Architecture Plan -

Speech Capture, Transcription, and Analysis App

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ABSTRACT

In this document we will go over what type of architecture style and model we will use and some more details on the architecture itself.

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INTRODUCTION

The purpose of this document is to make it known what architectural model and styles we plan to use in the construction of this software. We will also explain what other technologies, softwares, and hardwares go in to the production of our new software.

We will first explain what architectural styles we plan to use and why, and from there we will explain what model we used and why. We will then go over the reasons that we plan to use such processes and technologies.

ARCHITECTURAL STYLE(S) USED

In this project we plan to use a style called ‘Component-Based Style.’

We plan to use this because so many of our tasks can be done separate of each other. We are also using a few components of the shelf to do some of the main functionality of the software. Using this style divides the system into some logical or physical components with well-defined interfaces such that each component defines a specific functionality.

It provides the facility of reusability. It follows the approach of high cohesion and low coupling between the components of the system. High cohesion means a component perform a single related task and low coupling means components should have less dependency among them. A component can be easily extendable to add more functionality if necessary.

We will create the user interface component and then include the COTS to create the software in entirety.

ARCHITECTURAL MODEL



TECHNOLOGY, SOFTWARE, AND HARDWARE USED

A majority of this code in our project is in python, using Django as our server-side application. We use html, CSS, and JavaScript to design and implement the client-side of the application. We have used Microsoft Visio to create diagrams as well as Microsoft Paint. We mostly use Notepad++ as a text editor for non-python code

We use COTS from Amazon, AWS. We are planning on using their comprehend and transcribe services to help implement some of our services. We will also use a JavaScript based web recorder API, although we have not looked for a suitable one yet.

It will be a simple web-based application that a desktop or laptop with windows operating systems will be able to access and use, with access to the internet. If you do not have access to the internet, then you can record the meeting with any other type of audio recorder and upload the .mp3 file at a later time.

The application server and database server communication is handled by AWS, because we are using their services to host our web app and Elasticsearch database. The database portion is rarely used (as actual storage), besides when looking up past analyses.

RATIONALE FOR YOUR ARCHITECTURAL STYLE AND MODEL

We decided to use the component architectural style because a majority of our services are separated into their own components. We use AWS components and APIs to accomplish most of our goals. With it already being separated so much, we figured component style would best serve our needs. We will also create a user interface component and a search component. In this manner, we achieve high cohesion and low coupling. It breaks apart our services to where any of them can be used out of order and stand alone. It provides a good amount reusability as well.

Our model was chosen as the C4 model, because of the component style we use. As of right now, our representation of the model does not have the 4th C, Code, because we are not at that step yet. It shows the levels of our software system and how we will accomplish different goals by different levels of the model.

EVIDENCE THE DOCUMENT HAS BEEN PLACED UNDER CONFIGURATION

MANAGEMENT

<https://github.com/reedpcummings/SeniorDesign-SpeechCapture>

REFERENCES

<https://c4model.com/>

<https://ac.els-cdn.com/S187705091503183X/1-s2.0-S187705091503183X-main.pdf?_tid=631b79a5-73ca-42d7-9040-fe1bb3690b3b&acdnat=1538759799_f300f6c000833f7669d9539ea1011820>