Using the QA system, we have the capability to answer a wide variety of business-related questions. This document will seek to discuss the answers/findings of those questions and the methodology behind it

**Methodology**

The QA system was built in 3 stages. These were briefly outlined in the executive summary. However, this section will attempt to be more comprehensive. The first stage, question analysis, sought to determine the identifiers of the question. This included determining the question type (person, location, time, quantity etc.) as well as determining the key words of the question, defined as all words with the right part of speech tag as well as all entities determined by the Stanford Names Entity Recognizer.

In the next stage, document selection, we used the keywords from the question and scored all documents and articles using the tf-idf method. Only the top scoring articles were kept as documents with potential candidate answers

In the final stage, answer analysis, we again applied the tf-idf method and scored each sentence of each document as determined in the previous stage. The highest scoring sentence was then tagged by either the Stanford NER or POS tagging (determined by question type) to extract the final answer.

**Findings**

The QA system proved to be very successful. It was able to successfully identify the CEO’s of major companies. However, using questions like “Which company went bankrupt in XXXX?”, the system was not as accurate as desired. This was due to one main bottleneck in the Stanford NER’s inability to classify many companies as ‘ORGANIZATIONS’. Since this is the method the system uses to scrape the final answer from the highest scoring sentence, it will fail to produce an accurate answer in this scenario. Regardless of the bottlenecks imposed by the Stanford NER and Nltk’s POS tagging, the system was still very successful overall. We were able to determine the percentage drop/increase of certain metrics. For example, the system was able to accurately identify that the percentage increase in GDP associated with improved living standards was 7%. Likewise, the system was able to determine that personal consumption expenditures was able to add 1.53 percentage points to the GDP. These answers have obvious business implications (attempting to improve GDP, gaining information on company competitors) that can help an individual and/organization achieve its goals.