DEFINITION OF DONE

1. PROJECT INFORMATION

Project Name: Abstractive Conversation Summarizer With Open Source AI Tools (ACSWOSAT)
Date of Submission: 4/3/2023
Version: 1.0
Client: Impact Intell

2. PROJECT TEAM

Team Member	Role	Responsibilities
Akshat Baranwal	Product Owner	Project Scope and Definition, Tasks
Steven Warner	Scrum Master	Tasks
Mark O'Connor	Developer	Production Environment and User Documentation
Cameron Caruso	Developer	Burn up Chart
Parth Dalwadi	Developer	Definition of Done: Checklist
Michael Provenzano	Developer	How is Success Defined?

3. PROJECT SCOPE AND DEFINITION

ACSWOSAT is an AI-powered text summarization tool that can analyze text conversations from a client's database, and then generate a brief paragraph that displays the major highlights. The tool will be based on open-source machine learning libraries and will be implemented on the client's Python Django based web server. The goal of the project is to enable police officers to communicate effectively with members of their department as well as other departments by providing them with a tool that can summarize text conversations into easily digestible summaries. The project is a response to the problem of criminals using information silos to evade law enforcement.

The scope of the project includes developing a machine learning algorithm that can process text conversations and produce summaries that mimic human-like summaries. The algorithm will be integrated into the client's Python Django based web server, which will enable police officers to communicate more effectively across cases and departments. Furthermore, the algorithm will have the ability to retrieve text conversations based on a user's specified date range. The project is focused on solving the issue of criminals using information silos to evade law enforcement by providing a tool that facilitates communication across law enforcement agencies.

The problem that the project seeks to solve is the use of information silos by criminals, which makes it difficult for law enforcement agencies to coordinate and communicate effectively. The project seeks to address this problem by providing a tool that can summarize text conversations and enable more efficient communication across law enforcement agencies.

The outcome of the project is to develop an AI-powered text summarization tool that can generate human-like summaries of text conversations. The success of the project will be measured using metrics such as **Bleu, ROGUE, and METEOR**, which evaluate the quality of the generated summaries. The tool will enable more efficient communication and coordination among law enforcement agencies, making it more difficult for criminals to evade justice.

Privacy concerns and server environment will constrain our deliverables. The server environment will dictate that all deliverables will have to be written in the Python programming language. Due to privacy concerns about data, no data being accessed can be sent to any third parties. All Python tools used must be open sourced to avoid this concern.

4. COMMON TERMS AND DEFINITIONS

Text Channel: A text channel includes text conversations between two individuals.
Chat Rooms: Chat rooms are places where two or more individuals can text and share information.

5. HOW IS SUCCESS DEFINED?

The project team will define the success of the summary generator based on the precision of the model, the model's ability to recall words from a target summary during training, and the model's ability to maintain semantic accuracy in the generated summaries. Additionally, the team will measure success based on the model's ability to integrate safely into the existing server environment.

The metrics of Bleu Score, ROGUE Score and METEOR Score shall be used in measuring the success of the model. Bleu Score is a metric that measures the precision of the model during training. This will be done by measuring the similarities between generated summaries and target summaries. ROGUE Score shall measure the model’s recall ability by tracking how many words in the generated summary were in the reference summary. METEOR Score will measure the model’s ability to keep a semantically sound summary. This shall be done by aligning the words of the generated and target summaries.

Testing of all 3 different scores shall be calculated and quality will be ensured by training the model until all 3 scores have a minimum value of ~0.20. These scores shall be evaluated during training sessions.

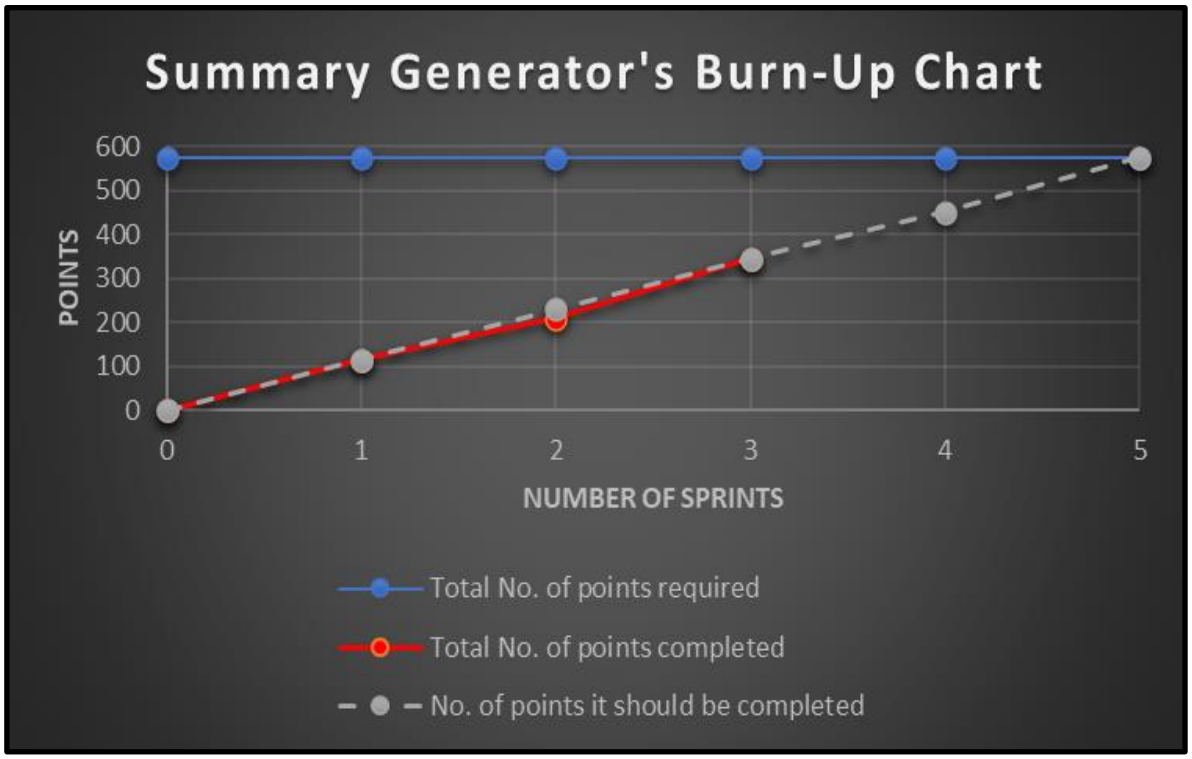
6. DEFINITION OF DONE: CHECKLIST

The primary epic in the project team's product backlog is that as a secure online chat provider, we want to provide a feature to allow users to generate pdf summaries of chat logs within a given time range.

The preliminary logical progression of increments in development that our team goes by are known as Sprints. In total, there are five Sprints, with each having a certain goal to be achieved and the potential to be a shippable product. For each Sprint from 1 to 5, the shippable products would be: a data cleaner, a decision tree to remove unneeded sentences, a basic summary generator, a refined basic summary generator, and a fully working basic summary generator that incorporates everything that was coded prior.

Code for each increment will be tested by first making sure that everything essential compiles properly. The project team will then do unit testing in which they will check a variety of inputs and see if they all meet the score requirements. If an input does not meet the criteria, the project team will then fix the code that is not working properly, or decipher the general issue. After that the project team will discuss if there is anything to improve the code such as utilizing better algorithms to reduce runtime, or better coding principles in general. Once the project team has refined the code, they will then properly document the functions, or code in general, that require comments.

7. BURN UP CHART



8. TASKS

In software development, an Epic, User Story, Acceptance Criteria, and Tasks are all different components used to manage the development process.

An Epic is a large body of work that cannot be completed in a single development cycle. Epics are typically broken down into smaller User Stories that can be completed in a single development cycle.

A User Story is a small, concise description of a feature or functionality that a user needs. User Stories are written from the perspective of the end-user and describe what the user wants to achieve or accomplish. User Stories are used to communicate user requirements to the development team.

Acceptance Criteria are specific conditions that a User Story must meet in order to be considered complete. Acceptance Criteria are typically defined by the Product Owner and outline the functionality that the User Story must deliver. Acceptance Criteria are used to ensure that the development team is working on the right tasks and to ensure that the end product meets the user's requirements.

Tasks are the specific activities that the development team needs to complete in order to deliver a User Story. Tasks are often broken down into smaller, more manageable pieces of work that can be completed in a single day or a few days. Tasks are used to

track progress and to ensure that the development team is working towards completing the User Story within the given timeframe.

9. PRODUCTION ENVIRONMENT

The development team is using the client's server as their testing environment. Within this environment, the product is being tested for a number of different parameters such as assuring that the product will compile without error. Our product will be pushed to production by merging our branch of the server to the clients main server.

10. USER DOCUMENTATION

The user documentation will provide instructions on how to further train the model. This will include how to format datasets for training, how to adjust training parameters and how to interpret results. The user documentation shall also include general use information, such as how a user can generate a summary when in a text channel. Information about how to adjust the summary generator, such as adjusting the minimum and maximum length, will also be included.