

GridGPT

Lightning Talk 6

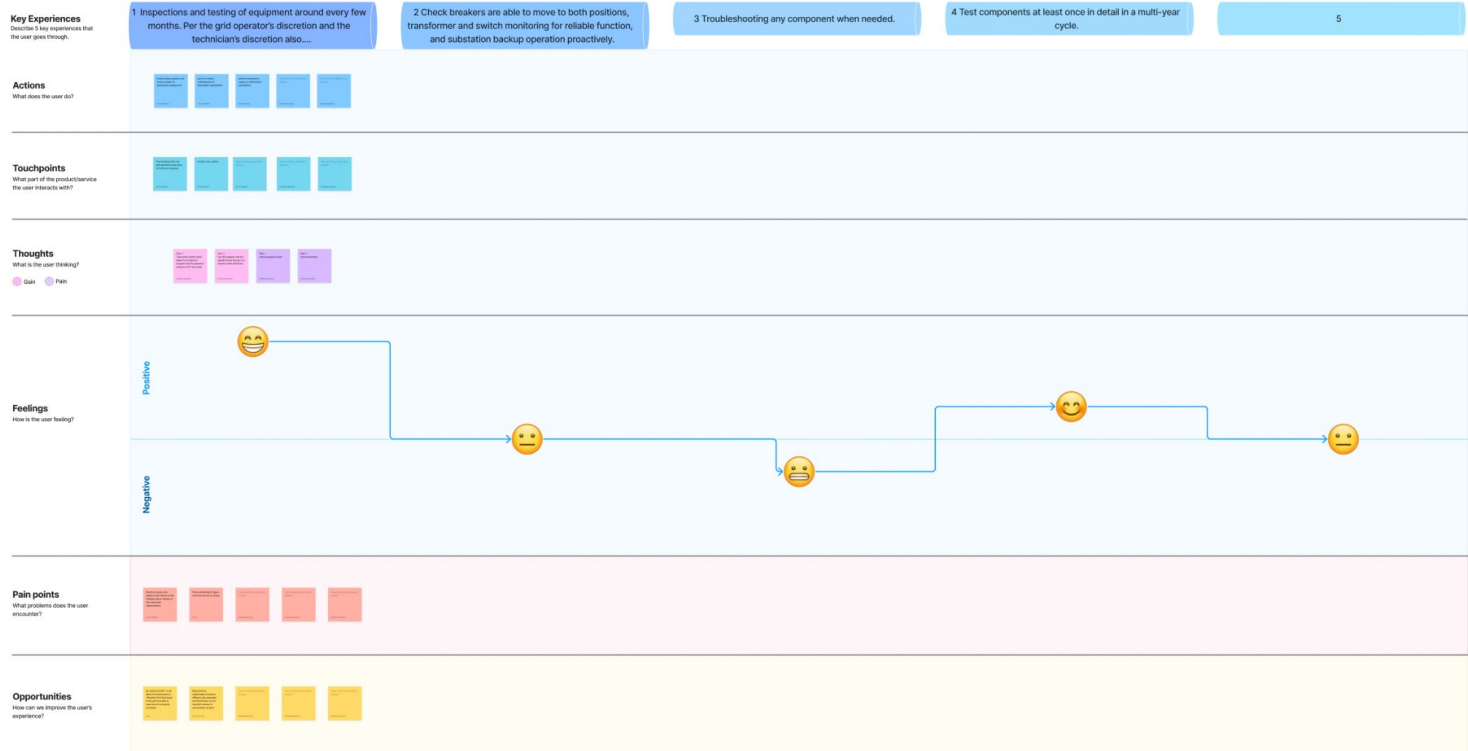
Project Overview

- Simplifies power grid management through AI-based solutions.
- Streamlines the complex and ever evolving power system data.
- Translates DSS scripts into natural language for ease of understanding by power plant employees.

Artifacts created by the Team in class

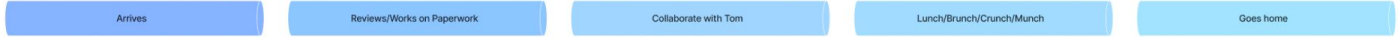
- The following slides are artifacts that our team has created during class in Senior Design. They include:
 - Journey Maps for our users
 - Market Research
 - Lotus Diagram
 - Task Decomposition
 - Gantt Chart
- Most of these artifacts are subject to change as we progress forward through the development.

Journey Map for our user Technical Tom



Journey Map for our user Power Plant Pete

Key Experiences
Describe 3 key experiences that the user goes through.



Actions
What does the user do?



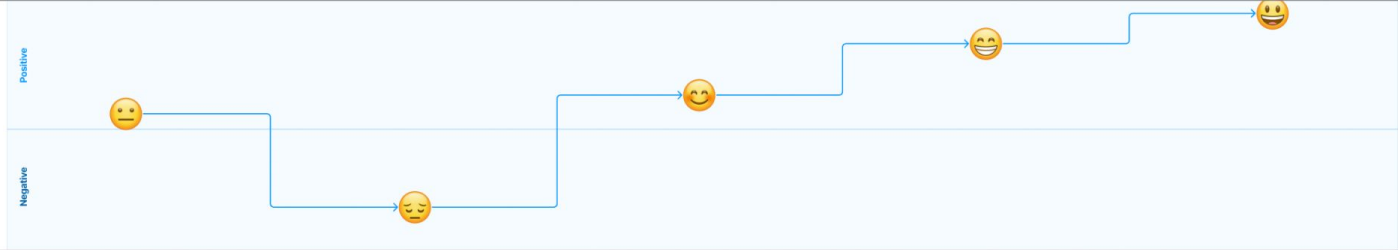
Touchpoints
What part of the product/service the user interacts with?



Thoughts
What is the user thinking?
● Gain ● Pain



Feelings
How is the user feeling?



Pain points
What problems does the user encounter?



Opportunities
How can we improve the user's experience?



Market Research

	<p><i>Unique Value Proposition</i> What makes this company unique?</p>	<p><i>Company Advantages</i> What are the things that provide a leg up?</p>	<p><i>Company disadvantages</i> Where might drawbacks exist?</p>
<p>OpenAI</p>	<ul style="list-style-type: none"> It is dominating the market with 63.4% market share. It is the most successful model. Their models are used and effective in responding to user prompts. Available in applications. 	<ul style="list-style-type: none"> Massive base of researchers and developers. High capital to spend on R&D. It is very well funded or allows to attract top talent. It is very diverse and can experiment with a range of ideas. They have the physical and digital resources to scale their models. Their models are open source. Generates versions of models. 	<ul style="list-style-type: none"> Information may not be 100% accurate. Models have potential to be used in harmful ways, and there is a risk to control it. Needs more regulations from models. No model available to everyone as they are not open source.
<p>GitHub Copilot</p>	<ul style="list-style-type: none"> Can easily attach to VS Code. A GitHub tool, which is already used by many programmers for development. Can scan multiple files of source code generated answers for the user. 	<ul style="list-style-type: none"> Already dominating the market with 55.8%. Backed by Microsoft, currently the biggest company in the world. 	<ul style="list-style-type: none"> It is specifically tailored on coding and does not support everything. Their models generate errors.
<p>Google Gemini</p>	<ul style="list-style-type: none"> Not limited to text input. Images, audio. Can be used across Google products, like Smart Reply in Gmail. Businesses further reports on various subjects. It is a Multimodal Language Understanding model. 	<ul style="list-style-type: none"> Largest search engine. High investor return of 20%. Increased accuracy and efficiency compared to other AI models. Personalized personalization. 	<ul style="list-style-type: none"> Not very well suited to help our goal of customer - generates harmful responses. In addition to first being code - it likely has a edge in its responses.

Market Research cont.

Similar Capabilities
What do all the companies have in common?

They have a lot of data and resources that have access to → Biggest companies in the world right now.

They all generate a response given a user input.

Apparent Differences
What are the differences between the companies?

All of them have different use-cases. One is for general knowledge NLP, one is for coding in RICE, one is specific knowledge (Microsoft Language).

Some have more resources than others, and they also have learned their needs before releasing to the general public.

Findings

Key Learnings
What can we learn from this process?

The competitors that we are competing against is really tough. It is currently what all competitors are focusing on.

How we can go about making our model efficient with its responses.

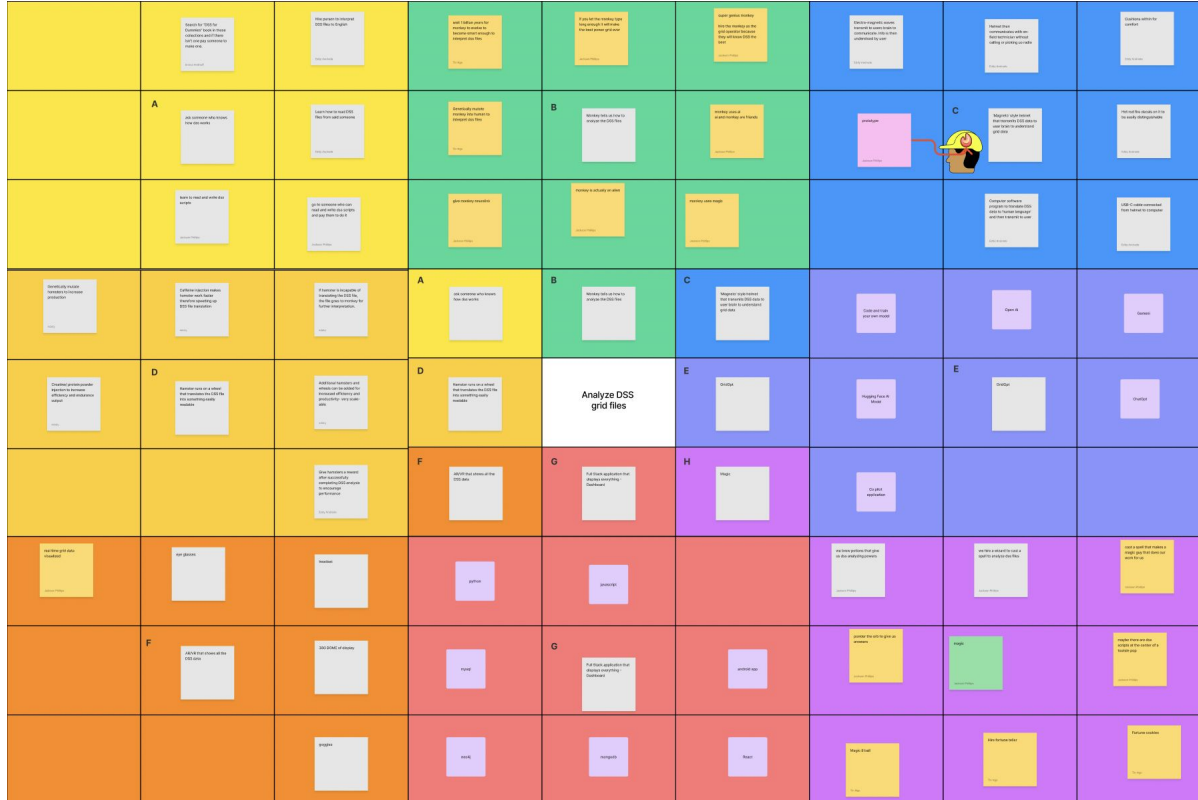
Opportunities

Opportunities
Where can we progress or create value?

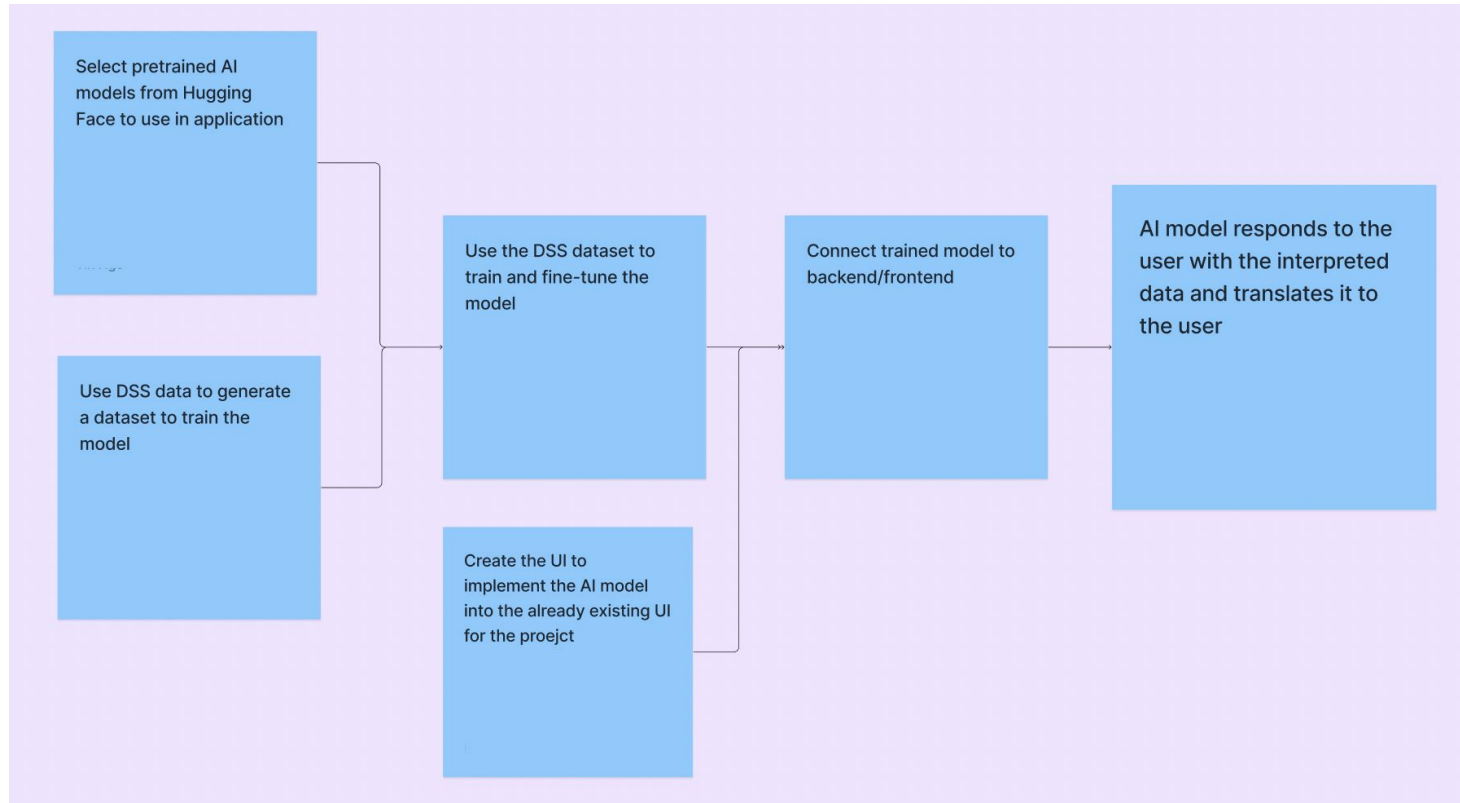
Make a virtual assistant that can understand OSS specific data and generate a response better than competition.

Since our model will target one specific area, we can optimize the model to make an efficient response.

Lotus Diagram



Task Decomposition



Human Aspects

- Key Points:
 - User Challenges Identified:
 - Overwhelmed by the complexity of DSS script data.
 - Struggle to extract actionable insights from vast data sets.
 - AI Solution Response:
 - AI Chatbot Assistant: Tailored to simplify data interpretation.
 - Direct address of user frustrations by transforming complex data into accessible insights.
 - Looking Ahead:
 - Considering user feedback for future enhancements.
 - Potential for AI autonomy to further alleviate user challenges.
- Impact:
 - Significantly reduces the cognitive load on users.
 - Empowers users to focus on higher-level analysis and decision-making.

Pain points and frustrations

Pete gets frustrated when the power goes out.

Jackson Phillips

Pete gets upset when he can't understand complex power grid data.

Jackson Phillips

Pete gets sad when his football team loses.

Jackson Phillips

Pete hates how disorganized he is. He is self aware of that. 🤔

Eddy Andrade

Economic

Currently grid operators must learn everything about DSS python scripts in order to create grid models. With our solution we will be able to cut down on the time grid operators need to be trained on the DSS scripts and the time to write the scripts for the grid models. Our AI model will also be less likely to make simple mistakes like humans do when writing code. Overall our solution will save a lot of time and create less problems which will save lots of money.