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| **US Imagine Cup 2017 Winter Semi-Finals - Round 2** | | **Due: January 31, 2017** |
| **For each section below, please replace the grey text with your own writing.** | | |
| **Enter your team info:** | | |
| **Team Name:** | **Answer Students Questions** | |
| **Country:** | **United States** | |
| **Project Name:** | **Parrot** | |
|  | | |
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**WRITTEN PLAN SUBMISSION – see below**

**The below US Semi-Finals questions are based on submission criteria for the overall Imagine Cup 2017 competition. Remember that a video (10-min max) must also accompany your Written Plan submission. Both the Written Plan submission and Video submission must be completed online at the link provided in your email.**

**We are excited to learn more about your technology project. Tell us below about what your technology project does; who your technology project is for; and how you will bring your technology project to market. For the questions below you may include images, flowcharts, or other visual elements in your document.**

**A total of 12 teams will advance from US Semi-Finals to the US Finals.**

**It time to get started on the next page – we’re looking forward to seeing your team technology project submissions on January 31, 2017.**

**INNOVATION & CONCEPT**

Briefly explain your project

According to the Ebbinghaus Forgetting Curve, students forget more than 50% of the material in their classes after their conclusion. Thus, this leaves many students struggling in their more advanced courses, oftentimes unable to recall vital information from previous classes. With Answer Students Questions, this no longer will be an issue. Our project is a web service that provides students with an efficient and streamlined way to refresh their memory with important concepts. Professors and students alike can search for and upload lecture recordings, search any keyword or concept in the recordings, or discover new content to satisfy their intellectual needs. Answer Students Questions will take the user to that moment in the lecture with clinical precision. In addition, Answer Students Questions has a vast database for students to quickly find information and concepts to learn, expanding their knowledge and reducing clutter in their mind. We plan to partner with universities in the future, where students and professors can upload recordings of lectures for users to access all around the globe.

Summarize the value

Our technology improves the academics experience by allowing users to efficiently access the information with no ifs, ands, or buts. In addition, it serves as a crutch for the mind, giving students the support and information they need without having it cloud their mind, granting them more time and energy to focus on other academic endeavors.

Define the product or service created and its target audience

**Several products in the market do allow users to locate words expressed orally in audio files, but none of them provide support for videos or user uploaded recordings, nor do they focus on the education market. Answer Students Questions fills the void, allowing users to find the information they need, regardless of whether the content uploaded is audio or visual. Furthermore, the service has its own database, becoming more knowledgeable as more users contribute. Even without the lecture recording in hand, users can conduct a search in the database to swiftly pick up any concepts or skills they want to learn, saving valuable time by filtering out the unrelated content in the uploads.**

**With its robust database, Answer Students Question can be further expanded to a free online Massive Open Online Course platform, allowing for further accessibility and flexibility. The ability to quickly locate content will be a feature to kill for in our technologically dependent society today, something that sets our service apart from other competitors. Our pride and joy is freedom and accessibility of ideas. We are allowing professors and students throughout the global academic community to upload their content without pesky restrictions for all to benefit, allowing the best minds to share their wisdom for all to see. By using Answer Students Questions, professors no longer will be obligated to answer repetitive questions while students can efficiently master key concepts almost instantaneously.**

**In the predictable future, we plan to partner with a plethora of leading educational institutions to broaden our service and increase overall productivity for all. We intend to make everyone, regardless of their schedule, stay on the same page anytime, anywhere. Unforeseen circumstances beyond our control can be burdens to the devoted professor or passionate student. We hope to ameliorate these potential problems with our service, maximizing the academic potential for everyone in academia. Studies have shown that efficiency correlates to academic performance. Since our goal is to provide an extremely efficient platform, this efficiency will translate into better quality and performance for all users. Whether it is a student seeking to manage the stress in her life, or a professor boggled down with research and teaching, our platform hopes to provide these two demographics with academic support in their time of need to boost performance and reduce the intellectual clutter in their life, resulting in enhanced performance.**

**We are initially targeting college students in United States, an open-minded, westernized population with technology at their fingertips, always optimistic about the future of technology. According to National Center for Education Statistics, in 2016, 20.5 million students are expected to attend colleges in United States, and number has been increasing since 2000. A recent survey from AMD states that 85% of college students owns a laptop, indicating there are 17.425 million potential customers for our product. With the advent of efficient technological services such as Quizlet or Khan Academy, American students are always looking for the next level in academic efficiency. Our intention is to make our platform as widespread and accessible as possible, while maintain the minimalism and productivity students cherish.**

**TECHNOLOGY**

Core Technologies

When a video is uploaded through a HTML post request, it would be directed to our server, where it will make the necessary preparations for the video’s uploading process. Prior to sending the actual video file, all its information will first be passed to our server, then stored in Azure SQL. Each video uploaded will be given a unique ID that will be stored in Azure SQL. The video will be cut in slices for preventing potential upload timeouts. At the same time, a AppendBlob with the unique ID will be created in the Azure Storage Account. The end-user will be able to select the size of each chunk to accommodate the user’s network speed. After each chunk is been uploaded to our server, it will be stored to the Azure Storage Account as a AppendBlob using the exact same unique ID created previously. When all chunks are finished uploading, a special post request will be sent to our server signaling the end of the uploading process. Finally, our server will perform all the necessary pre-processing of the video file and store all necessary information in the Azure Storage Accounts. This information will be used in the future for our search functionality.

Google Speech is a vital platform we use to extract and generate the transcripts out of the videos that users upload. We use the open source Python tool Autosub to divide the video into pieces of less than ten seconds. This process allows us to utilize parallel processing to improve efficiency. Additionally, the video slices will aid in identifying the timeline of the transcript. FFmpeg is used to convert the format and capture thumbnails for videos. After video transcripts are generated, we index them through Whoosh, our search indexing library of choice. Whenever there is a user’s request to search for a certain video by key words, we can help them find it in less than one second. To provide users with the timestamps where the key words show up in the video, we create and update the inverted index of those key words every time the users input a search query. In the future, we will implement a complete index of key words to increase the system’s efficiency.

List the Microsoft technologies used

**We are using three key services from Azure: Azure Virtual Machine, Azure SQL, and the Azure Storage Account. Specifically, we will utilize the Azure blob storage feature from Azure Storage Account to assist in the video upload and transcription processes. We are hosting our service on Azure Virtual Machine, where Azure SQL handles the storage of information from video files. The Azure Storage Account acts as the actual file storage system for video files.**

**FEASIBILITY**

**Define the business model and how you will bring your idea to market**

For financial independence, we are taking a similar approach to Canvas, a trusted and widely adopted learning management system. Canvas provides services to students and charges the educational institution with a licensing fee. It is a well-known fact in the industry that Canvas is used by more than 300 educational institutions and over 9 million users. In order to assist more students, Answer Students Questions will be available for students for free, while educational institutions such as universities will be charged for a license to access the service. The fee will be calculated based on size, training, support, and other localized factors typical of educational institutions. By using this reliable business model, our product can reach a wider range of customers while maintaining our coffers to improve our services.

We are planning on acquiring the first group of users by marketing our products to students in college on social media. We will also partner with the most reputable educational institutions, since their renown will help immensely in networking, resulting in a rapid expansion of our coverage. To reach more students, informative pamphlets will be distributed to students on our partner’s campuses. Fliers will be provided to the student in any classes that uses our system.