Survonica, the intelligent way to create and distribute surveys

Final Year Project Proposal

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Contents

Project Abstract

Survonica focuses on changing the way businesses and other institutions develop and share their surveys. Although survey tools like Google Forms and Typeform have made collecting data easier, they still do not fully address the issues of efficiency, personalization, and engaging the end user. They still require considerable manual data entry, have limited flexibility in the design of survey questions, and lack some basic features.
To address these gaps, Survonica is developing an AI-based web application that automates survey design using natural language inputs. Users will use chatbot and describe the type of survey they wish to create, and the AI will generate relevant questions. Users will have the ability to edit survey questions to gain full control of the survey design. Survonica's ability to generate surveys that makes it more interactive than the existing tools.
This will reduce the time, cost, and effort taken to create customized surveys. This seamlessly combines web development and artificial intelligence. These will certainly advance the automation to integrated systems with end users.

1. Introduction

Surveys are essential in collecting data to be used in decision-making in an extensive field of use, such as business, education, healthcare, and research. Online surveys have become increasingly easy and fast to create and distribute over the years thanks to the availability of such platforms as Google Forms, Typeform, and SurveyMonkey. These tools enable the user to gather information in bulk, process responses and make sound decisions without the need to go through paper-based processes.

Although there are such developments, the process of creating surveys is still lengthy and redundant. Companies will be forced to handcraft questionnaires that are properly designed and laid out, keep the questionnaires in proper format and make them interesting enough to garner high response rates. Furthermore, respondents are often exposed to long or repeating surveys, which provide the opportunity to complete the survey, become bored or get fatigued.

Survey creation can now be automated and personalized with new possibilities with the fast development of Artificial Intelligence (AI) and Natural Language Processing (NLP). Surveys should be made more dynamic, engaging, and efficient with the help of AI-driven question generation and chatbot interactions. The developments have provided the basis of Survonica, an AI-driven platform that promises to revolutionize the process of designing, customizing and distributing surveys. Radical Survonica is a combination of chatbot, automated question, a way of creating the next-generation, intelligent surveys that minimize the manual work, save time, and enhance the interaction with the participants.

2. Problem Statement

Despite the availability of platforms like Google Forms and Survey Monkey, creating online surveys still involves considerable manual effort. Users must spend time designing attractive survey, which can be time-consuming. Additionally, surveys often contain questions with similar meanings, leading to redundancy that affects both the efficiency of survey creation and the respondent’s experience. Furthermore, ensuring that surveys are well-structured and logically organized typically requires manual review and adjustment. Therefore, there is a need for a smart, AI-powered, and user-friendly web-based system that can automatically generate visually appealing surveys, detect and combine or remove repetitive questions, and ensure a clear and well-structured survey flow ultimately reducing manual effort while maintaining flexibility and engagement.

3. Related work

Today, there are a number of platforms that deal with online survey creation:

- **Survey Monkey:** One of the survey tools that are always used is SurveyMonkey since it is user friendly and comes with sound analytics. They provide you with ready-made templates, question banks, and they now have Build with AI, which auto-generates survey drafts based on a prompt. In addition, surveys can be shared using different media, but the editing possibilities are rather limited.
- **Google Forms:** Google Forms is completely free and extremely popular since it is easy and directly integrates with Google Workspace. You have a variety of question types, templates and live response tracking- ideal when you simply need to gather some fast data to complete a class project.

- **Type form:** Type form puts a lot of emphasis on the user experience, with interactive, conversational forms that are like a chat. That is why it is fantastic to collect customer feedback or conduct market research on a startup club pitch.

Weaknesses of Current Platforms.

Despite the advantages, the following are the main disadvantages of all these tools:

- Absence of profound AI integration Question generation is patchy; it does not trigger adaptive reasoning.
- Low interactivity - The majority of platforms chatbot creation and engagement.
- Manual customization You still need to search through a lot of manual edits to customize your survey.
- Cost barriers - Premium analytics and additional features are typically pay-walled, and this is inconvenient to us small-budget researchers or student teams.

Why Survonica is better

Survonica is designed to overcome these limitations by integrating multiple **AI-powered features** into a single, easy-to-use platform:

- **AI-Powered Survey Generation:** Surveys can be generated through **natural language prompts**, allowing chatbot-style interaction for question creation without manually typing everything.
- **Smart Visual & Layout Customization:** Survonica offers **greater flexibility** to independently edit and design **questions**, **layouts**, and **visuals**, which is not possible in most existing tools.
- **Cost-Effective & Scalable:** The platform is designed to be **affordable and accessible**, making it suitable for **business use**, **university projects**, and **research labs**.
- **One-Stop AI Solution:** Survonica provides a **faster**, **smarter**, and **more interactive** experience than traditional survey tools by combining AI generation, layout design, and intelligent structuring into one seamless workflow.

4. Project Rationale

The motivation behind Survonica is twofold.

1. Skill Development: As computer science students, we should have an opportunity to acquire practical experience in software development and integration of artificial intelligence. The contemporary industries are becoming more demanding of graduates to possess good technical skills in these fields and this project is a great opportunity to put our academic knowledge into a practical situation.

2. Industrial Applicability: I believe that AI is completely transforming the way businesses are conducted. When we combine AI with the normal web development, this project would develop a strong solution to address the existing gaps in survey platforms.

With Survonica, companies will be able to save precious time, lower expenses, and improve user experience through the implementation of a greater degree of automation, customization, and interactivity in survey making.

4.1 Aims and Objectives

Aim:

The aim of this project is to develop an **AI-powered web-based survey creation platform** that enables users to design **visually appealing**, **non-redundant**, and **well-structured** surveys with **minimal manual effort**.

Objectives:

To achieve this aim, the project will focus on the following objectives:

- **Develop a user-friendly web application** with a clean and intuitive interface to ensure smooth navigation and accessibility for all user types.

- **Automate survey layout and visual design** by integrating **built-in templates and visual elements**, reducing repetitive manual customization and improving the overall survey presentation.
- **Implement intelligent question similarity detection** to identify and automatically **combine or remove redundant questions**, ensuring concise and efficient surveys.
- **Ensure well-structured survey flow** by using AI or rule-based logic to **organize questions logically**, improving clarity and respondent engagement.
- **Allow flexible manual editing** so users can fine-tune questions, visuals, and structure independently, maintaining control over the final design.

4.2 Project Scope

The project scope of Survonica encompasses the development of a comprehensive web-based AI-powered survey creation platform designed to streamline and enhance the process of survey generation, by providing a clean and intuitive interface that ensures ease of use for all types of users, integrating built-in visual and layout templates to minimize repetitive manual design work and create visually appealing surveys, implementing AI-driven question similarity detection to automatically identify and merge or remove redundant questions, and applying AI or rule-based logic to organize questions in a well-structured and logical flow, thereby improving respondent engagement, efficiency, and overall survey quality, while making the platform accessible in real-time via the web for businesses, educational institutions, and research organizations.

4.3 Success Criterion

The success of the project will be measured by its ability to achieve the objectives outlined in the proposal and deliver the intended features within the specified timeframe. The Survonica platform will be considered successful if it is developed, implemented, and operates according to the defined goals. Key success criteria include:

- **Development and deployment of a fully functional web-based platform** that is accessible in real-time.
- **Accurate and organized survey question handling** through the AI chatbot, including identification and merging or removal of redundant questions.
- **Integration of built-in visual and layout templates** to create visually appealing and well-structured surveys with minimal manual effort.
- **Logical structuring of survey flow**, ensuring clarity, readability, and improved respondent engagement.
- **An intuitive and user-friendly interface** that is easy to navigate for all categories of users.
- **Stable system operation**, with no critical errors during demonstration and testing.
- **Endorsement from the project supervisor** and full compliance with the requirements specified in the proposal.

Meeting these criteria will indicate successful completion of the project as proposed. Furthermore, exceeding these expectations through enhanced functionality, usability, or efficiency will demonstrate the platform's potential for future development and scalability

4.4 Proposed Methodology and Architecture

The development of the Survonica platform follows a **systematic approach** based on **agile software development** and **user-centered design**. This approach ensures that the platform is not only technically robust but also meets user needs by providing a **fast, engaging, and well-structured survey creation experience**. The methodology consists of the following steps:

4.4.1. Requirements Gathering and Analysis

- Study the existing system to identify their problem and what thing they lack and identify needs for survey creation.
- Document **functional requirements** such as survey creation, template usage, AI-assisted question checking, survey structuring, and question editing.

- Record **non-functional requirements** including system performance, security, accessibility, and usability to ensure a comprehensive understanding of the platform objectives.

4.4.2. System Design

- Create **user personas** to represent the target audience, guiding design decisions for ease of use and engagement.
- Develop **wireframes and mockups** using design tools like Figma to visualize the **user interface (UI)** and **user experience (UX)** of the survey platform.
- Define the **system architecture**, including front-end, back-end, and database:

    - **Frontend:** Developed using HTML, CSS, and JavaScript (or React.js) to ensure a responsive, clean, and intuitive interface.
    - **Backend:** Built using Python Django or Node.js to handle server-side logic, survey generation, AI integration, and user authentication.
    - **Database:** Use MySQL or MongoDB to store survey data, templates, user information, and results efficiently.

- Design **AI modules** for detecting repetitive questions and organizing surveys into a logical, well-structured flow.
- Plan the **integration of built-in visual and layout templates** to automate survey design and reduce manual formatting effort.

4.4.3. Agile Development

- Implement **Agile methodology** to allow iterative development and continuous user feedback.
- Divide the project into **sprints**, each focusing on specific features such as AI question handling, template integration, survey flow structuring, or interface enhancements.
- Conduct **regular sprint reviews and retrospectives** to monitor progress, gather user feedback, and refine the development plan.

4.4.4. Development

- Develop the platform according to the planned architecture and design specifications.
- Implement **AI-driven question similarity detection** and logical survey flow modules.
- Integrate **pre-built templates** and layout options for automated visual formatting.
- Enable **flexible editing** for users to customize questions and survey design manually.
- Conduct **unit testing** of individual modules during development to ensure smooth integration and functionality.

4.4.5. Implementation

- Deploy the developed components on a **web server** to make the platform accessible in real-time.
- Connect the front-end and back-end modules and ensure **proper data flow**.
- Apply **security measures** such as user authentication, data encryption, and secure storage.
- Ensure the **AI modules and templates** are fully operational and integrated with the survey creation workflow.

4.4.6. Testing

- Perform thorough testing including **unit testing**, **integration testing**, and **user acceptance testing (UAT)**.
- Collect feedback from beta users to identify usability issues, bugs, or performance problems.
- Refine the platform based on testing results to improve stability, functionality, and overall user experience.

4.4.7. Deployment and Launch

- Deploy the platform on a **cloud hosting service** such as AWS, Azure, or Heroku to ensure scalability, reliability, and accessibility.
- Monitor platform performance post-launch, collecting user feedback and applying iterative improvements.
- Ensure continuous support and maintenance to address any technical issues and enhance features over time.

4.4.8. Future Goals

Future versions of Survonica may include:

- **Voice-assisted survey creation** for hands-free operation.
- **Mobile application** for on-the-go survey creation and management.
- **Integration with third-party tools** like Google Workspace for better collaboration

Flow Chart

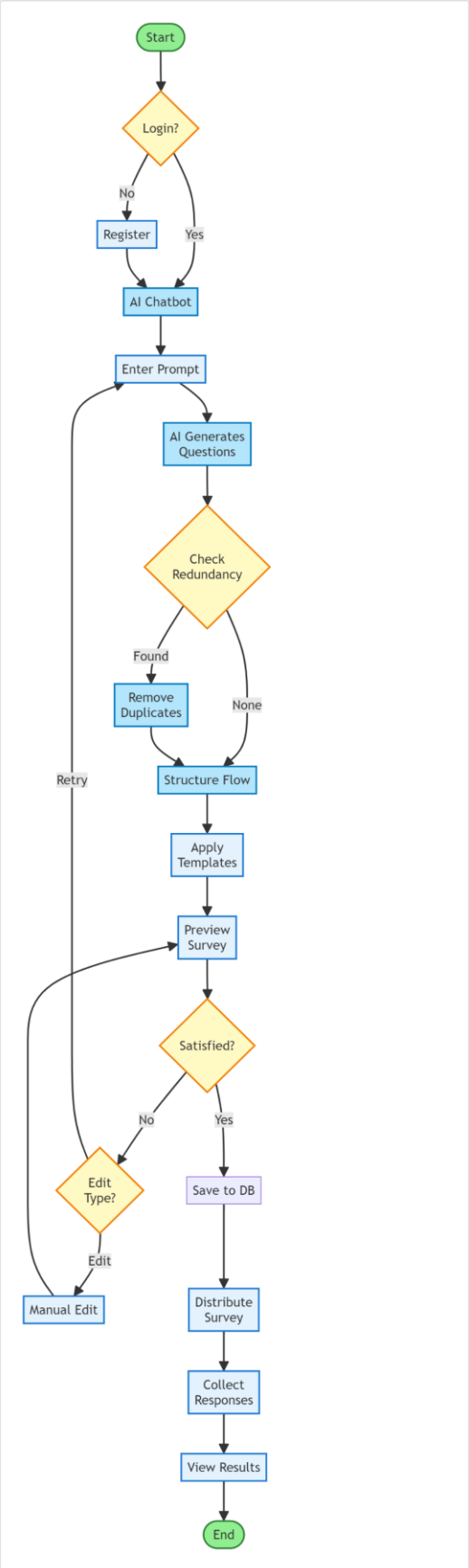

Figure 1 Flow Chart

DFD Level 0

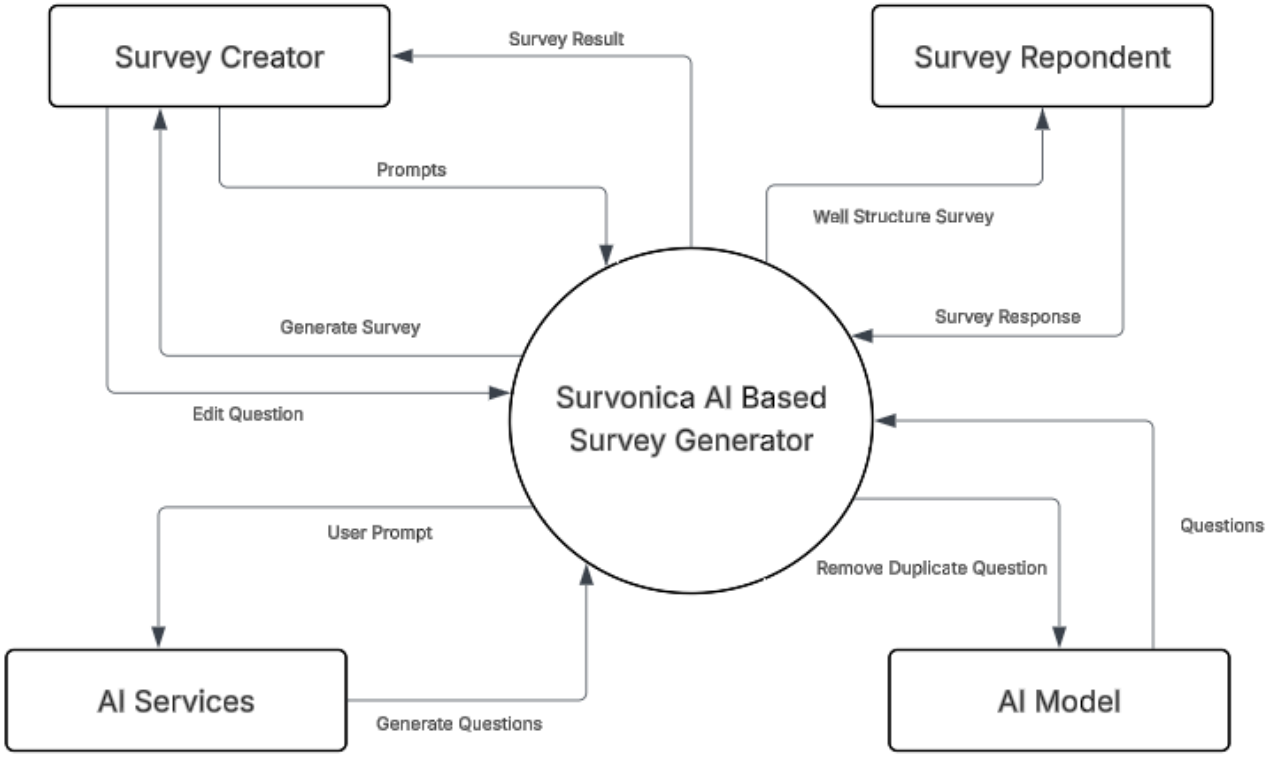

Figure 2 DFD Level 0

5. Individual Tasks

Team Member	Activity	Tentative Date
Both	Planning and Setup (Detailed Project Plaining and Technology Stack Setup, Git & GitHub Setup)	1 Oct to 20 Oct 2025
Ahmad Mustafa	Backend Development (API creation, Linking Frontend to Backend etc.)	15 Nov to 15 Feb
Abdul Qadeer	Front End Development	1 Nov to 31 Jan
Ahmad Mustafa	Chatbot Integration (Open AI API key or LLM model implementation, Replication Detection, Well Structured)	15 Dec to 15 March
Both	Testing and Debugging	1 Feb Jan to 31 Mar
Ahmad Mustafa	Deployment	1 Apr to 3 Apr

Both	Documentation	3 Apr to 1 May

6. Tools and Technologies

To develop Survonica, I am combining a variety of programming languages, frameworks, AI tools, databases, and cloud services. These decisions were taken to assist our AI-based survey platform to operate effectively and without any problems.

- **Programming Languages Python and JavaScript.**
- The backend and AI integration will be done in Python since it already has all the machine-learning libraries that we require. The frontend will be driven by JavaScript to provide users with a dynamic and interactive experience - and might be even utilized on the backend to be flexible.
- **Frameworks React and Django/Node Js.**
- React will create a responsive web interface that is user-friendly. To support the backend we will rely on Django or Node Js to provide business logic, API calls, and communications with the AI tools and database.
- **AI Tools OpenAI API, Hugging Face.**
- These will produce survey questions.OpenAI and Hugging Face will process natural-language prompts to surveys.
- **Database – MongoDB**
- The user accounts, survey data, and image references will be stored in MongoDB. It is adaptable and it fits dynamic content such as our surveys and media.
- **Deployment – Azure**
- The entire system, frontend, backend and database will be hosted on Microsoft Azure hence it is publicly available.
- **Collaboration – GitHub**
- Our version-control system will be GitHub, which will assist us in tracking changes, managing tasks, and preventing conflicts during the development process.

Gantt chart

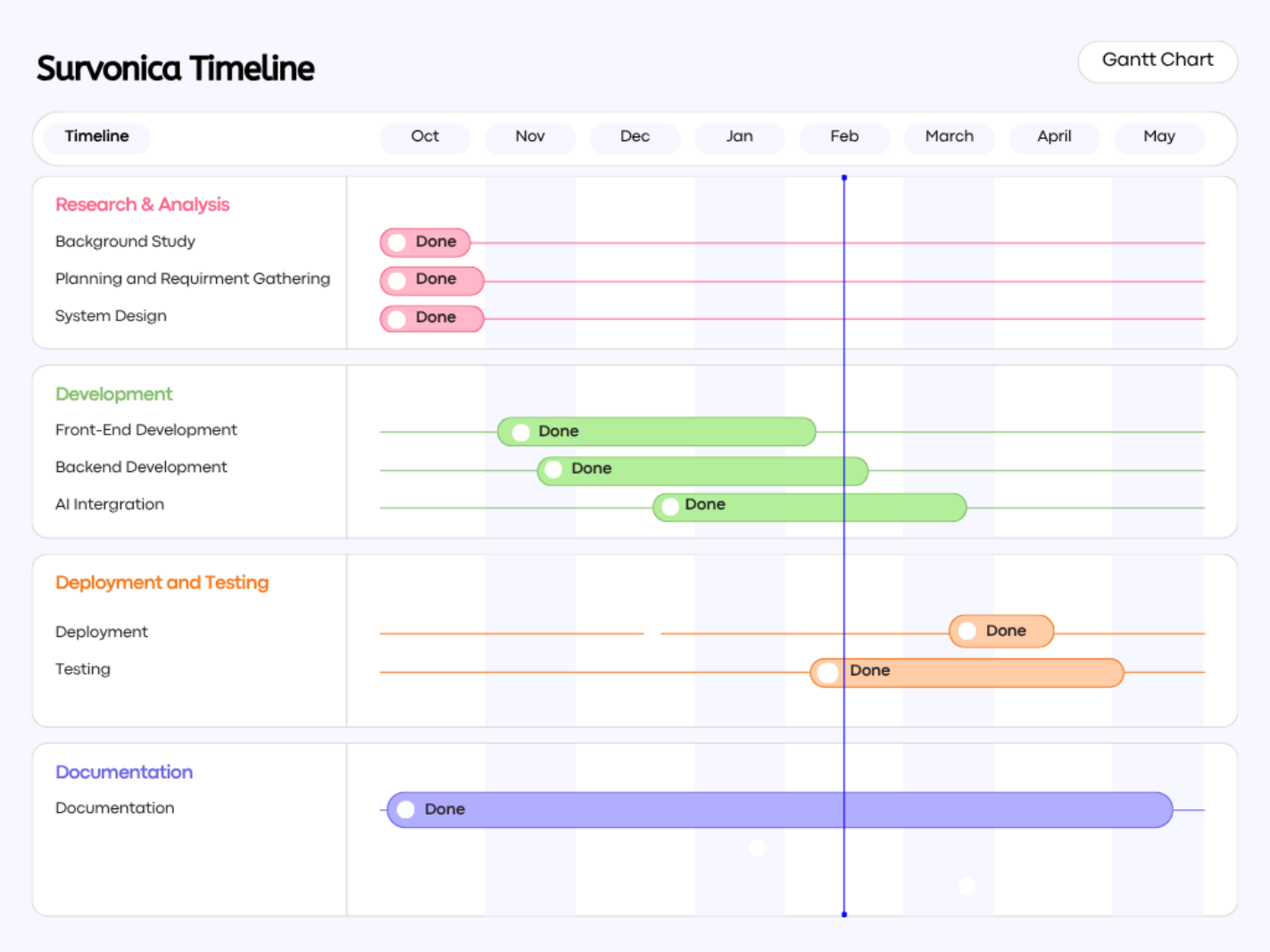

Figure 3 Gantt chart

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