Design Thinking Project Workbook

Don't find customers for your product but find products for your customers

Team 21

Team Name:
Automatic Sentence Predicter (Team 21)

Team Logo:

Team Members:

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2. Problem/Opportunity Domain

Domain of Interest:
Our project domain is **"Artificial Intelligence using Natural Language Processing (NLP)"**

Description of the Domain:
Key Elements:

- Data: Large datasets of text for training models.
- Algorithms: Advanced machine learning and deep learning techniques.
- Applications: Chatbots, virtual assistants, and automated content creation.

Challenges:

- Data Quality: Ensuring the data used is clean and representative.
- Model Accuracy: Achieving high accuracy in predictions.
- Ethical Concerns: Addressing biases in AI models.

Opportunities:

- Innovation: Developing new applications and improving existing ones.
- Efficiency: Automating tasks that require human language understanding.
- Market Growth: Expanding the use of AI in various industries**.**

Why did you choose this domain?

- **Passion**: A strong interest in AI and its potential to transform how we interact with technology.
- **Market Potential:** The growing demand for AI-driven solutions in various sectors, including customer service, healthcare, and education.
- **Solving a Specific Problem:** Addressing the need for more efficient and accurate text prediction tools to enhance user experience and productivity.

3. Problem/Opportunity Statement

Problem Statement:
The current methods for predicting sentences in text-based applications are often inaccurate and inefficient, leading to poor user experiences and reduced productivity. This problem is critical as it affects the efficiency of communication and the overall user satisfaction with text-based tools.

Problem Description:
The issue at hand is the lack of accurate and efficient sentence prediction in text-based applications. Users frequently find themselves spending additional time correcting errors or manually typing out sentences that could have been predicted by a more advanced system. This inefficiency not only slows down the writing process but also increases the likelihood of errors and inconsistencies in the text. As a result, users experience frustration and decreased productivity, which can be particularly problematic in professional and academic settings where clear and concise communication is essential. Moreover, the current solutions often fail to provide relevant and contextually appropriate suggestions, further exacerbating the problem. Therefore, there is a pressing need for a more sophisticated AI-driven solution that can offer accurate and efficient sentence predictions, ultimately enhancing the overall user experience and productivity.

Context (When does the problem occur):
This problem typically occurs in various scenarios, including:

- **Email Composition:** When users are drafting emails and need quick, accurate sentence suggestions to maintain a professional tone and coherence.
- **Messaging Apps:** During real-time conversations where users need to respond quickly and accurately.
- **Document Writing:** While creating reports, essays, or any long-form content where sentence prediction can significantly speed up the writing process.
- **Customer Service:** In chatbots and virtual assistants where accurate sentence prediction can improve response times and customer satisfaction.

Alternatives (What does the customer do to fix the problem):
Currently, customers use several methods to address this issue:

- **Basic Autocomplete Features:** These provide limited and often inaccurate suggestions.
- **Manual Typing:** Users type out sentences manually, which is time-consuming.
- **Third-Party Grammar and Writing Tools:** Tools like Grammarly or Hemingway Editor help improve writing but may not offer real-time sentence prediction.
- **Templates and Canned Responses:** Pre-written templates are used, but they lack the flexibility and personalization of real-time sentence prediction.

Customers (Who has the problem most often):

The primary groups affected by this problem include:

- **Professionals**: Individuals who frequently write emails, reports, and other documents.
- **Students**: Those who need to write essays, assignments, and research papers.
- **Writers**: Authors, bloggers, and content creators who require efficient writing tools.
- **Customer Service Representatives**: Agents who use chatbots and virtual assistants to interact with customers.
- **General Users**: Anyone who engages in text-based communication regularly.

Emotional Impact (How does the customer feel):

Customers often experience frustration and inefficiency due to the lack of accurate sentence predictions. This can lead to:

- **Stress:** From spending extra time correcting errors.
- **Annoyance:** Due to irrelevant or incorrect suggestions.
- **Disappointment:** With the overall performance of text-based applications.
- **Reduced Productivity:** Feeling less productive due to the additional effort required.

Quantifiable Impact (What is the measurable impact):

The measurable impacts of this problem include:

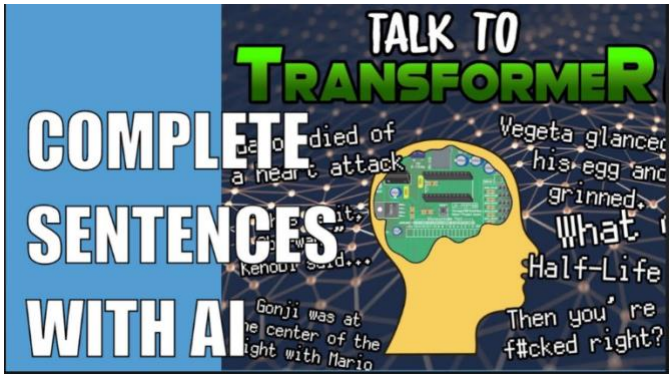
- **Increased Time Spent**: More time is required to complete writing tasks.
- **Higher Error Rates**: Increased likelihood of errors in written communication.
- **Financial Losses**: Potential losses due to decreased productivity and efficiency.
- **Reduced User Satisfaction**: Lower satisfaction scores from users of text-based applications.

Alternative Shortcomings (What are the disadvantages of the alternatives):

The current alternatives have several limitations:

- **Basic Autocomplete Features**: Often provide irrelevant or incorrect suggestions.
- **Manual Typing**: Time-consuming and prone to errors.
- **Third-Party Tools**: May not integrate seamlessly with all text-based applications and lack real-time prediction capabilities.
- **Templates and Canned Responses**: Lack flexibility and personalization, making them less effective in dynamic conversations.

Any Video or Images to showcase the problem:



https://youtu.be/FTBOUMgfXuU?si=9iePawTnYzb6jpTF

4. Addressing SDGs

Relevant Sustainable Development Goals (SDGs):

1. **Quality Education (SDG 4):** Enhancing sentence prediction can improve educational tools, making learning more efficient and accessible. This can help students achieve better academic outcomes by providing real-time assistance and feedback. Additionally, it can support teachers in creating more engaging and personalized learning experiences.
2. **Decent Work and Economic Growth (SDG 8):** By increasing productivity and efficiency in text-based tasks, this technology can contribute to economic growth. It allows professionals to focus on more strategic activities, reducing the time spent on repetitive tasks. This can lead to higher job satisfaction and the creation of new job opportunities in the tech sector.
3. **Industry, Innovation, and Infrastructure (SDG 9):** Developing advanced AI solutions promotes innovation and strengthens technological infrastructure. This fosters a culture of continuous improvement and technological advancement, encouraging industries to adopt cutting-edge technologies. It also supports the development of robust and resilient infrastructure that can adapt to future needs.
4. **Reduced Inequalities (SDG 10):** Improved AI tools can provide equal access to high-quality writing assistance, reducing disparities in education and professional opportunities. This helps create a more inclusive society by levelling the playing field for individuals from diverse backgrounds. It ensures that everyone has the opportunity to succeed, regardless of their starting point.
5.

How does your problem/opportunity address these SDGs?

1. **Quality Education (SDG 4):** By integrating advanced sentence prediction into educational platforms, students can receive real-time assistance, enhancing their writing skills and learning experience. This can lead to better educational outcomes and more equitable access to quality education.
2. **Decent Work and Economic Growth (SDG 8):** Efficient sentence prediction tools can streamline workflows, reduce the time spent on writing tasks, and minimize errors. This boosts productivity and allows professionals to focus on more strategic activities, thereby contributing to economic growth.
3. **Industry, Innovation, and Infrastructure (SDG 9):** Investing in AI-driven sentence prediction fosters innovation in the tech industry. It encourages the development of new applications and services, strengthening the technological infrastructure and promoting sustainable industrial growth.
4. **Reduced Inequalities (SDG 10):** Providing advanced writing tools to a broader audience helps level the playing field. Individuals from diverse backgrounds can access high-quality writing assistance, which can improve their educational and professional prospects, thereby reducing inequalities.

5. Stakeholders

Answer these below questions to understand the stakeholder related to your project

1. **Who are the key stakeholders involved in or affected by this project?**

- **Developers and Engineers**: Responsible for building and maintaining the AI system.
- **End Users**: Professionals, students, writers, and customer service representatives who will use the sentence prediction tool.
- **Educational Institutions**: Schools and universities that may integrate the tool into their learning platforms.
- **Businesses**: Companies that could benefit from increased productivity and efficiency.
- **Investors and Sponsors**: Entities providing financial support for the project.
- **Regulatory Bodies**: Organizations ensuring compliance with data privacy and ethical standards.

2. **What roles do the stakeholders play in the success of the innovation?**

- **Developers and Engineers:** Design, develop, and optimize the AI models.
- **End Users:** Provide feedback and validate the effectiveness of the tool.
- **Educational Institutions:** Implement the tool in educational settings and assess its impact on learning.
- **Businesses:** Adopt the tool to improve operational efficiency and productivity.
- **Investors and Sponsors:** Fund the project and support its growth.
- **Regulatory Bodies:** Ensure the project adheres to legal and ethical guidelines.

3. **What are the main interests and concerns of each stakeholder?**

- **Developers and Engineers**: Interest in technological innovation and career growth; concern about technical challenges and resource constraints.
- **End Users**: Interest in improved productivity and user experience; concern about accuracy and reliability of predictions.
- **Educational Institutions**: Interest in enhancing learning outcomes; concern about integration with existing systems and data privacy.
- **Businesses**: Interest in cost savings and efficiency; concern about return on investment and implementation challenges.
- **Investors and Sponsors**: Interest in financial returns and project success; concern about project viability and market acceptance.
- **Regulatory Bodies**: Interest in compliance and ethical standards; concern about data privacy and potential misuse of AI.

4. **How much influence does each stakeholder have on the outcome of the project?**

- **Developers and Engineers:** High influence due to their role in creating the technology.
- **End Users:** High influence through feedback and adoption rates.
- **Educational Institutions:** Moderate influence based on their adoption and integration of the tool.
- **Businesses:** High influence due to potential widespread adoption and financial investment.
- **Investors and Sponsors:** High influence through funding and strategic direction.
- **Regulatory Bodies:** High influence through compliance requirements and regulations.

5. **What is the level of engagement or support expected from each stakeholder?**

- **Developers and Engineers:** High engagement in development and continuous improvement.
- **End Users:** Moderate to high engagement in providing feedback and using the tool.
- **Educational Institutions:** Moderate engagement in implementation and evaluation.
- **Businesses:** High engagement in adoption and integration into workflows.
- **Investors and Sponsors:** High engagement in funding and strategic oversight.
- **Regulatory Bodies:** Moderate engagement in ensuring compliance and ethical standards.

6. **Are there any conflicts of interest between stakeholders? If so, how can they be addressed?**

Potential Conflicts:

- Developers vs. End Users: Developers may prioritize technical features, while end users focus on usability.
- Businesses vs. Regulatory Bodies: Businesses may push for rapid deployment, while regulatory bodies emphasize compliance.

Addressing Conflicts:

- Regular Communication: Ensure open and transparent communication channels.
- Stakeholder Meetings: Hold regular meetings to align goals and address concerns.
- Compromise and Negotiation: Find middle ground solutions that satisfy all parties.

7. **How will you communicate and collaborate with stakeholders throughout the project?**

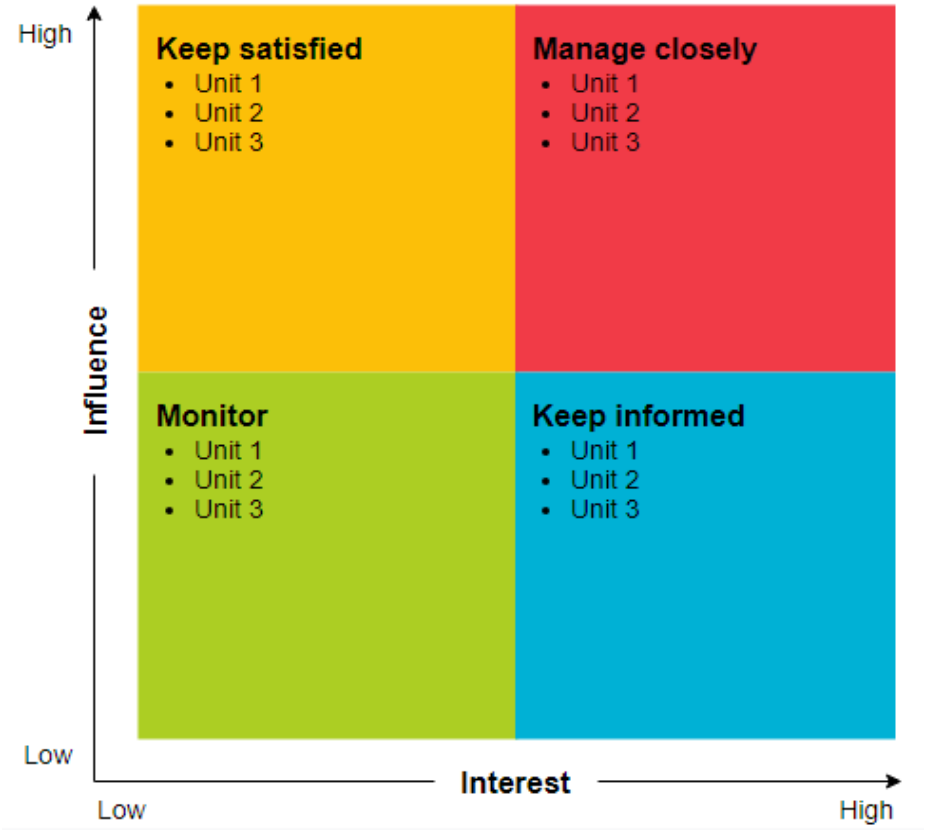
- **Regular Updates**: Provide frequent project updates through emails, newsletters, and reports.
- **Stakeholder Meetings:** Schedule regular meetings to discuss progress, challenges, and feedback.
- **Feedback Mechanisms:** Implement channels for stakeholders to provide feedback and suggestions.
- **Collaborative Platforms:** Use project management and collaboration tools to facilitate communication and coordination.

8. **What potential risks do stakeholders bring to the project, and how can these be mitigated?**

- **Developers and Engineers:** Risk of technical challenges and delays; mitigate through thorough planning and resource allocation.
- **End Users:** Risk of low adoption and negative feedback; mitigate by involving users in the development process and addressing their needs.
- **Educational Institutions:** Risk of integration issues; mitigate by providing support and training.
- **Businesses:** Risk of implementation challenges; mitigate by offering customization and support services.
- **Investors and Sponsors:** Risk of funding withdrawal; mitigate by maintaining transparency and demonstrating progress.
- **Regulatory Bodies:** Risk of non-compliance; mitigate by adhering to regulations and ethical standards from the outset.

6. Power Interest Matrix of Stakeholders

Power Interest Matrix:



- High Power, High Interest:

  Project Supervisor & Team Members

- High Power, Low Interest:

  University Administration

- Low Power, High Interest:

  End Users (Students/Peers) & Industry Experts

- Low Power, Low Interest:

  General Public

7. Empathetic Interviews

Conduct Skilled interview with at least 30 citizens/Users by asking open ended questions (What, why/How etc) and list the insights as per the format below

I need to know (thoughts, feelings, actions)	Questions I will ask (open questions)	Insights I hope to gain
Thoughts	Do you use sentence predicters in your daily life?	To learn from customers the frequency with which they use AI.
	Why do you want to use them? Do they help save time	To understand that these tools benefit the users.
	What can we do to improve it?	Any feedback or suggestions from their side will be helpful.
Feelings	How can one better the speed and efficiency?	Methods to improve speed and accuracy of the predictions.
	What are some additional features you want?	Additional add-ons to make the model sharper and has context.
	Is it very frustrating when AI model predictions are random?	Typing a lot can be very frustrating and annoying especially for software people.
actions	How can AI models be improved?	AI technology can be improved by various technics.
	Is there anything that you would like to add?	The input from customers is proven to be very valid.
	Why are customers so dissatisfied with current technology	Customers side of the story is vital for the empathizing with their needs.

SKILLED INTERVIEW REPORT

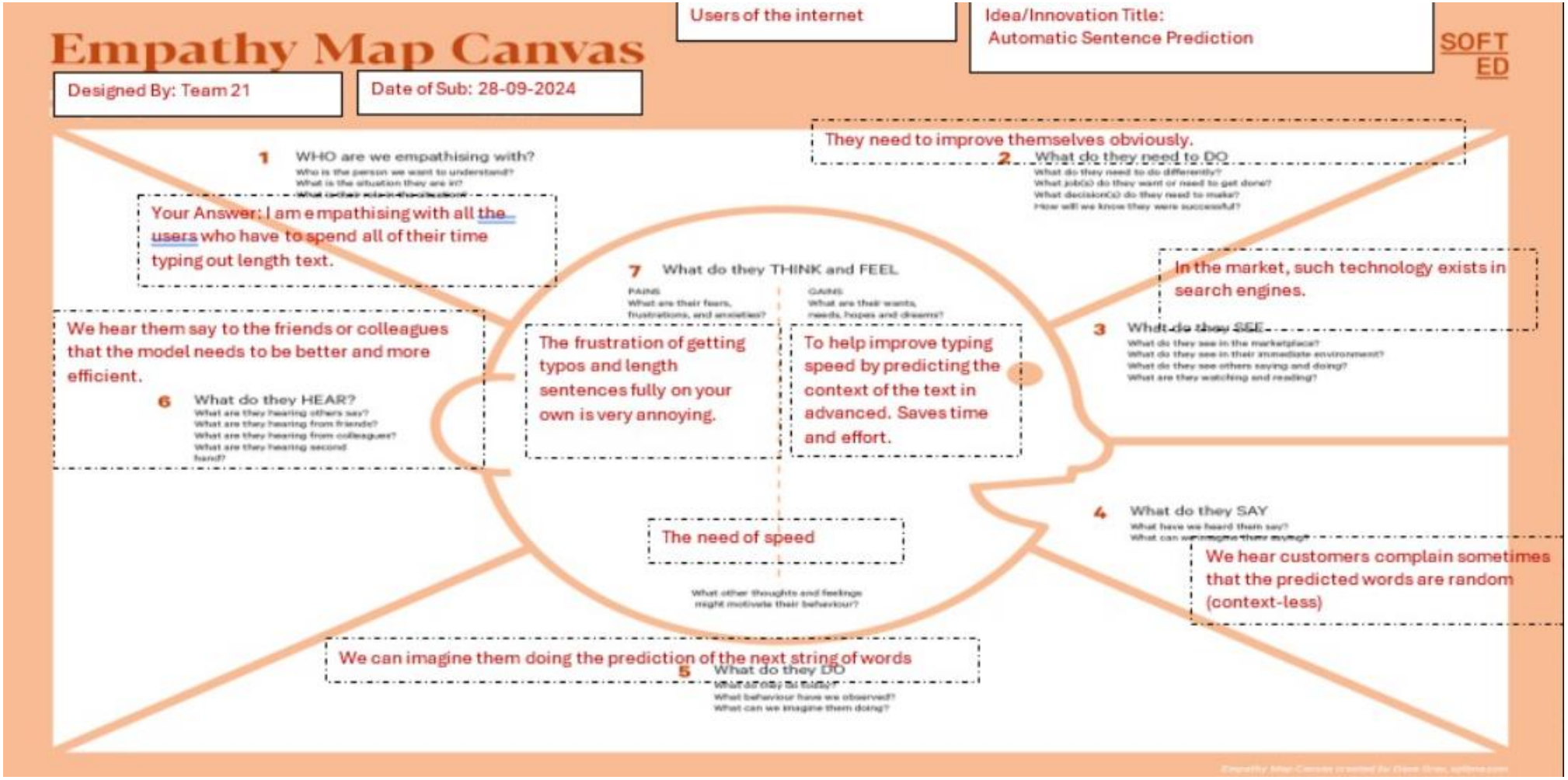
User/Interviewee	Questions Asked	Insights gained (NOT THEIR ANSWERS)
Srilakshmi, teacher	What is sentence predicter? Do you use them?	Public knows about sentence predictor (AI tool that suggests the next sentence based on the context of previous sentences.)
Srinidhi, Parent	How do you feel about the rise in AI for sentence predictions.	Yes, they use sentence prediction to assist in generating coherent and contextually relevant responses
Mister Rao, typist	What in your opinion is the key to making a good AI word predicter?	The rise in AI for sentence predictions is exciting for all as it enhances communication and productivity tools.
Miss Devi, student	In your opinion, how the market can better the user experience.	They believe that the key to making a good AI word predictor is training it on diverse and extensive datasets.
Mr. Ravi, software	What can be done to help improve speed of suggestions	Improving the speed of suggestions can be achieved by optimizing algorithms and using faster hardware.

Key Insights Gained:

- **Key to Success**: Training on diverse and extensive datasets is crucial for creating effective AI word predictors.

- **Speed Improvement**: Optimizing algorithms and using faster hardware can enhance the speed of suggestions.

Empathy Map


Empathy Map Canvas
Users of the internet
Idea/Innovation Title:
Automatic Sentence Prediction
SOFT ED
Designed By: Team 21
Date of Sub: 28-09-2024
1 WHO are we empathising with?
Your Answer: I am empathising with all the users who have to spend all of their time typing out length text.
They need to improve themselves obviously.
2 What do they need to DO
In the market, such technology exists in search engines.
3 What do they SEE
We hear them say to the friends or colleagues that the model needs to be better and more efficient.
6 What do they HEAR?
7 What do they THINK and FEEL
PAINS
What are their fears, frustrations, and anxieties?
GAINS
What are their wants, needs, hopes and dreams?
The frustration of getting typos and length sentences fully on your own is very annoying.
To help improve typing speed by predicting the context of the text in advanced. Saves time and effort.
The need of speed
What other thoughts and feelings might motivate their behaviour?
4 What do they SAY
We hear customers complain sometimes that the predicted words are random (context-less)
We can imagine them doing the prediction of the next string of words
5 What do they DO
What behaviour have we observed?
What can we imagine them doing?

• Empathy Map

a. **Who is your customer?**

Key points:

- **Our customers are everyone who is involved with typing, which is in other words most people in the modern era.**
- **Our clientele is looking for ways to improve the speed and efficiency of their typing. They want to get work done fast.**
- **The user is always looking for the latest technology to help them in their daily tasks, especially something as vital and monotonous as typing.**

b. **Who are we empathizing with?**

Key points:

- **Users want the task of writing prompts or in general writing to be simplified.**
- **Software and other fields include a lot of data in the format of text for book-keeping and other needs. Typos and other such mishaps slow them down.**
- **The clients want to work with typing without feeling frustrated and annoyed by it all, so they need a tool to help save energy, time and effort.**

c. **What do they need to DO?**

Key points:

- **Awareness about automatic sentence predictors must be wide speared making them enjoy the task of writing.**
- **They need to make the decision of using AI tools to help predict the nest string of words for them.**
- **If the model is able to successfully help them with dealing with writing by providing apt suggestions, they have gained.**

d. What do they SEE?

Key points:

- **The users will be able to enter a prompt in terms of a sentence and mid-way the AI will make helpful suggestions based on context.**
- **They will see a rise in such auto-correction AI models in the market in the upcoming years.**
- **They will help make suggestions so that they can write well and convey their point exactly.**

e. What do they SAY?

Key points:

- **Users are often frustrated by the lack of context in suggestions made by other AI tools used for sentence prediction.**
- **They generally express their remarks on social media sites.**
- **Some of their words during customer interviews or feedback include: "dissatisfaction" "boring" "random and useless".**

f. What do they DO?

- **Users often end up getting irritated by the typing and look for alternative AI tool.**
- **They generally end up typing what they want completely due to lack of proper technology.**
- **Users look to the market to help solve their problems.**

g. What do they HEAR?

Key points:

- **The industry or peers around them say that more work will be done in this field.**
- **Mostly due to advertisements from powerful companies they get to know about the latest tech.**
- **There are quite a lot including social media sites, blogs and web-pages.**

h. **What do they THINK and FEEL?**

Key points:

- **Some of their fears, worries, and anxieties include trouble with handling large amount of typing.**
- **Their motivations and desires include the need for speed, the improvement of efficient.**
- **Their actions are motivated by the news around them and the availability of good technology.**

i. **Pains and Gains**

Key points:

- **The users are annoyed with the pace of prediction and sometimes it's very irrelevant.**
- **Some things that make their life easier or more fulfilling is good AI tools to help them get done more in less time.**

8. Persona of Stakeholders

Stakeholder Names:

- **Users of the internet.**
- **Software employees.**
- **MNCs.**
- **Typists.**
- **Browsers in Search Engines.**

Demographics:

- **Approx Age criteria – 10 to 80 years of age.**
- **Genders who use our product - All inclusive.**
- **Income brackets expected – All income including Nill.**
- **Location of the client base – All over the world.**

Goals:

- **What the stakeholders or customers want to achieve in relation to the innovation.**
- **Stakeholders want profits from the venture.**
- **A return for the investment made.**
- **Customers on the other hand want a good product.**
- **The quality of service and efficiency of end product are primary concern for them.**

Challenges:

- **The obstacles or difficulties faced by stakeholders that the innovation aims to address are as follows:**
- **Stakeholders must deal with so many issues initially like marketing and spreading awareness to the general public of why they should purchase the product.**
- **Ones the customers realize the benefits and advantages of product they will buy it and automatically the market will boom.**

Aspiration:

- **The long-term desires or dreams of your target audience related to the innovation is that:**
- **The audience wants a product that will benefit their life.**
- **It should make it easier for them to work, helpful.**
- **The dream of the target clientele is that they can get a good sentence predicter.**

Needs:

The essential requirements of your customers or stakeholders that must be met.

- **It is met by the AI model used for sentence prediction.**

Pain Points:

Specific problems or frustrations experienced by the target audience are:

- **Weird suggestions that are randomly generated or not catering to their needs.**
- **Typos and the difficulty of handling so much text by typing every single word on their own without any external AI help.**
- **It frustrates them and they end up being miserable.**

Storytelling:

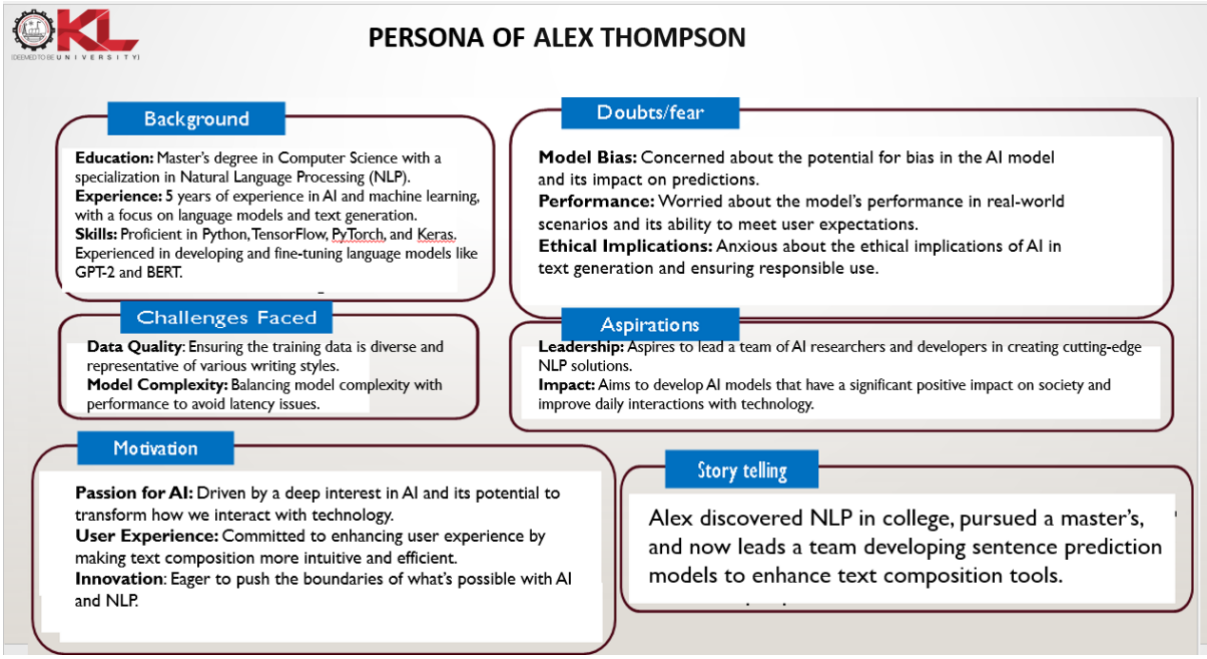
Title: Transforming Customer Support with Automatic Sentence Prediction

Meet Priya, a dedicated customer support representative at a bustling tech company. Every day, she handles numerous customer queries, ranging from simple troubleshooting to complex technical issues. Despite her expertise, the sheer volume of inquiries often leaves her feeling overwhelmed and struggling to maintain response quality. With each customer needing unique

attention, she spends significant time typing out replies, leading to longer wait times and occasional errors. This not only affects customer satisfaction but also adds to her stress.

This innovative tool integrates seamlessly into Priya's customer support platform, analysing the context of each query and suggesting relevant, pre-formulated sentences. With just a click, Priya can insert these suggestions, ensuring her responses are both swift and precise.

With automatic sentence prediction, Priya's efficiency skyrockets. She now handles more queries in less time, with improved accuracy. Customers are happier with quicker, more consistent responses. This innovation not only enhances customer support but also transforms Priya's daily work experience, making it more manageable and rewarding.



9. Look for Common Themes, Behaviours, Needs, and Pain Points among the Users

Common Themes:

- **Efficiency and Productivity:** Users consistently seek tools that help them complete tasks more quickly and accurately.
- **User Experience:** There is a strong emphasis on the need for intuitive and user-friendly interfaces.
- **Accuracy and Reliability:** Users frequently mention the importance of accurate and reliable predictions in text-based applications.

Common Behaviours:

- **Frequent Corrections**: Users often find themselves correcting errors made by current sentence prediction tools.
- **Manual Typing**: Despite available tools, many users revert to manual typing due to dissatisfaction with existing solutions.
- **Feedback Provision**: Users are willing to provide feedback to improve the tools they use, indicating a desire for better solutions.

Common Needs:

- **Accurate Predictions:** Users need sentence prediction tools that offer high accuracy to reduce the time spent on corrections.
- **Seamless Integration**: There is a need for tools that integrate seamlessly with various text-based applications and platforms.
- **Real-Time Assistance:** Users require real-time assistance to enhance their writing speed and coherence

Common Pain Points:

- **Inaccuracy:** Current tools often provide irrelevant or incorrect suggestions, leading to frustration.
- **Time Consumption:** The need to manually correct errors or type out sentences slows down the writing process.
- **Lack of Customization:** Users find that existing tools do not cater to their specific needs or preferences, limiting their effectiveness.
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10. Define Needs and Insights of Your Users

User Needs

1. **Accuracy:** Users require a sentence prediction tool that provides highly accurate and reliable suggestions. This reduces the time spent on correcting errors and ensures that the text is coherent and contextually appropriate.
2. **Integration:** The tool must integrate seamlessly with various text-based applications such as email clients, word processors, and messaging apps. This allows users to benefit from sentence prediction across different platforms without any disruption to their workflow.
3. **Real-Time Assistance:** Users need real-time feedback to enhance their writing speed and coherence. Immediate suggestions help users maintain the flow of their writing and improve the overall quality of their text.
4. **Emotional Relief:** The tool should alleviate frustration and increase users' confidence in their writing abilities. By providing accurate and helpful predictions, users can feel more assured and less stressed about their writing tasks.
5. **Accessibility:** It is essential that the tool is accessible to users from diverse backgrounds, ensuring that everyone can benefit equally. This promotes inclusivity and helps reduce disparities in education and professional opportunities.

User Insights

1. **Frustration with Inaccuracy:** Users often experience frustration due to irrelevant or incorrect predictions provided by current tools. This leads to additional time spent on corrections and a decrease in overall productivity.
2. **Desire for Productivity**: Users are motivated by the need to improve their writing efficiency and the quality of their written communication. They seek tools that can help them complete tasks more quickly and accurately.
3. **Manual Typing:** Despite the availability of sentence prediction tools, many users revert to manual typing because they are dissatisfied with the accuracy and relevance of the suggestions. This indicates a significant pain point that needs to be addressed.
4. **Value Real-Time Feedback:** Users appreciate tools that provide immediate and relevant feedback. Real-time assistance helps them maintain the flow of their writing and reduces the cognitive load associated with composing text.
5. **Smooth Workflow Integration:** It is important for users that the tools they use integrate smoothly into their existing workflows. Disruptions or incompatibilities can lead to decreased efficiency and user satisfaction.

11. POV Statement

POV Statements:

PoV Statements (At least 10 questions)	Role-based or Situation-Based	Benefit, Way to Benefit, Job TBD, Need (more/less)	PoV Questions (At least one per statement)
A student	Needs a way to quickly draft essays	They often struggle with writer's block and tight deadlines	What can be designed to help students quickly draft essays and overcome writer's block?
A professional writer	Needs a way to generate content ideas	They need to maintain a steady flow of creative output	What can be designed to help writers generate content ideas and maintain creativity?
A customer service representative	Needs a way to respond to customer queries efficiently	They need to handle a high volume of inquiries quickly	What can be designed to help customer service reps respond to queries efficiently?
An educator	Needs a way to provide feedback on student writing	They want to help students improve their writing skills	What can be designed to help educators provide effective feedback on student writing?
A non-native English speaker	Needs a way to write grammatically correct sentences	They want to communicate effectively in professional settings	What can be designed to help non-native speakers write grammatically correct sentences?
A business executive	Needs a way to draft reports and emails quickly	They have a busy schedule, need to manage their time efficiently	What can be designed to help executives' draft reports and emails quickly?
A researcher	Needs a way to summarize large volumes of text	They need to extract key information quickly for their studies	What can be designed to help researchers summarize large volumes of text?
A blogger	Needs a way to generate engaging content	They need to attract and retain readers	What can be designed to help bloggers generate engaging content?
A marketer	Needs a way to create persuasive copy	They need to drive sales and engagement	What can be designed to help marketers create persuasive copy?
A job seeker	Needs a way to write compelling cover letters	They want to stand out to potential employers	What can be designed to help job seekers write compelling cover letters?

12. Develop POV/How Might We (HMW) Questions to Transform Insights/Needs into Opportunities for Design

Task:

User Need/Insight	"How Might We" Question
• Users need to respond to customer queries quickly and accurately.	• How might we leverage NLP and RNN to create a system that predicts and suggests accurate responses to customer queries in real-time?
• Users often struggle with maintaining consistency in their responses.	• How might we design an automatic sentence prediction tool that ensures consistency in tone and information across all customer interactions?
• Users need a tool that can adapt to different contexts and query types	• How might we develop a sentence prediction system that dynamically adapts to various contexts and types of customer queries?
	• How might we create a sentence prediction system that balances efficiency with the need for personalized, context-aware response.

• Users feel overwhelmed by the volume of queries and the need for personalized responses • Users require a system that integrates seamlessly with their existing customer support platforms	• How might we design an automatic sentence prediction tool that integrates effortlessly with current customer support software, enhancing user experience without disrupting workflows?

13. Crafting a Balanced and Actionable Design Challenge

The Design Challenge Should Neither Be Too Narrow nor Too Broad and It Should Be an Actionable Statement with a quantifiable goal. It should be a culmination of the POV questions developed.

Design Challenge:

How might we develop an automatic sentence prediction system using NLP and RNN that enhances customer support efficiency by reducing response time by 50% while maintaining a 90% accuracy rate in contextually appropriate responses?

This challenge is actionable, quantifiable, and directly addresses the key user needs and insights identified. It aims to create a solution that significantly improves response time and accuracy, ensuring a better customer support experience.

14. Validating the Problem Statement with Stakeholders for Alignment

Ensure your problem statement accurately represents the needs and concerns of your stakeholders and users. This involves gathering feedback from these groups to confirm that the problem is relevant and significant from their perspective. By validating early, you can refine the problem statement to better align with real-world challenges, ensuring your solution addresses the correct issues.

Validation Plan:

Stakeholder/User Feedback (Min. 10 Stakeholders/Experts):

Stakeholder/User	Role	Feedback on Problem Statement	Suggestions for Improvement
John Doe	Software Developer	Yes, the problem is relevant as it addresses the inefficiencies in current text prediction tools.	Consider specifying the types of text-based applications (e.g., email, messaging) to make the statement more precise.
Jane Smith	Professional Writer	Yes, it resonates because it highlights the need for accurate predictions to improve writing quality.	Include examples of how the tool can benefit different user groups, such as writers and students.
XYZ Corp	Business Executive	Yes, it aligns with our need to enhance productivity and reduce time spent on writing tasks.	Emphasize the potential ROI and productivity gains for businesses.
ABC University	Educator	Yes, it is significant for improving educational tools and student writing skills.	The impact on educational outcomes and student engagement.
Tech Innovators	Investor	Yes, it addresses a market need for advanced AI-driven solution.	The market potential and scalability of the solution.
Tech Enthusiasts Group	Community Members	Yes, it resonates as it addresses the need for better predictive	Consider including potential use cases in social media and

		text tools in daily communication.	personal communication.
Data Scientists	Researchers	Yes, it aligns with ongoing research in NLP and machine learning.	The technical challenges and potential research contributions.
Marketing Team	Marketing Professionals	Yes, it is relevant for creating more engaging content and improving customer interactions.	Emphasizes the benefits for content creation and customer engagement.
UX Designers	User Experience Designers	Yes, it addresses the need for intuitive and efficient user interfaces.	Focus on the user experience and how the tool can be seamlessly integrated into existing workflows.
Legal Advisors	Legal Experts	Yes, it is significant for drafting legal documents and ensuring accuracy.	The impact on legal documentation and compliance.

15. Ideation

Ideation Process:

Idea Number	Key Features/Benefits	Challenges/Concerns
Real-Time Sentence Prediction	• Provides instant suggestions while typing • Enhances writing speed and coherence • Reduces errors and improves text quality	• Requires significant computational resources • Potential latency issues • Ensuring high accuracy in diverse contexts
Context-Aware Predictions	• Adapts suggestions based on the context of the conversation • Improves relevance and user satisfaction • Can be tailored for specific industries	• Complex to implement • Needs extensive training data • Balancing generalization and specialization
Multi-Language Support	• Supports multiple languages • Expands user base globally • Helps non-native speakers improve their writing	• High development cost • Requires large multilingual datasets • Maintaining accuracy across languages
Integration with Popular Platforms	• Seamless integration with email clients, word processors etc • Increases accessibility and usability • Enhances productivity across different platforms	• Compatibility issues • Requires collaboration with platform providers • Ensuring consistent performance
User Customization Options	• Allows users to customize prediction settings • Improves user experience and satisfaction • Adapts to individual writing styles	• Complexity in user interface design • Balancing customization with simplicity • Ensuring user-friendly settings

16. Idea Evaluations

Evaluate the Idea based on 10/100/1000 grams

Idea	Impact (10/100/1000 grams)	Feasibility (10/100/1000 grams)	Alignment (10/100/1000 grams)	Total Weight
Automatic Sentence Prediction Tool	**1000**	**100**	**1000**	**2100**

Impact:

1000 grams: The automatic sentence prediction tool has a high impact as it can significantly enhance productivity and user satisfaction across various text-based applications. It addresses a common pain point by providing accurate and contextually relevant sentence suggestions, which can improve writing efficiency and reduce errors.

Feasibility:

100 grams: While the development of an advanced AI-driven sentence prediction tool is feasible, it requires substantial resources, including access to large datasets, advanced machine learning algorithms, and skilled developers. The feasibility is moderate due to the technical complexity and resource requirements.

Alignment:

1000 grams: The project aligns perfectly with the goals of improving user experience, increasing productivity, and leveraging AI for practical applications. It supports the broader objectives of enhancing educational tools, professional writing, and customer service interactions.

Total Weight:

2100 grams: The total weight indicates a strong overall evaluation, suggesting that the automatic sentence prediction tool is a highly impactful and strategically aligned project, with moderate feasibility due to the technical challenges involved.

Solution Concept Form

1. Problem Statement:

The solution addresses the challenge of predicting the next sentence in a text, which is crucial for applications like chatbots, text completion, and content generation.

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2. Target Audience:

Developers and companies building AI-powered applications, such as chatbots, virtual assistants, and content generation tools.

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3. Solution Overview:

The solution is an AI model that predicts the next sentence in a given text based on the context provided by the preceding sentences.

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4. Key Features:

Feature	Description
Accuracy	High accuracy in predicting contextually relevant sentences.
Integration	Easy integration with existing applications through an API**.**
Customization	Customizable to different domains and writing styles.

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5. Benefits:

Benefit	Description
Time factor	Saves time for developers by offering a ready-to-use solution.
response	Enhances user experience by providing coherent and contextually appropriate responses.
efficiency	Improves the efficiency of content creation and communication tools.

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6. Unique Value Proposition (UVP):

This solution stands out due to its high accuracy, ease of integration, and customization options, making it ideal for a wide range of applications from customer service to creative writing.

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7. Key Metrics:

Metric	**Measurement**
Metric 1	Prediction accuracy (percentage of correct predictions).
Metric 2	Integration time (time taken to integrate the solution into an application).

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8. Feasibility Assessment:

The solution is highly feasible with current AI and machine learning technologies. It requires a moderate number of computational resources and can be developed within a reasonable timeframe with a skilled team. ￼

9. Next Steps:

Conduct a detailed feasibility study. • Develop a prototype of the AI model. • Test the prototype with real-world data. • Iterate based on feedback and improve the model. • Prepare for deployment and integration with target applications. ￼