to use "Mobile Safari" specific libraries to request iPhone camera and video library access.

The client will interact with an HTML interface supported by a Django backend. Our back end will be powered by Google App Engine, which will include an Apache webserver and Google Cloud SQL.

3.1.4 Communications Interfaces

Logging in to Tribal Knowledge will require HTTPS, and will initially use a self-signed certificate. Later, our team will hope to integrate Workday's authentication system. Our system will need to support the transfer of video from a user device to our servers via FTP. Emails will be sent out to verify user account creation, and to reset lost passwords.

3.2 Functional Requirements

Story: Employee visits Tribal Knowledge

As an Employee
I want to be able to log in
So that I can watch and upload videos

Scenario 1: Employee has never logged in (and does not have account)

Given that the employee has never logged in, they will have to create a basic login profile, and be approved by an administrator. Upon approval, an email will notify the employee their account has been approved and is ready for use.

Scenario 2: Employee has an account, but does not know their credentials

Given that the employee has an account, but does not know their account information, an email will be sent to their address on file to begin the steps towards gaining access to their account. Either an administrator will reset their password, or steps will be taken to verify their identity.

Scenario 3: Employee logs in successfully

Given that the employee has an account and knows their account information, the employee will be able to log in, assuming that the system is functioning well.

Story: Employee wants to view videos

As an Employee
I want to be able to watch videos
So that I can remain current on office knowledge

Scenario 1: Employee successfully searches for video

Given that the employee logged in successfully, the employee searches for videos using the search bar to find a video related to a certain topic. If the video is found, the use can watch the video.

Scenario 2: Employee successfully browses for video

Given that the employee logged in successfully, the employee browses for a video using the guided categories to narrow their search. If the video is found, the use can watch the video.

Scenario 3: Employee unsuccessfully searches for video

Given that the employee logged in successfully, the employee searches for videos using the search bar to find a video related to a certain topic. If there is no relevant video, the employee can add a request for a video on a certain topic, such as “How to Scan on HP Deskjet.”

Scenario 4: Employee unsuccessfully browses for video

Given that the employee logged in successfully, the employee browses for a video using the guided categories to narrow their search. If there is no relevant video, the employee can add a request for a video on a certain topic, such as “How to Scan on HP Deskjet.”

Story: Employee wants to post video

As an Employee

I have knowledge in certain areas that others don't

So I would like to share my knowledge by making a video

Scenario 1: Employee posts video

Given that the employee has successfully logged in, and has a video created the employee can title, tag, and describe the video. The video will soon show up via the search and browse features.

Scenario 2: Employee responds to a video request, and fills request

Given that a request in a certain area has been posted, and that an employee has knowledge in that area, a request can be filled.

Example 1 (Scenario 2): Bob from accounting wants to know how to scan and email a document using his HP Deskjet. Bob fails to find a relevant video using Tribal Knowledge and posts a request. I have the same printer, and am an expert user. **(Different outcomes are continued below)**

Example 1.1 (Scenario 2):

I post a helpful guide. When I upload and fill the request, Bob's search terms have already been added to the tags section to help me make the video easy to find for future searchers. Bob receives an email notification letting him know that a video was posted, and that his request has been filled.

Example 1.2 (Scenario 2):

I posted a helpful guide several months ago. Bob must not have found it! I can revise the tags to include some of Bob's search terms, and notify Bob that my video is still relevant.

Example 1.3 (Scenario 3):

I posted a helpful guide several months ago. Unfortunately, HP updated their device firmware, and now my guide is out of date. I update my guide, and replace the out of date video with a new version. Bob is notified.

Story: Employee wants to re-upload, edit tags, or description of video

As an Employee

I would like to be able to edit my own content after posting

So that I can edit typographical errors, and keep my video up to date

Scenario 1: Employee provides incorrect information

Given that my video has already been uploaded, I realize I misspelled some words in my description, I want to quickly edit these errors, and resubmitted my description. This can also apply to tags, or resubmissions of videos.

Story: Administrator reviews videos

As an Administrator

I want to review videos before they are posted

So that I can ensure the content is safe and relevant

Scenario 1: User posts video that doesn't provide adequate instructions, and skips of key steps.

As an administrator, I want to notify the video poster with my constructive criticism, and allow them to re-upload a new version of the video.

Scenario 2: User posts well done, and helpful video. Upon administrator approval, the video should show up in the search and browse features.

Scenario 3: A recently fired employee attempts to post a slanderous and outrageous video. It should be declined, no notification will be provided to the poster.

Story: Employee provides feedback on a posted video

As an Employee

I want to provide feedback to videos

So that I can contribute to the Tribal Knowledge community

Scenario 1: Given that I have found a video, and watched it, I would like to provide feedback. The easiest way to provide feedback a simply "thumbs up" or "thumbs down." Each employee is only able to vote once per video, however, the vote can be changed (or removed).

Scenario 2: Given that I have found a video, and watched it, I would like to provide feedback. I have more to say that simply voting whether the video was good or bad. I would like to comment on the video, to leave feedback. This can be done in addition to, or independently of whether or not I have voted on this video.

Story: Administrator posts announcement

As an Administrator

I want to post a video announcement

So that employees can be kept up to date about company events

Scenario 1: The management team wants to put on an annual company picnic for the employees. Footage from last year's picnic is uploaded and made as an announcement to increase video traffic and remind employees to attend the event.

Scenario 2: The CEO has just given a great speech at an important conference. The management team would like the employees to see this video, it is released as an announcement.

Story: Employee watches related video

As an Employee

I want to be able to watch related videos

So that if I need more information, I can easily watch another video

Scenario 1: I just watched a video, and got some good information. Now that I know the basics of how to perform a certain task, I would like some more information. Related videos should show up.

Story: Employee watches marked video

As an Employee

I want to be able to mark videos as favourite

So that I can easily access them again

Scenario 1: An employee finds a very helpful video related to a certain task that they have to perform infrequently (a few times a year). Instead of relocating this video every few months, the employee could simply go to their favorite videos section.

Story: Employee wants to report inappropriate content

As an Employee

I want to be able to report inappropriate content (videos, comments, tags)

So that an administrator can remove it

Scenario 1: I am an employee browsing through videos, and I come across a comment with a racial slur. This video should be removed immediately. I need a way to flag a comment so that an Administrator can remove it.

Story: Prospective job applicant researches positions

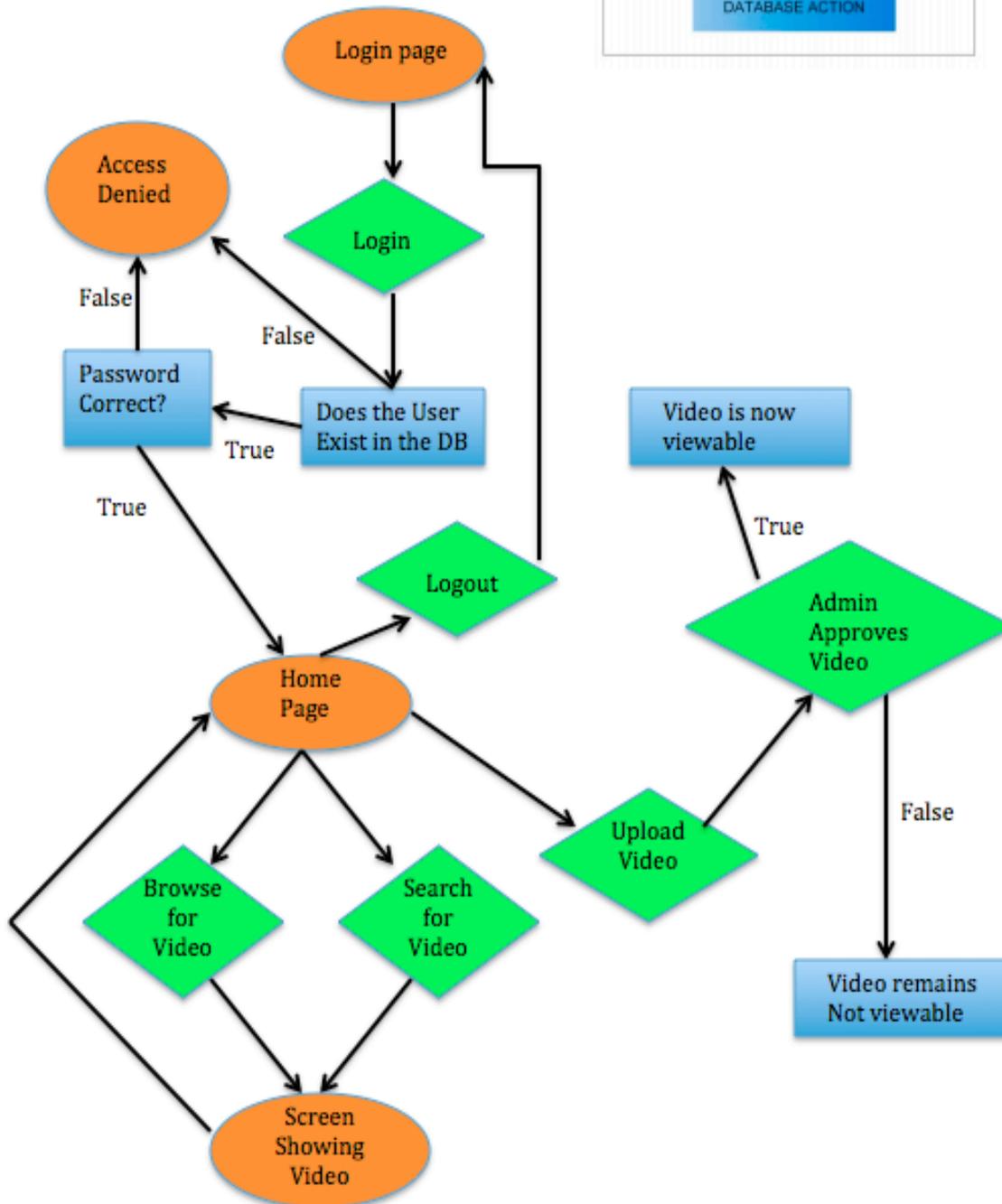
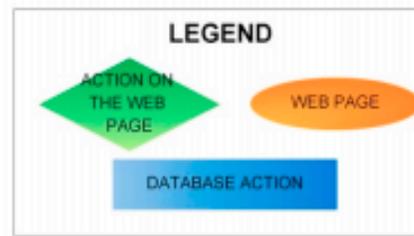
As a job hunter

I want to be able to view video job descriptions

So that I am applying for appropriate positions

Scenario 1: I am looking for a job at a company that uses Tribal Knowledge. Instead of reading dull text job descriptions, I would like to see a video job description made by someone currently at that position. This will help me apply for the correct position, and save both myself and company time.

Data Flow Diagram



4 Other Non-functional Requirements

4.1 Performance Requirements

1. Logging in should be immediate
2. Receiving system emails should take no more than 5 minutes
3. Searching for videos should take no longer than 15 seconds
4. Browsing for videos by category should take no more than 10 seconds
5. Approving a video, commenting on a video, and rating a video should be instant

4.2 Safety and Security Requirements

1. All credentials should be authorized using HTTPS
2. All data should be considered confidential, and be protected with appropriate security considerations. Only authorized users should be able to view non-public videos.
3. Administrators should have absolute control to remove and edit all content.

4.3 Software Quality Attributes

Tribal Knowledge will be flexible, secure, and scalable. Tribal Knowledge will have functionality broken into smaller pieces. This will allow for flexibility in the long term, for example: at first we will use a self-signed SSL certificate, later we will use Workday's secure login system. To make our system secure, we will force encrypted HTTPS authentication, and test our login page for known exploits, such as Cross-site Request Forgeries, and SQL injections. Tribal Knowledge will be scalable, by leveraging resources provided by Google App Engine, Tribal Knowledge will start out as a small project, but be extensible enough to handle a larger user base, and simultaneous requests—as is required for all web applications.