

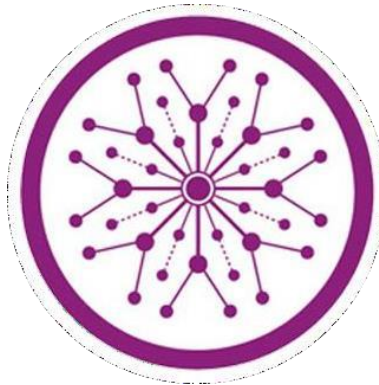
Automated Generating Paper

Final Year Project

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A project submitted in partial fulfillment of the degree of

BS in Computer Science



Department of Computer Science

Faculty of Computer Science

The Superior University, Lahore

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Auto Generated Paper	[☒] Development [☐] Research [☐] R&D			
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Plagiarism Free Certificate

This is to certify that, I **Zikria Tahir** , group leader of FYP under registration no FYP-BCSM-F23-012 at Computer Science Department, The Superior University, Lahore. I declare that my FYPreport is checked by my supervisor.

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Auto Generating Paper

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
Hasaan	1.0	12/03/23	Discussed which requirements should be fulfilled.	
Zikria	2.0	22/03/23	Discussed about adding and removing some additional features.	
Ahmad	3.0	14/04/23	Discussed about the work we did on UI.	
Zikria	4.0	20/04/23	Discussed about the work we did on Database.	
Ahmad	5.0	03/05/23	Discussed on how to combine the UI and the Database with proper working.	
Hasaan	6.0	18/05/23	Discussed about the working of website we built.	

APPROVAL

PROJECT SUPERVISOR

Comments: _____

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PROJECT MANAGER

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Date: _____ Signature: _____

HEAD OF THE DEPARTMENT

Comments: _____

Date: _____ Signature: _____

Dedication

This work is dedicated to all those people in my life who supported me and prayed for me in my tough times, beloved people who have meant and continue to mean so much to me. To all those people who wanted me to succeed in my life. Especially my parents, who made me this capable and helped me in my hardships. All the teachers who helped us along the way.

Acknowledgements

I would like to express my special thanks of gratitude to my teacher Sir Ahsan Imtiaz who gave me the golden opportunity to do this wonderful project on the topic Design and Implementation of Auto Generate Paper, which also helped me in doing a lot of Research and I came to know about so many new things. I am thankful to my supervisor who has guided me in a very efficient way.

Secondly, I would also like to thank my parents and friends (Team Members) who helped me a lot in finishing this project within the limited time. I am making this project not only for marks but to also increase my knowledge.

THANKS AGAIN TO ALL WHO HELPED ME.

Executive Summary

The Auto Generate Paper website leverages the power of its comprehensive database to provide users with an efficient and reliable platform for generating monthly test papers and final examination papers. The website offers an intuitive user interface that simplifies the process of creating high-quality academic content.

Key features of the Auto Generate Paper website include its extensive database of scholarly resources and customizable options. The database comprises a vast collection of reputable sources subject papers. This repository is continuously updated to ensure access to the latest and most credible information, enabling users to generate papers that are based on current and relevant research.

Quality control is a top priority for the Auto Generate Paper website. Regular updates and refinements to the Database guarantee accuracy and reliability in generating papers. The platform also incorporates to ensure the originality of the content, safeguarding users from any potential issues related to academic integrity.

In conclusion, the Auto Generate Paper website offers a powerful and user-friendly platform for creating papers. By harnessing its extensive database, users can effortlessly generate high-quality academic content while customizing various aspects to meet their specific requirements. With its commitment to quality control and emphasis on convenience, the Auto Generate Paper website provides a valuable resource for researchers, students, and professionals seeking an efficient and reliable solution for their academic writing needs.

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Chapter 1

Introduction

Chapter 1: Introduction

1. **In** today's age, education is the most important way of achieving success. When we discuss education, it is imperative to mention tests and examinations. Examinations prepare students in their quest for knowledge. So, having a proper examination paper and format is quite necessary. Now the traditional method of generating question paper has been manual. In this method certain officials chalk out the question paper. But this method can be ineffective at times owing to bias, repetition, and security concerns. We have proposed an Automated process of Question Paper Generation which is fast, streamlined, randomized and secure. Every task performed by this system is automated so that storage space, bias and security is not a concern anymore. Furthermore, we have proposed a new algorithm which ensures total randomization of questions and avoids repetitions.

1.1. Background

As students, we have been looking at the schooling system in our country. What happens is that the teachers conduct exam on weekly, monthly basis and at the end they conduct a final exam. All this time the teachers must spare an hour or two to compile that exam. For every teacher they must go through the same phase. After compiling that exam, they have to pass that exam to the department who is responsible for creating the required number of copies for the students. Some time that department miss manage the exam either they misplace the exam, or they forgot to create copies.

Now what we have come with is that the paper will be system generated. The teacher does not have to write down any individual questions. All they have to do is to select the question they want in their exam from our system named Automated Generated Paper.

1.2. Motivations and Challenges

The motivations behind using databases and other sources in auto-generate paper systems are to enhance the content generation process and improve the quality and accuracy of the generated papers. By leveraging vast amounts of data from various sources, these systems aim

to provide comprehensive and relevant information to researchers and writers. Here are some motivations for using databases and other sources in auto-generate paper systems:

Information Access: Databases contain a wealth of information, including research papers, scholarly articles, books, and other relevant sources. Auto-generated paper systems can tap into these databases to access a wide range of information quickly and efficiently. This access to diverse knowledge can help researchers explore various perspectives and gain a comprehensive understanding of a topic.

Timesaving and Efficiency: Auto-generate paper systems that utilize databases can significantly reduce the time and effort required to gather and synthesize information. Instead of manually searching and reviewing numerous sources, researchers can rely on the system to retrieve relevant data and generate content based on their requirements. This streamlines the research process and allows researchers to focus more on analysis and interpretation.

Quality Enhancement: By incorporating information from reliable databases, auto-generate paper systems can improve the quality and accuracy of the generated papers. These systems can ensure that the content is based on up-to-date and peer-reviewed sources, enhancing the credibility of the research. By leveraging established research from databases, the generated papers can also benefit from the expertise of renowned scholars in the field.

However, auto-generate paper systems using databases and other sources also face several challenges:

Data Quality and Bias: The quality and reliability of the data in databases can vary. Auto-generate paper systems need to ensure that the sources used are accurate, trustworthy, and up to date. Additionally, biases present in the data can be propagated to the generated content, potentially leading to biased or incomplete research outcomes.

Contextual Understanding: While auto-generate paper systems can access vast amounts of information, understanding the context and correctly interpreting the data remains a challenge. These systems may struggle to grasp the nuances of complex research topics or accurately synthesize information from various sources. Contextual understanding is crucial for generating coherent and insightful papers.

Interpretation and Analysis: While auto-generate paper systems can generate content based

on existing knowledge, they may lack the ability to critically analyze or interpret the information. The generation process relies on patterns in the data, but true insights and novel research contributions require human intellect and expertise.

1.3. Goals and Objectives

The goals and objectives for auto-generate paper systems can vary depending on the specific use case and context. Here are some common goals and objectives that are typically associated with auto-generate paper systems:

2. **Time Efficiency:** One of the primary objectives of auto-generate paper systems is to save time for researchers and writers. These systems aim to automate the process of content generation, allowing users to generate draft papers or sections of papers quickly and efficiently. By automating repetitive tasks, researchers can focus more on higher-level analysis and critical thinking.
3. **Content Assistance:** Auto-generate paper systems aim to assist researchers and writers by providing relevant and coherent content suggestions. These systems can generate text based on given prompts or input, offering ideas, summaries, or even draft sections of papers. The objective is to provide researchers with a starting point or inspiration for their work, helping them overcome writer's block or generate new perspectives.
4. **Information Synthesis:** Auto-generated paper systems can assist in synthesizing information from various sources. The objective is to help researchers consolidate and organize the knowledge available in databases, scholarly articles, and other sources. By leveraging the vast amount of information, these systems aim to provide a comprehensive overview of a research topic and facilitate the integration of multiple perspectives.
5. **Quality Enhancement:** Auto-generated paper systems strive to improve the quality and accuracy of generated papers. By accessing databases and reliable sources, these systems can ensure that the content is based on up-to-date, peer-reviewed, and credible information. The objective is to enhance the credibility and reliability of the research output, providing researchers with a solid foundation to build upon.

6. Idea Generation and Exploration: Auto-generate paper systems can serve as a tool for generating new ideas and exploring different research directions. By leveraging the patterns and knowledge contained in the data, these systems can generate novel combinations of concepts or propose alternative perspectives. The objective is to stimulate creativity and open new avenues for research.

1.4 Literature Review/Existing Solutions

Auto-generating papers is a new area of research and development, and there are a few projects that are currently available in the market. Here is a competitive analysis of the top auto- generate paper project:

SciGen - SciGen is an automatic paper generator that uses context-free grammar to create random computer science research papers. The project was developed by three MIT students in 2005, and it has been used in a variety of academic and non-academic contexts. However, it has not been updated since 2012.

1.5 Gap Analysis

Performing a gap analysis for auto-generate paper systems using databases involves assessing the current state of the technology and identifying areas where improvements or advancements are needed. Here are some key aspects to consider when conducting a gap analysis:

- **Data Coverage:** Evaluate the extent and variety of data available in the databases used by auto-generate paper systems. Identify any gaps or limitations in terms of coverage across different domains, subjects, or disciplines. Determine if certain types of data are underrepresented or missing and assess the impact of these gaps on the system's ability to generate comprehensive and diverse content.
- **Data Quality and Reliability:** Examine the quality and reliability of the data within databases. Assess the accuracy, credibility, and currency of the sources. Identify any potential biases or limitations within the data that can affect the generated content. Consider the need for measures to ensure data quality and mitigate biases to enhance the reliability of the auto-generated papers.
- **Citation and Referencing:** Assess the system's ability to properly cite and reference the sources used in the generated papers. Verify if the system can consistently and accurately attribute information to the original authors or works. Identify any gaps or challenges related to citation generation and explore methods to improve the accuracy and completeness of the referencing process.

- **Customization and Adaptability:** Assess the system's flexibility and adaptability to different research requirements and writing styles. Determine whether the system can be customized to cater to specific disciplines, formatting styles, or writing guidelines. Identify any gaps in customization options and explore ways to enhance the system's adaptability to meet diverse user needs.
- **Collaboration and Review:** Evaluate the system's support for collaboration and review processes. Assess if the system allows multiple researchers or authors to work together on a paper and if it

provides mechanisms for feedback and revision. Identify any gaps in collaborative features and explore ways to facilitate effective collaboration and peer review within the system.

1.6 Proposed Solution

The development of an efficient and ethical automated paper writing software could help streamline the paper writing process and enhance academic productivity. The proposed software would be designed to automate specific aspects of the paper writing process, such as literature review, data analysis, and formatting, while maintaining the quality and authenticity of the research generated. To achieve this, the software could incorporate machine learning algorithms that analyze research data and generate reports, summaries, and conclusions. The software could also use natural language processing to analyze the existing literature and generate unique and original research. Additionally, the software could include a plagiarism checker to ensure the authenticity of the research generated.

1.7 Project Plan

1. Developing an auto-generated paper system requires a comprehensive project plan that outlines the project's scope, timeline, resources, and deliverables. Here is an example of a project plan for an auto-generate paper system:
2. Research and Analysis:
3. Identify existing literature on automated paper writing.
4. Analyze the feasibility of the proposed software.
5. Define the system's requirements and features.
6. Deliverables: Project proposal, requirement specification document

2 Timeline: 2-3 weeks:

1. Design and Development:
2. Design the user interface and system architecture.
3. Develop machine learning algorithms and natural language processing techniques.
4. Integrate the plagiarism checker API!
5. Develop the output generation and report formatting features!
6. Deliverables: System prototype, working model

3 Timeline: 10-12 weeks:

1. Testing and Validation:
2. Test the system's functionality and reliability.
3. Validate the system's output by academic researchers.
4. Address any issues or bugs that arise during testing.
5. Deliverables: Test plan, validation report

4 Timeline: 4-6 weeks

1. Deployment and Maintenance:
2. Deploy the system to a cloud-based platform.
3. Provide ongoing maintenance and support.
4. Address any user feedback or feature requests.
5. Deliverables: System documentation, user guide

5 Timeline: Ongoing

1. Overall Timeline: 6-9 months

1.7.1 Work Breakdown Structure

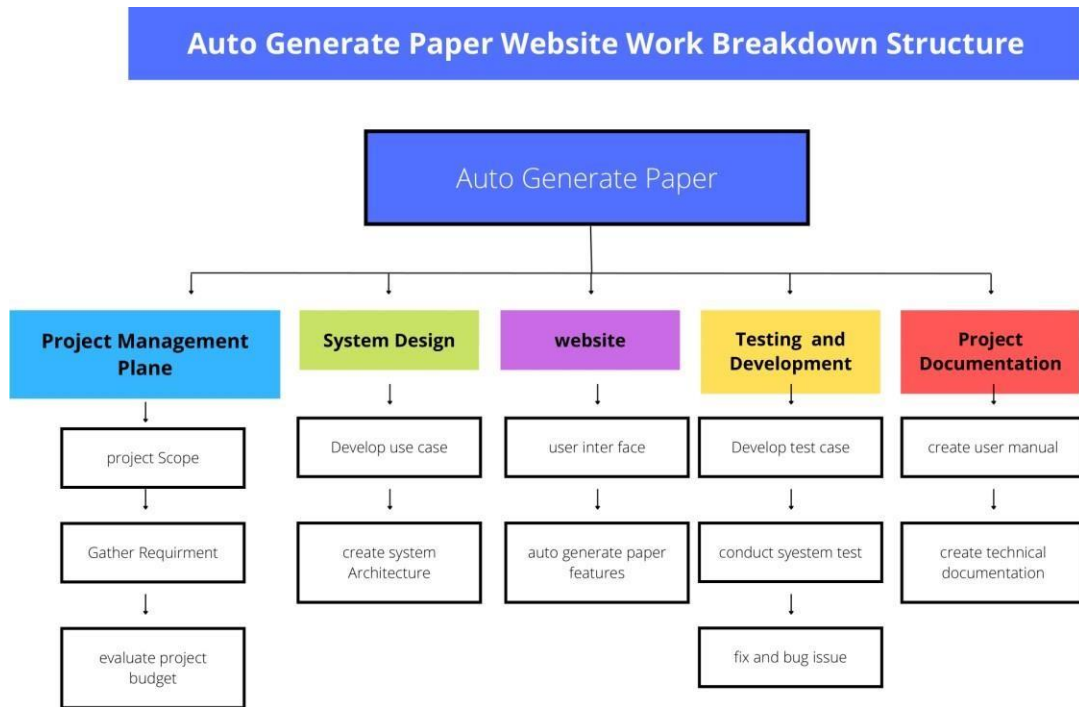


Figure 1 Work Break Down Structure

1.7.2 Roles & Responsibility Matrix

WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1	system Design	1	User interface	20	Zikria
2	Backend database	2	Data base	25	Hasaan
3	Requirements Analysis	3	Research	15	Ahmed
4	Business	4	business	14	Ahmed
5	Presentation	6	presentation	7	Zikria /Hasaan/Ahmed
6	Literature / Markey Survey	7	survey	10	Zikria /Hasaan

Table 1 Roles & Responsibility Matrix

1.7.3 Gantt Chart

Task	Start Date	End Date	Duration
Research and Analysis	01/02/2023	21/2/2023	3weeks
Design and Development	010/5/2023	010/05/2023	4 weeks
Testing and Validation	04/06/2023	012/6/2023	1weeks
Deployment and Maintenance	12/6/2023	12/7/2023	Ongoing

Table 2 Gantt Chart

The Gantt chart above shows a timeline of approximately 12 months, with the four main tasks of the project outlined. The duration of each task is listed in weeks. The timeline shows that the research and analysis phase of the project will take approximately three weeks, followed by a ten-week development phase, a six-week testing and validation phase, and an ongoing deployment and maintenance phase.

1.8 Report Outline

I. Introduction

- A. Background and context
- B. Purpose of the report
- C. Research question

II. Literature Review

- A. Overview of existing research on auto-generating papers
- B. Analysis of previous studies using databases for paper generation
- C. Identification of gaps and limitations in the current literature

III. Methodology

- A. Description of the database used for paper generation.
- B. Selection criteria for the database
- C. Data collection and preprocessing techniques
- D. Explanation of evaluation metrics

IV. Database Selection and Design

- A. Criteria for selecting the appropriate database for paper generation.
- B. Description of the chosen database and its attributes
- C. Database schema and organization
- D. Data preprocessing techniques applied to the database.

V. Auto Paper Generation Process

- A. Overview of the auto-generation algorithm or model
- B. Explanation of the paper generation pipeline
- C. Integration of database information into the generated papers
- D. Challenges and considerations in the auto-generation process

VI. Evaluation and Performance Metrics

- A. Metrics are used to evaluate the quality of the generated papers.
- B. Comparative analysis with existing manual papers
- C. Assessment of the system's performance and limitations

VII. Results and Discussion

- A. Presentation of the experimental results

- B. Discussion of the findings in relation to the research question
- C. Interpretation of the results and their implications

VIII. Ethical Considerations

- A. Discussion of ethical concerns related to auto-generated papers.
- B. Addressing issues of plagiarism and intellectual property rights
- C. Ensuring transparency and responsible use of auto-generation technologies

IX. Conclusion

- A. Summary of the key findings
- B. Implications of the research for academia and industry
- C. Recommendations for future research and improvements

X. References

- A. List of cited sources and relevant literature

1.9 Empathy Map

What They Think	What They Feel	What They Say	What They Do
Research is time-consuming and tedious	Frustration	"I wish there was a faster way to write research papers"	Spend hours researching and writing
Worried about plagiarism and authenticity	Concern	"I need to make sure my research is original and authentic"	Use plagiarism checker tools
Want to produce high-quality research	Ambition	"I want to produce research that is valuable and impactful"	Spend time on formatting and editing
Need to meet deadlines	Pressure	"I have a deadline to meet, I need to finish this quickly"	Work long hours to complete the research
Struggle with writer's block	Frustration	"I don't know how to start this research paper"	Seek inspiration from examples or templates

Table 3 Empathy Map

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1 Introduction

The software requires some of the specification listed below:

2.1.1 Purpose

The document defines the understanding of the general objectives for the creation of the project “Automated Generated Paper.” The document sets out the main requirements for the software product, defines the scope of this product, the purpose of implementation, restrictions, and strategic decisions on project implementation, agreed between the Customer and the Developer. The Software Requirement Specification document is the basis for the software product development process.

2.1.2 Document Conventions

The conventions used in this document are as follow:

AGP	Automated Generated Paper
Style: <i>Italic</i>	Project Name
VS-Code	Visual Studio Code

Table 4 Document Conventions

2.1.3 Intended Audience and Reading Suggestions

This project is a prototype “Automated Generated Paper.” This project will be restricted to a school. The project will be under the supervision of our professors, and it will be used by the schoolteachers to generate exam papers and save their valuable time and spent that on other valuable things.

2.1.4 Product Scope

The purpose of this project is to computerize the Manual work of teachers. At the beginning we are trying to implement this in the schooling system. After that we will be expanding our wings. Then we will be taking one step forward and start working with college and universities as well.

2.1.5 Overall Description

2.1.6 Product Perspective

Automated Generated Paper” is a product that requires some additional hardware and software interfaces to function which includes a web browser, a Database (where the data will be stored) and a stable internet connection. When released, the final product would be the first version of the application. It will be designed as a user centered product, which could be accessed to give a personalized experience to any authenticated user (School teacher etc.)

2.1.7 User Classes and Characteristics

The user who will interact with this web-based software will be schoolteacher only who are authorized by the admin. This cannot be made public because that will compromise the quality of work. A minor change in data can cause huge difference.

2.1.8 Operating Environment

In Automated Generating Paper website, it will be compatible with Cell phone and desktop system through Internet connection. In this no specific requirements are needed, only teachers have to know how to use the system.

2.1.9 Design and Implementation Constraints

Auto Generated Paper is a web-based application that will generate paper according to the given requirement of the user. The user will choose the question already being stored in database. The web-based application must be easy to use and have a user-friendly interface. It should be optimized for performance, so that it can operate on any of the given devices.

2.1.10 Assumptions and Dependencies

The user must be authorized in order to use the Auto Generated Paper. The user must have basic knowledge of the software. The internet connection must be stable.

2.2 External Interface Requirements

2.2.1 User Interfaces

The system will have the following user interfaces:

- **Login/Register:**

This interface will allow users to create a new account or log into an existing one.

- **Home:**

This interface will show the main menu and options to access different functionalities of the web application.

- **Auto Generated Paper:**

The papers will be generated by the system using the data stored in Database.

- **Profile:**

This interface will display user information, such as username, profile picture, and previously saved

question at the time new question addition.

2.2.2 Hardware Interfaces

Auto Generated Paper requires a Mobile or Desktop system in order to use the system, it should be connected to the database and a stable internet connection.

2.2.3 Software Interfaces

The web-based software will have following features:

Design the user interface:

Create a user-friendly interface that allows users to interact with the software effectively. Consider using a graphical user interface (GUI) framework or a web- based interface for easy accessibility.

Set up the database:

Choose a suitable database management system (e.g., MySQL, PostgreSQL) to store and retrieve the necessary data for paper generation. Design the database schema to accommodate the required information, such as research papers, citations, references, and templates.

Implement the database integration:

Develop the functionality to connect the software interface with the database. This includes establishing the connection, querying the database for relevant information, and retrieving the necessary data for paper generation.

Deploy and maintain:

Once the software interface is thoroughly evaluated and refined, deploy it to the intended users. Regularly maintain and update the software to address any issues or incorporate new features as needed.

Web APIs:

If your database is exposed through a web API, you can use HTTP requests to communicate with the API and retrieve data. The API might provide endpoints to fetch specific data or perform custom queries. You can use libraries like requests (Python), HTTP Client (JavaScript), or built-in libraries in other programming languages to send requests and handle responses.

2.2.4 Communications Interfaces

User Communications Interfaces for Auto Generate Paper using database, to automatically generate a paper using a database, you would need a communication interface that allows your program or script to interact with the database and retrieve the required data. The choice of communication interface depends on the type of database you are using and the programming language or framework you prefer. Here are a few common options:

Structured Query Language (SQL):

If your database is a relational database management system (RDBMS) like MySQL, PostgreSQL, or Oracle, you can use SQL to communicate with the database. SQL provides a standardized way to query, manipulate, and retrieve data from the database. You can use SQL statements in your code to fetch the necessary data and generate the paper.

Database-specific APIs:

Many databases provide their own APIs that allow you to interact with the database using specific programming languages. For example, if you are using MongoDB, you can use the MongoDB API for your chosen programming language (e.g., pymongo for Python) to connect to the database, retrieve data, and generate the paper.

Object-Relational Mapping (ORM) frameworks:

ORM frameworks such as Django (Python), Hibernate (Java), or Entity Framework (C#) provide a higher-level abstraction for interacting with databases. They allow you to work with the database using object-oriented paradigms, mapping database tables to classes and records to objects. With an ORM, you can write code in your chosen programming language to query the database, retrieve the required data, and generate the paper.

Web APIs:

If your database is exposed through a web API, you can use HTTP requests to communicate with the API and retrieve data. The API might provide endpoints to fetch specific data or perform custom queries. You can use libraries like requests (Python), HTTP Client (JavaScript), or built-in libraries in other programming languages to send requests and handle responses.

Custom interfaces:

Depending on the specifics of your project, you may need to build custom communication interfaces. This could involve creating a dedicated API or implementing a socket-based communication protocol to exchange data between your script and the database.

2.3 System Features

2.3.1 System Feature 1

Description and Priority:

Auto-generating a paper using a database involves retrieving data from a database and using that data to generate the content of the paper. Here is a description of the process and some priorities to consider:

Revision and Review:

After the initial generation of the paper, it is essential to include a revision and review process. This could involve incorporating feedback from experts, proofreading for grammar and coherence, and ensuring the accuracy and validity of the generated content. The priority here is to refine the generated paper and ensure its quality before finalization.

Formatting and Styling:

Another priority is to define the formatting and styling guidelines for the generated paper. This includes specifying the layout, font styles, citation formats, and any other visual aspects required to adhere to the desired paper format. It is important to ensure that the generated paper conforms to the specified style guidelines.

Customization and Flexibility:

Depending on the application, it may be valuable to prioritize the ability to customize and modify the generated paper. This could include incorporating user-defined templates, allowing for the inclusion of additional data sources, or providing options for adjusting the paper's structure or content based on specific requirements.

Stimulus/Response Sequences:

I can help you generate a response sequence for a paper using a database. To assist you better, please provide me with the specific details and requirements of your paper, such as the topic, thesis statement, or any other relevant information.

Functional Requirements

Logging and Error Handling:

Maintain logs of user activities, system operations, and any errors that occur during the paper generation process. Provide meaningful error messages and appropriate handling mechanisms to assist users in case of issues or failures.

Security and Privacy:

Implement robust security measures to protect the database and user data from unauthorized access or breaches. Comply with privacy regulations and ensure that sensitive user information is managed securely.

Performance and Scalability:

Design the system to manage a large volume of data and concurrent user requestsefficiently.

Database Integration:

Connect to a database or multiple databases containing relevant information andresearch data.

Retrieve and query data from the database(s) based on user requirements.User

Interface:

Provide a user-friendly interface for users to input their requirements, such astopic, keywords, citation style, and desired paper length.

2.4 Nonfunctional Requirements**2.5 Performance Requirements**

To clarify, you are looking for performance requirements for an automated system that generates papers using a database. While specific requirements may vary depending on the project's scopeand needs, here are some performance considerations to keep in mind:

Speed: The system should generate papers efficiently, minimizing processing time to ensure timely results. Consider the time required to retrieve data from the database, generate content, and format the final paper.

Scalability: The system should be capable of managing a growing database and increasing workload. As the database expands and more papers are generated, the system should be able to manage the increased demand without significant performance degradation.

Security: Ensure the system implements appropriate security measures to protect sensitive data within the database and maintain the integrity of generated papers. This includes access controls, encryption, and secure communication protocols.

User satisfaction: The system should meet or exceed user expectations. Solicit feedback from users to identify areas for improvement and refine the system's performance accordingly.

2.5.1 Safety Requirements

When it comes to auto-generating papers using a database, there are several safety requirements and considerations to keep in mind. While I can provide you with some general guidelines, please note that specific safety requirements may vary depending on the nature of the papers, the database being used, and any applicable regulations. Here are some important considerations:

Data Privacy and Security:

Ensure that the database and any associated data are protected by appropriate security measures. Implement access controls, encryption, and data anonymization techniques to safeguard sensitive information.

Quality Assurance:

Establish mechanisms to verify the accuracy, reliability, and quality of the auto-generated papers. Implement processes to identify and rectify errors or inaccuracies.

Continuous Monitoring and Improvement:

Regularly monitor the auto-generation process, evaluate its effectiveness, and make improvements, as necessary. Stay updated with evolving safety practices and incorporate them into your system.

2.5.2 Security Requirements

When it comes to auto-generating papers using a database, it is crucial to consider security requirements to protect the integrity, confidentiality, and availability of the data. Here are some key security requirements to keep in mind:

Access Control:

Implement strict access control mechanisms to ensure that only authorized individuals or systems can access the database. This can involve user authentication, role-based access control (RBAC), and strong password policies.

Data Encryption:

Apply encryption techniques to safeguard sensitive data while it is stored in the database or transmitted over networks. Encryption can help protect against unauthorized access or data breaches.

Secure Communication:

Utilize secure communication protocols, such as HTTPS, to encrypt data in transit between the user interface and the database. This prevents interception or tampering of data during transmission.

Input Validation:

Implement robust input validation mechanisms to prevent SQL injection and other forms of malicious input. Validate and sanitize user inputs to mitigate the risk of unauthorized access or manipulation of the database.

2.5.3 Usability Requirements

When considering the usability requirements for auto-generating a paper using a database, it is important to focus on the needs and expectations of the users who will be utilizing the system. Here are some key usability requirements to consider.

User Interface (UI) Design:

The user interface should be intuitive, easy to navigate, and visually appealing. It should provide clear instructions and guidance on how to interact with the system. Consider using a modern and responsive design that adapts well to different devices and screen sizes.

User-Friendly Input:

The system should provide a user-friendly way for users to input their requirements or parameters for generating the paper. This could include options such as selecting the topic, specifying the desired length, choosing the writing style, and indicating any specific sources or references to be included.

2.5.4 Reliability Requirements

Reliability requirements for auto-generating a paper using a database involve ensuring the system's dependability, accuracy, and availability. Here are some key reliability requirements to consider.

Accuracy and Validity:

The generated papers should be accurate and valid, reflecting the requested parameters and utilizing reliable information from the database. The system should employ robust algorithms and data validation techniques to ensure the integrity of the generated content.

Error Handling and Recovery:

The system should have robust error handling mechanisms in place to gracefully manage unexpected situations. It should provide meaningful error messages to users and offer appropriate recovery options. The system should also be designed to minimize the impact of errors, ensuring the continuity of the service.

Login and Auditing:

The system should maintain detailed logs of user activities, generated papers, and any modifications made to the database. This facilitates auditing, troubleshooting, and the ability to track any issues or inconsistencies. Regular monitoring and analysis of the logs can help identify potential reliability issues.

Performance and Scalability:

The system should be designed to manage a significant number of concurrent users and large volumes of data. It should be able to scale effectively to accommodate increasing user demands without sacrificing performance. Performance testing and monitoring should be conducted to identify and address any bottlenecks or performance issues.

2.5.5 Domain Requirements

Following are the Domain requirements for our application:

Database:

Postgres

Frontend:

Vuejs

Server:

Center Server

Chapter 3

Use Case Analysis

Chapter 3: Use Case Analysis

A research organization wants to automate the process of generating research articles based on the data they have collected. They have a vast database containing research findings, experimental data, and related information. The goal is to create a system that can generate high-quality research articles using this data and store them in a database for future reference.

3.1. Use Case Model

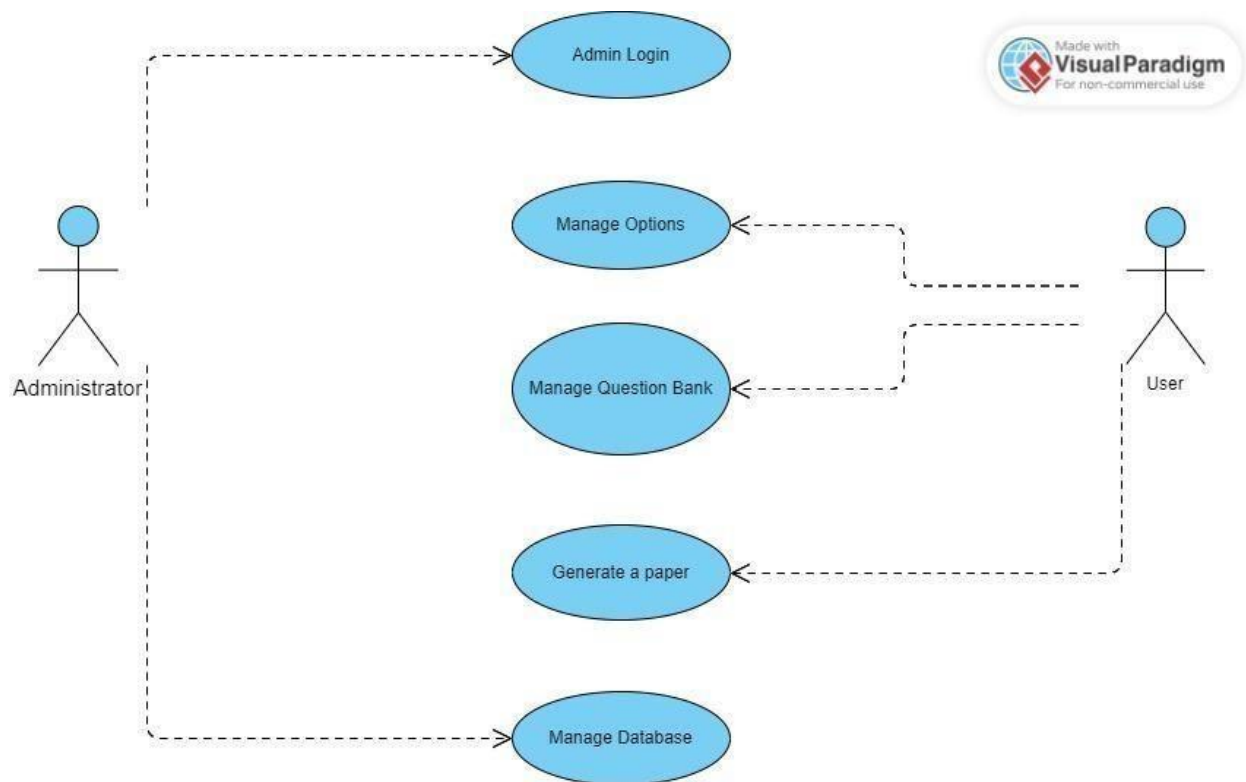


Figure 2 Use Case Model

3.2. Use Cases Description

Functional Requirement of the System:

- **Administrator:** This person will be responsible for adding a new user and managing the database.
- **Faculty/User:** This user will be able to generate the paper according to his requirement.

Chapter 4

System Design

Chapter 4: System Design

Designing a system for automatically generating papers using only a database involves several components and processes. Here is a high-level overview of the system design:

Database Design:

Define the database schema to store the necessary information for paper generation.

Identify and create tables to store data such as research articles, citations, keywords, and other relevant information.

Data Collection and Storage:

Develop a mechanism to collect and store research articles, scholarly data, and other relevant content in the database.

Implement a data acquisition process to continuously update the database with the latest information.

Preprocessing:

Extract and preprocess the data from the database to ensure it is in a suitable format for paper generation.

Clean the data by removing irrelevant or duplicate information and perform any necessary data transformations.

Content Generation:

Utilize natural language processing (NLP) techniques and algorithms to generate the content of the paper.

Develop algorithms that leverage the data in the database to generate coherent and relevant paragraphs, sections, and overall paper structure.

Incorporate techniques such as text summarization, text generation, and topic modeling to generate high-quality content.

Citation and Referencing:

Implement mechanisms to automatically generate citations and references for the generated paper. Utilize the information stored in the database, such as author names, publication dates, and journal information, to generate accurate and properly formatted citations.

Formatting and Styling:

Design templates or stylesheets to ensure proper formatting of the generated papers. Incorporate rules and guidelines for font styles, paragraph spacing, section headings, and other formatting elements.

Review and Quality Assurance:

Implement a review mechanism to assess the generated paper's quality, readability, and coherence.

Develop algorithms or employ human reviewers to check for grammar, clarity, and other aspects of the paper.

Iterate on the content generation and post-processing steps based on feedback received from the review process.

PDF/Output Generation:

Generate the final paper output in a suitable format such as PDF or HTML.

Incorporate the formatted content, citations, and other elements into the final paper output.

Implement mechanisms to export or store the generated papers for further use.

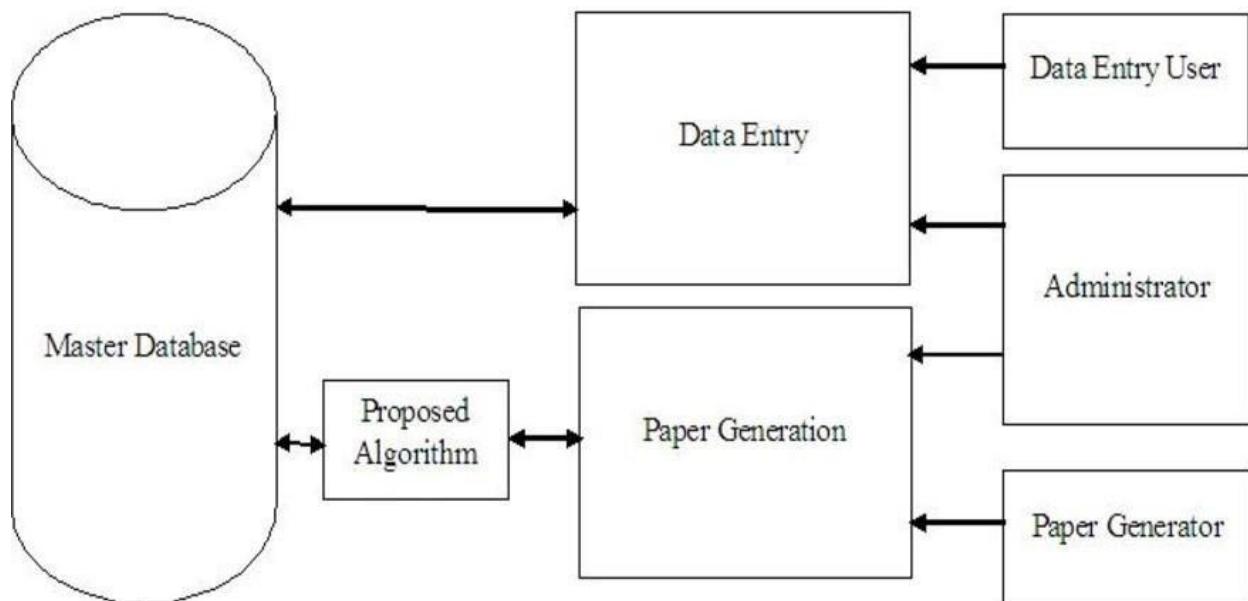
4.1. Architecture Diagram

Figure 3 Architecture Diagram

4.2. Domain Model

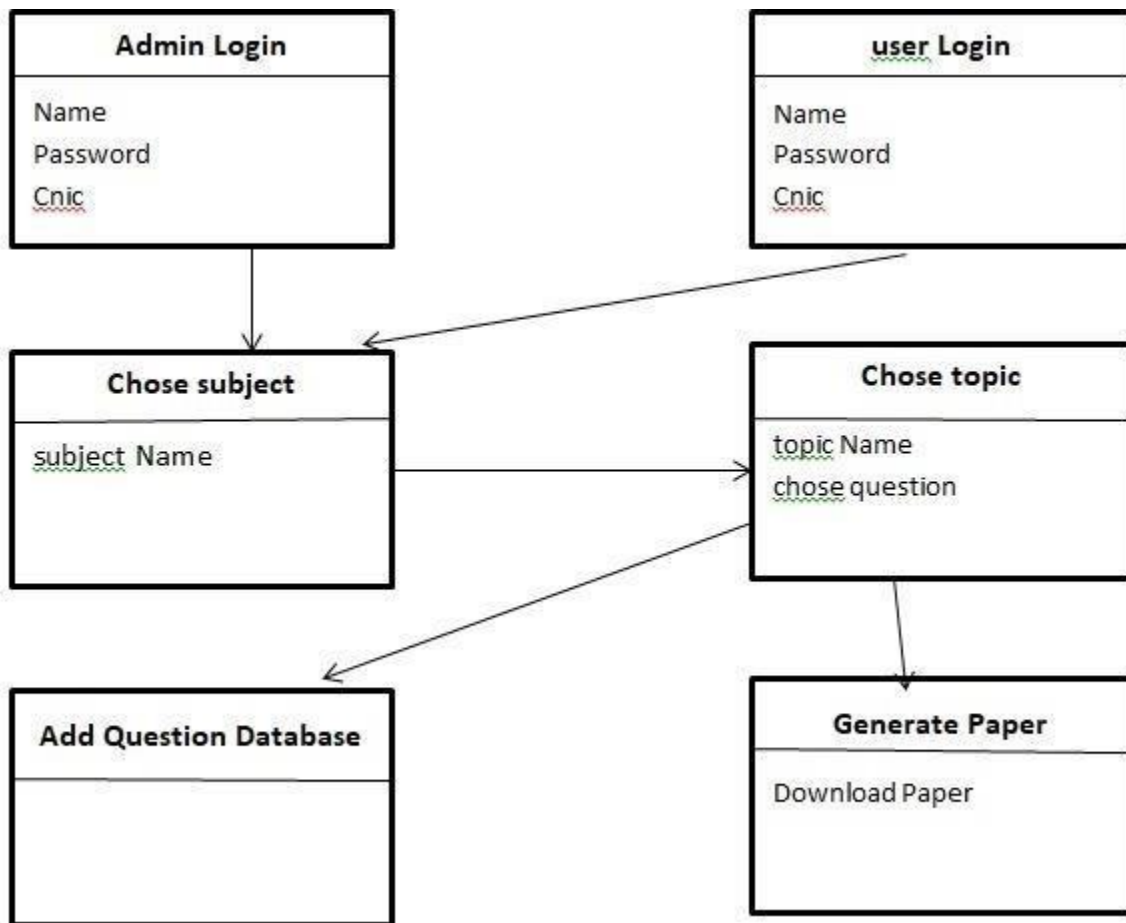


Figure 4Domain Model

4.3. Entity Relationship Diagram with data dictionary

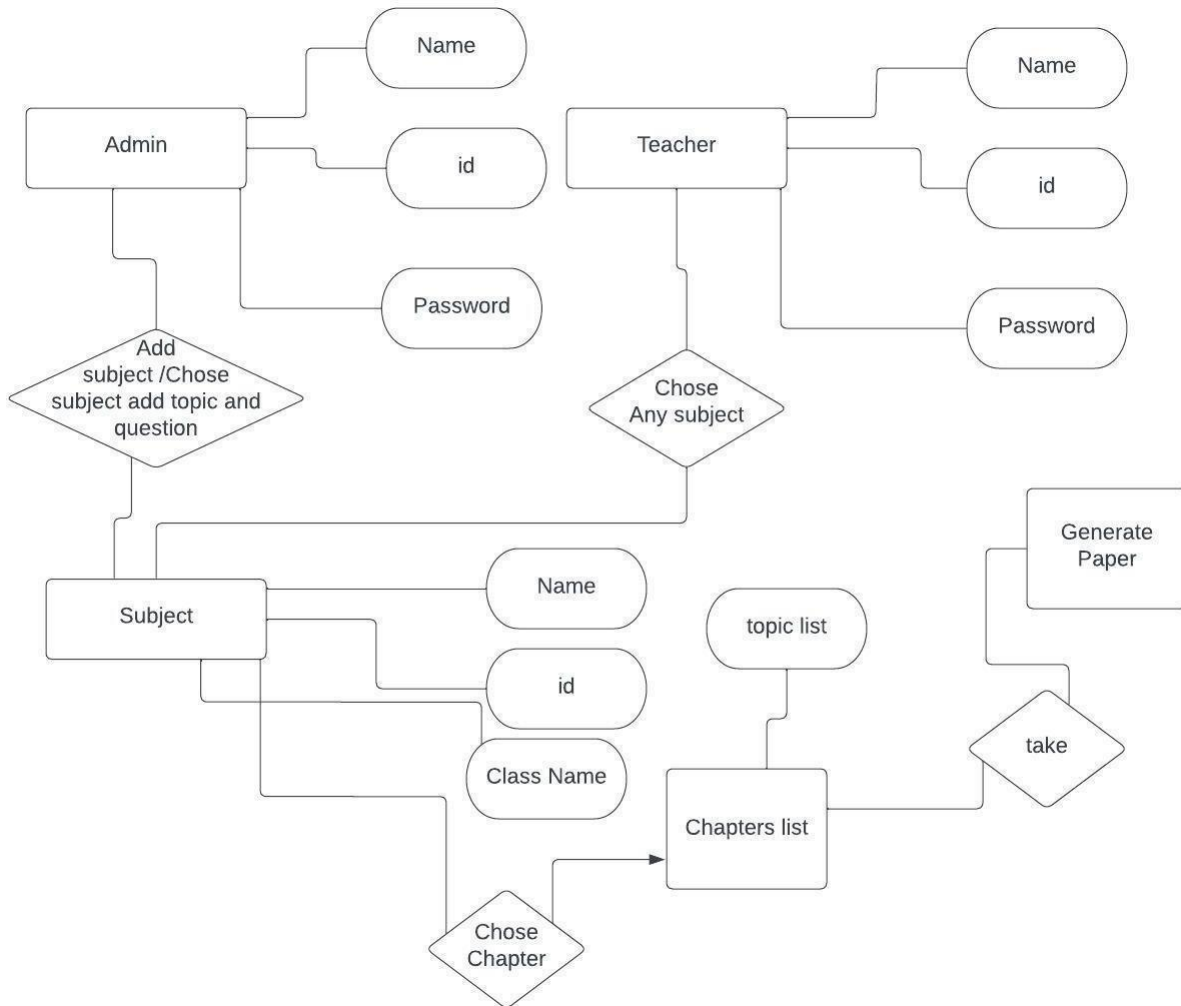


Figure 5ERD

4.4. Class Diagram

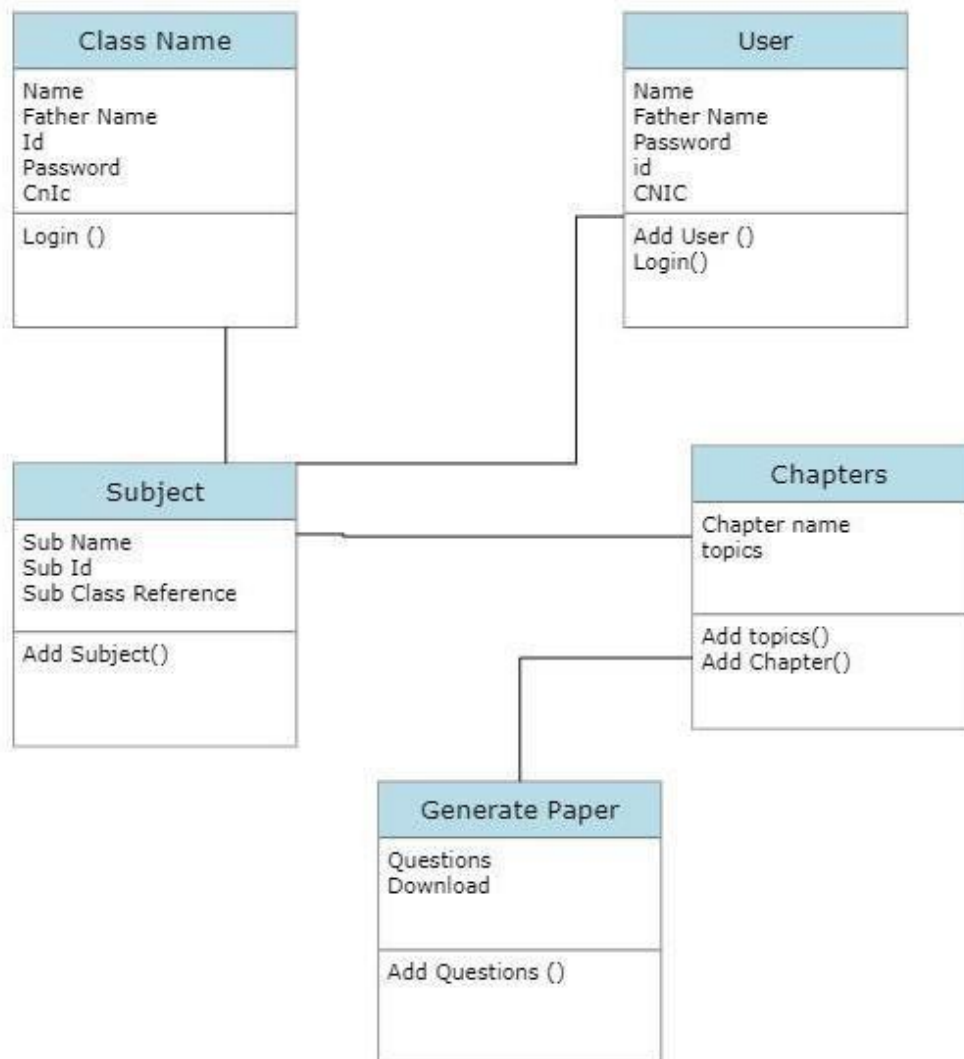


Figure 6 Class Diagram

4.5. Sequence / Collaboration Diagram

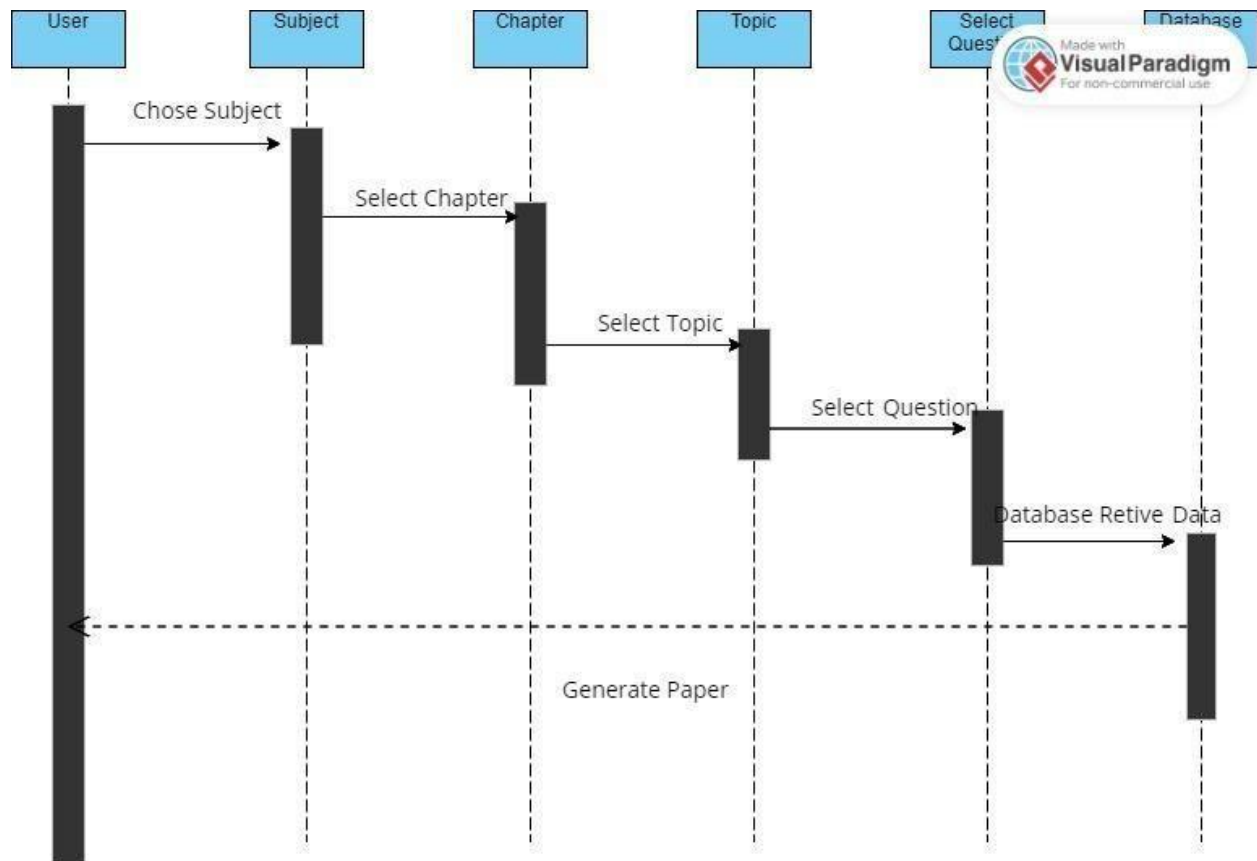


Figure 7Sequence Diagram

4.6. Activity Diagram

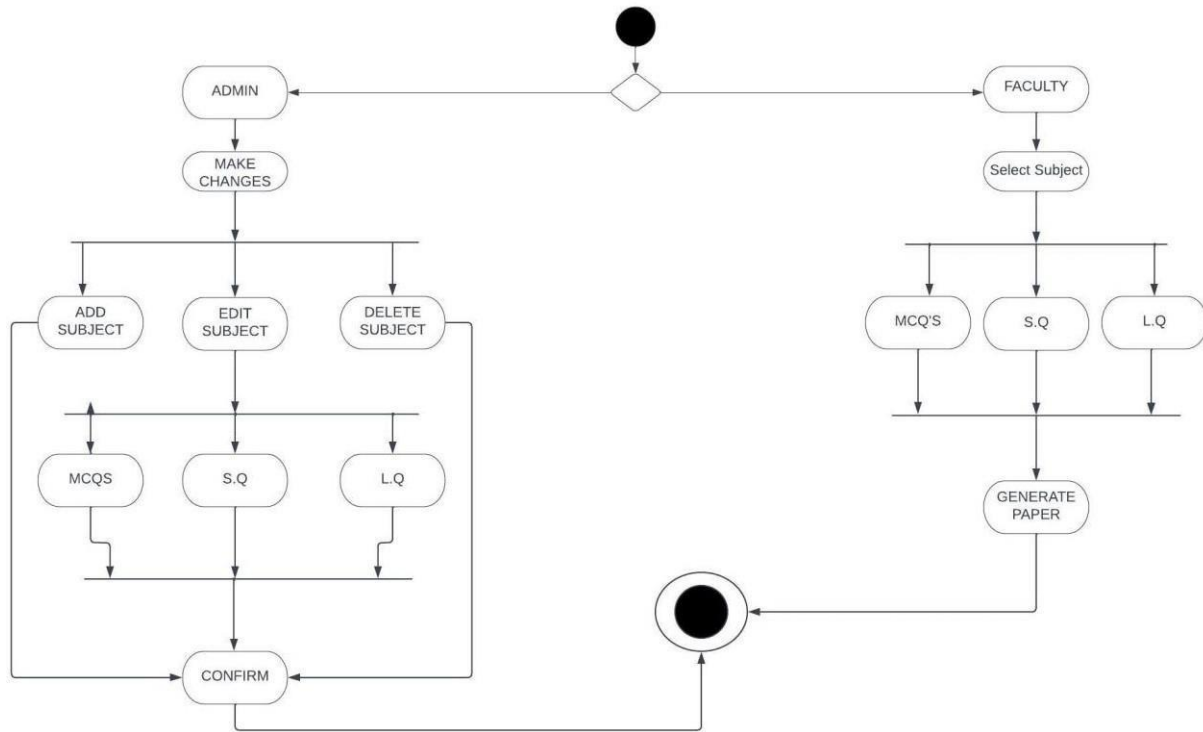


Figure 8 Activity Diagram

4.7. State Transition Diagram

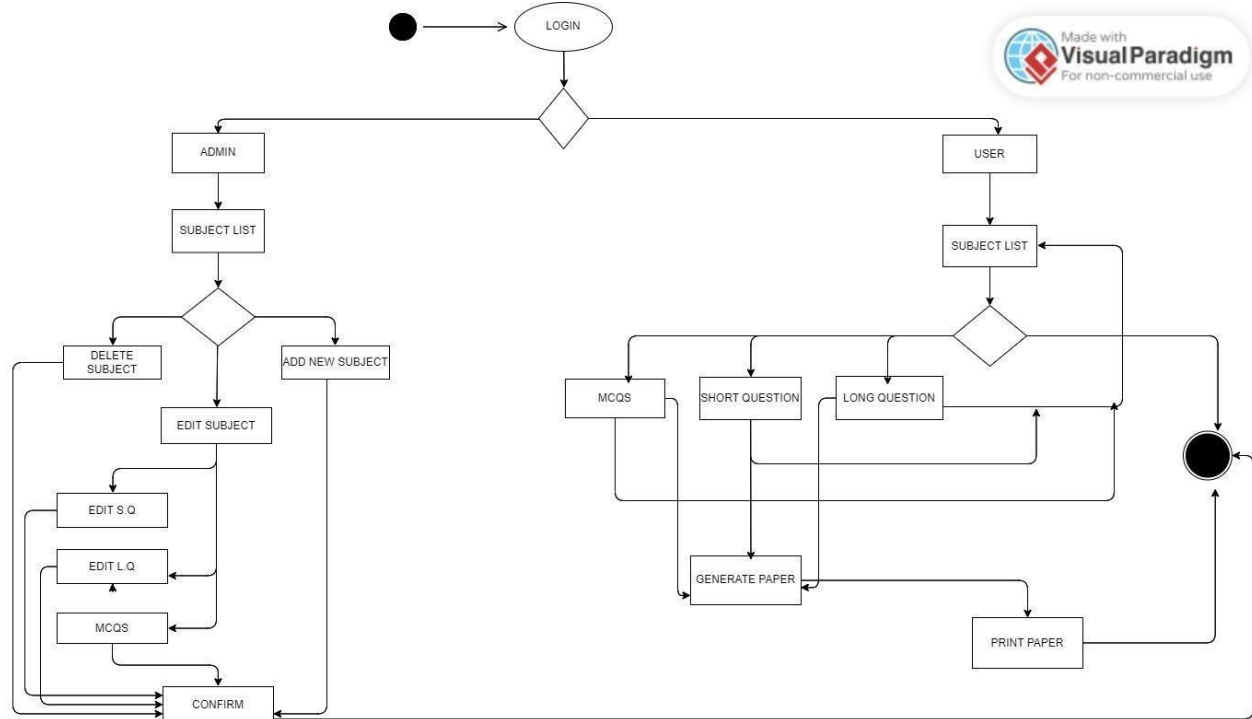


Figure 9 State Diagram

4.8. Component Diagram

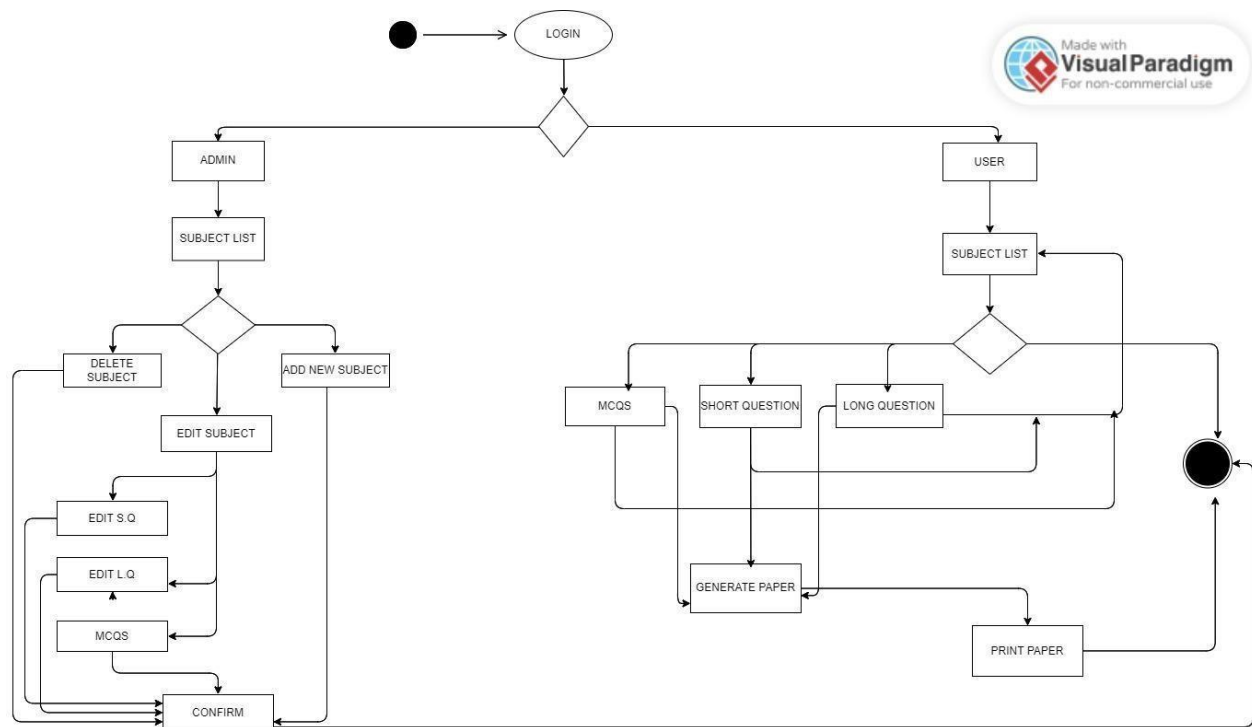


Figure 10 Component Diagram

4.9. Deployment Diagram

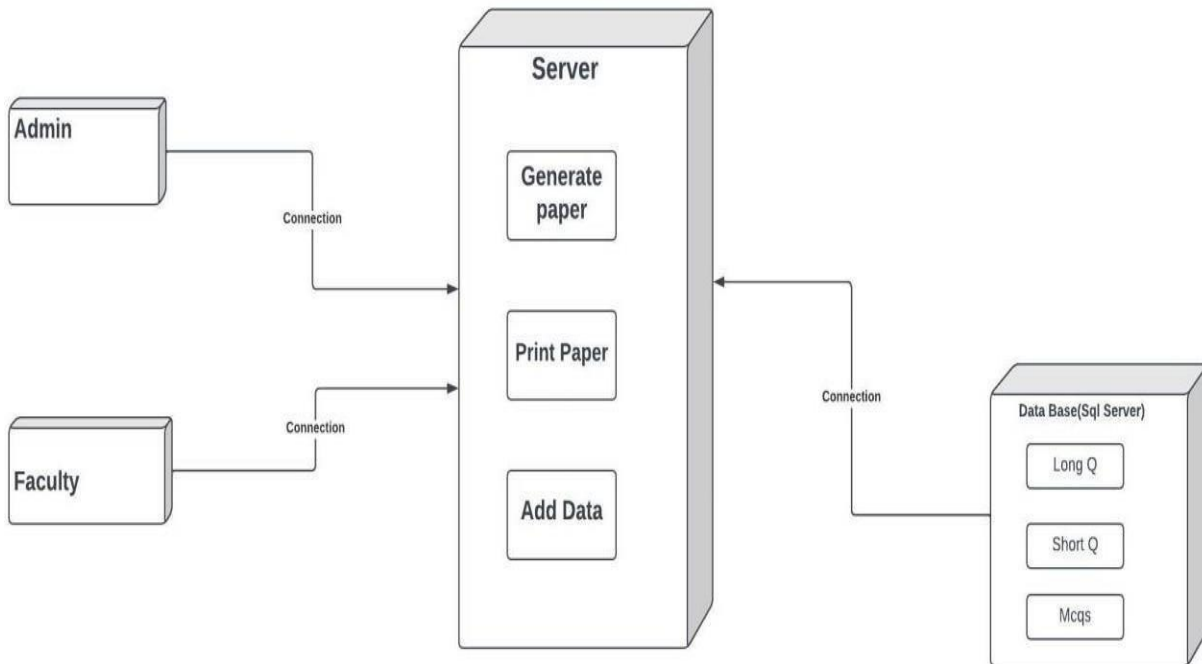


Figure 11Deployment Diagram

4.10. Data Flow diagram

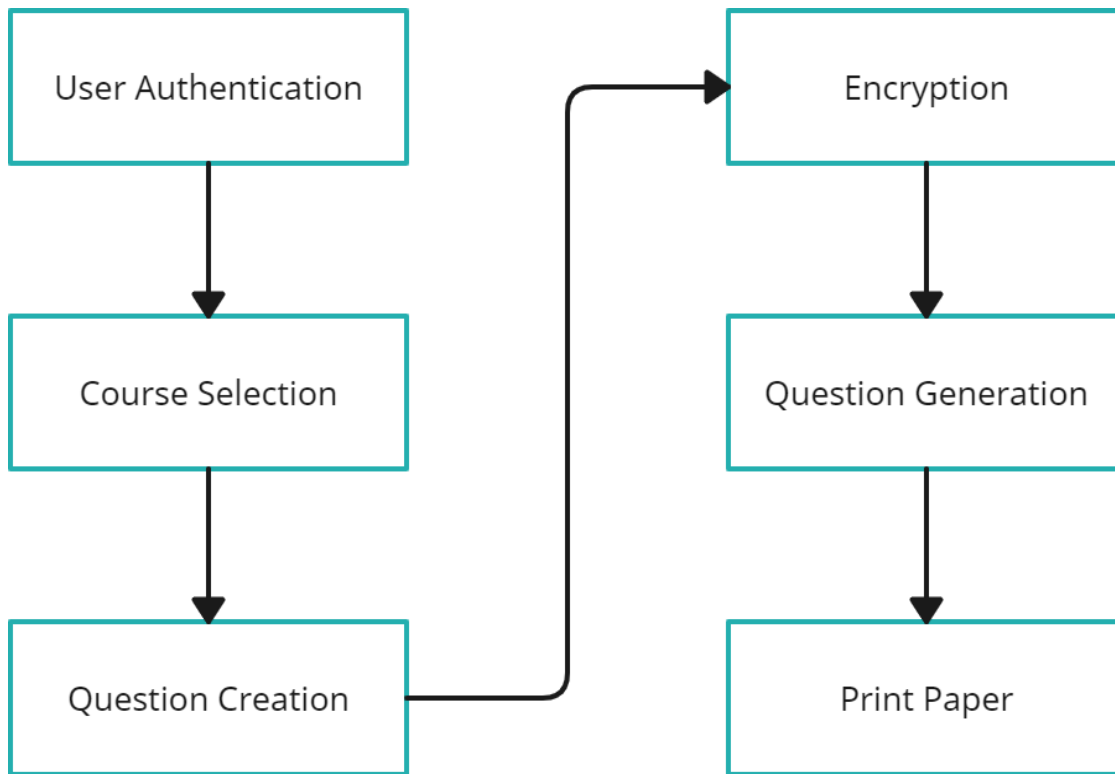


Figure 12 Data Flow Diagram

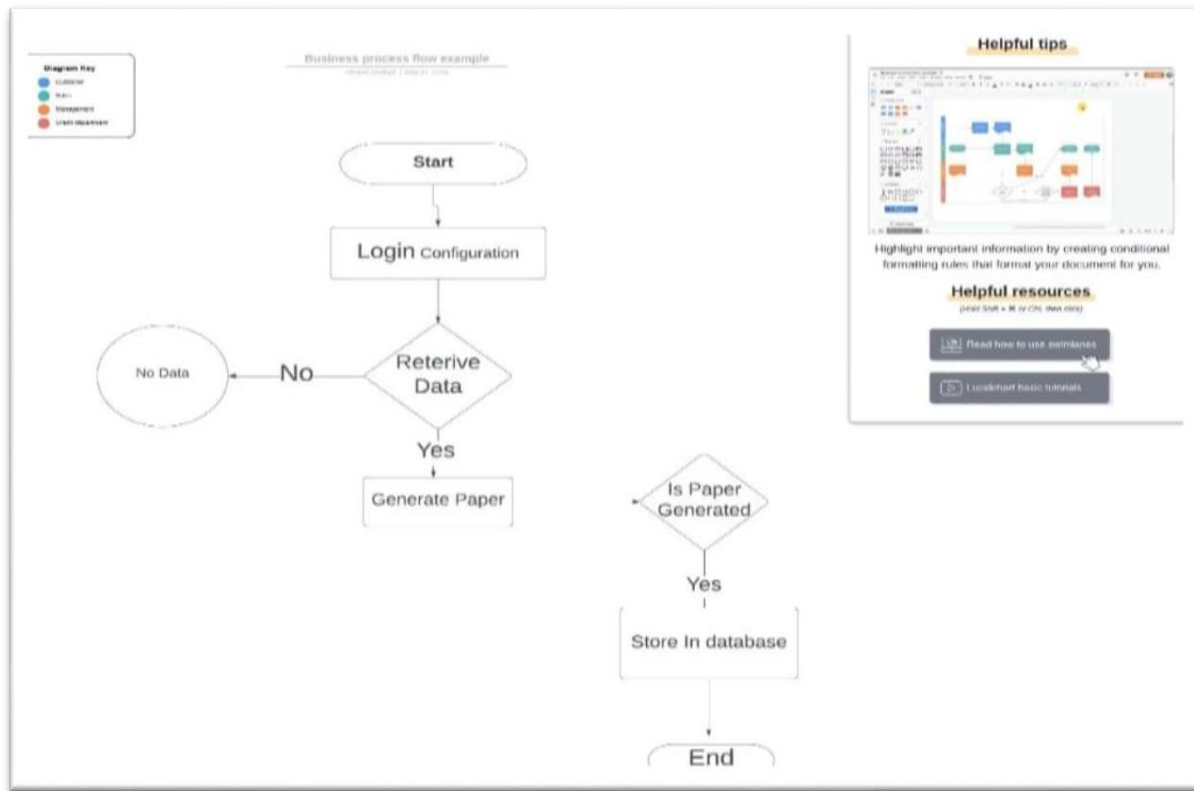
Chapter 5

Implementation

Chapter 5: Implementation

The working of Automated Generated Paper is that the data related to the subjects will be stored according to the topics in the database. The data will be of three categories. Multiple Choice Questions, Short Questions and Long Questions. There will be two users who can access this database, Admin and Faculty member. Admin will be able to add and remove data from the database after getting permission from higher authorities and the faculty member will be able to create an exam according to the requirement. Then the exam will be able to get printed out.

5.1. Important Flow Control/Pseudo codes



5.2. Components, Libraries, Web Services, and stubs

Comments and documentation make the code easy to understand.

- Code must be readable.
- Code must be reusable, which saves a lot of time.
- Conform to the coding standards and user requirements.

5.3. Deployment Environment

- Sublime
- Visual studio
- OS: Windows
- Data store: SQLite, MySQL other servers using APIs.

5.4. Tools and Techniques

Languages

- Django rest framework
- Python
- Postgres
- Vue.js
- JavaScript
- HTML
- CSS
- Bootstrap
- NLP

TOOLS:

- Sublime
- Microsoft Visual Studio

5.5. Best Practices / Coding Standards

Comments and documentation make the code easy to understand.

- Code must be readable.
- Code must be reusable, which saves a lot of time.
- Conform to the coding standards and user requirements

5.6. Version Control

To implement version control for an auto-generated paper using a database, you can follow these general steps:

Database Setup: Set up a database to store the auto-generated papers and their versions. You can use a relational database like MySQL or PostgreSQL, or a NoSQL database like MongoDB, depending on your requirements.

Document Schema: Define a document schema to represent the structure of a paper. This schema should include fields such as title, abstract, content, author, timestamp, and version number.

Versioning Strategy: Determine the versioning strategy you want to use. There are several approaches you can consider, such as:

a. **Incremental Versioning:** Each time a new version of a paper is generated, increase the version number by one.

b. **Snapshot Versioning:** Create a latest version that represents a snapshot of the entire paper whenever any changes are made.

c. **Differential Versioning:** Store only the changes made between versions to minimize storage requirements.

Choose the versioning strategy that best fits your use case.

Auto-generation Process: Develop the process or algorithm for auto-generating papers based on the available data. This process could involve fetching information from the database, applying natural language processing techniques, and generating the paper content.

Storing Paper Versions: Whenever a new paper is generated, store it in the database as a latest version of the corresponding paper record. Update the version number, timestamp, and any other relevant metadata.

Retrieving Paper Versions: Implement functionality to retrieve specific versions of a paper from the database. You can use queries to fetch papers based on their unique identifiers, version numbers, or other criteria.

Change Tracking and Comparison: If you choose to implement differential versioning, you will need to track changes between versions. You can use text comparison algorithms or libraries to identify the differences between two versions and store only the updated sections.

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

Testing and evaluation are critical components in the development of automated generating systems. Rigorous testing ensures the system's reliability, accuracy, and adherence to predefined criteria. Evaluation involves assessing the generated content against quality metrics, user expectations, and specific use cases, providing valuable insights for continuous improvement and refinement of the automated generation process.

6.1. Use Case Testing

6.1.1 Login Page Testing

Table Login Page Testing

Test Case ID	TC-001
Test Case Summary	When admin click on login button it must be login and show the main page.
Prerequisites	User must be on login page and have username and password.
Test Procedure	Verify the user email and password.
Actual Result	User successful login.
Status	Successful.
Test Steps	• Navigate the login page. • Enter the username. • Enter the password. • And click on login button. • Logout

6.1.2 Sign Up Testing

Table Sign Up Page Testing

Test Case ID	TC-002
Test Case Summary	User must be signup after filling form.
Prerequisites	User must be on signup page.

Test Procedure	Verify the inputs given in form.
Expected Result	User must be allotted code and username, password and auto generated paper page
Actual Result	User successful signup.
Status	Successful.
Test Steps	• Navigate the login page. • Fill out the form. • And click on login button

6.1.3 Extension Errors

Table Extension Error

Test Case ID	TC-001
Test Case Summary	When admin click on login button it must be login and show the main page.
Prerequisites	User must be on login page and have username and password.
Test Procedure	Verify the user email and password.
Actual Result	User successful login.
Status	Successful.
Test Steps	• Navigate the login page. • Enter the username. • Enter the password. • And click on login button. • Logout

6.2 Equivalence partitioning

Equivalence partitioning is a software testing technique that divides the input space into classes or groups of data, where each group is expected to exhibit similar behavior. This helps to reduce the number of test cases while still providing effective test coverage. In the context of an auto-generated question paper website, let's consider equivalence partitioning for a few key functionalities:

1. User Registration:

Valid Inputs:

Equivalence Class 1: Valid name, email, and password.

Equivalence Class 2: Valid name, email, and password with special characters.

Invalid Inputs:

Equivalence Class 3: Invalid email format.

Equivalence Class 4: Password less than the minimum length.

Equivalence Class 5: Empty fields.

2. Question Paper Generation:

Valid Inputs:

Equivalence Class 1: Selecting a valid subject and grade.

Equivalence Class 2: Customizing the question paper with valid criteria (e.g., difficulty level).

Invalid Inputs:

Equivalence Class 3: Selecting an invalid subject.

Equivalence Class 4: Selecting an invalid grade.

Equivalence Class 5: Choosing conflicting customization criteria.

3. Preview and Editing:

Valid Inputs:

Equivalence Class 1: Viewing a generated question paper.

Equivalence Class 2: Making valid edits to the question paper.

Invalid Inputs:

Equivalence Class 3: Trying to edit a finalized question paper.

Equivalence Class 4: Attempting to save edits with invalid changes.

4. Download and Print:

Valid Inputs:

Equivalence Class 1: Downloading a finalized question paper.

Equivalence Class 2: Printing a question paper after customization.

Invalid Inputs:

Equivalence Class 3: Trying to download before finalizing the paper.

Equivalence Class 4: Attempting to print with no printer connection.

5. User Feedback:

Valid Inputs:

Equivalence Class 1: Providing positive feedback.

Equivalence Class 2: Offering constructive criticism.

Invalid Inputs:

Equivalence Class 3: Submitting feedback without any comment.

Equivalence Class 4: Attempting to provide feedback without being logged in.

6. Security Measures:

Valid Inputs:

Equivalence Class 1: Securely registering with valid credentials.

Equivalence Class 2: Accessing and modifying one's own question papers.

Invalid Inputs:

Equivalence Class 3: Unauthorized access attempts.

Equivalence Class 4: Trying to modify another user's question papers without permission.

6.3 Boundary value analysis

Boundary Value Analysis is a testing technique that focuses on the values at the edge of an input domain. This is particularly important to identify potential errors or vulnerabilities that might occur near the limits of valid input. In the context of an auto-generated question paper website, here is how you could apply Boundary Value Analysis to key functionalities:

1. User Registration:

Valid Inputs:

Minimum valid name length (e.g., 1 character).

Maximum valid name length (e.g., 50 characters).

Minimum valid password length (e.g., 8 characters).

Maximum valid password length (e.g., 20 characters).

Invalid Inputs:

Name with one character less than the minimum.

Name with one character more than the maximum.

Password with one character less than the minimum.

Password with one character more than the maximum.

2. Question Paper Generation:

Valid Inputs:

Selecting the minimum valid grade.

Selecting the maximum valid grade.

Choosing the minimum valid difficulty level.

Choosing the maximum valid difficulty level.

Invalid Inputs:

Selecting a grade one level less than the minimum.

Selecting a grade one level more than the maximum.

Choosing a difficulty level one level less than the minimum.

Choosing a difficulty level one level more than the maximum.

3. Preview and Editing:

Valid Inputs:

Viewing the first question in a generated paper.

Viewing the last question in a generated paper.

Editing the first question.

Editing the last question.

Invalid Inputs:

Attempting to go back from the first question.

Attempting to go forward from the last question.

4. Download and Print:

Valid Inputs:

Downloading a finalized question paper with the minimum number of questions.

Downloading a finalized question paper with the maximum number of questions.

Printing a question paper with the minimum number of questions.

Printing a question paper with the maximum number of questions.

Invalid Inputs:

Attempting to download a question paper with zero questions.

Attempting to print a question paper with zero questions.

5. User Feedback:

Valid Inputs:

Providing feedback with the minimum number of characters.

Providing feedback with the maximum number of characters.

Invalid Inputs:

Providing feedback with one character less than the minimum.

Providing feedback with one character more than the maximum.

6. Security Measures:

Valid Inputs:

Logging in with the minimum valid credentials.

Logging in with the maximum valid credentials.

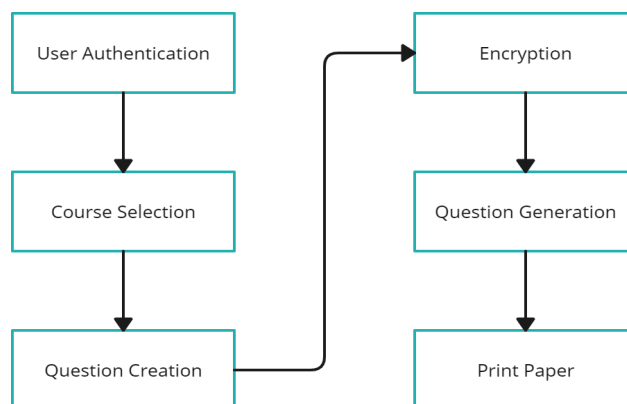
Invalid Inputs:

Attempting to log in with one character less than the minimum.

Attempting to log in with one character more than the maximum.

6.4. Data flow testing

Data flow testing in an automated generating system involves analyzing the movement and transformation of data within the system's processes. The goal is to ensure that data is managed accurately throughout the content generation lifecycle. This testing method identifies potential points of data corruption, loss, or inconsistency, enhancing the system's reliability. By tracing the flow of data from input to output, testers can verify that the automated system processes information correctly, contributing to the overall quality and accuracy of the generated content.



6.5. Unit testing

In an automated generating system, unit testing focuses on validating the individual components or units of the system to ensure they function as intended. This involves testing small, isolated units of code or functionalities to detect errors early in the development process. Unit testing in the context of automated content generation verifies that each component responsible for generating content produces the expected output for given inputs. By systematically assessing the building blocks of the system, unit testing enhances the reliability and quality of the automated content generation process, facilitating early identification and correction of potential issues.

6.6. Integration testing

Table Integration Testing Each Button

Test Case ID	IT_001
Test Case Summary	To verify that all buttons behave as expected
Prerequisites	All buttons must be rendered
Test Procedure	Click on each button to see if it performs correctly.
Expected Result	- Login button should provide you a Page. - Exit button redirect you on login page
Actual Result	- Login buttons provide user to enter in software - Exit button redirect you on a login page
Status	Pass

6.7 Performance testing

6.7.1 Test Case Number: PT-01

Test Case Title: System Response Time

Table System Response Timing

Test Type	Performance Testing	Test Result
Required Performance	The required response time of the system is less than 3 second.	
System Performance	The actual performance response time is two second.	Test passed

6.7.2 Test Case Number: PT-02

Test Case Title: Activity Load Time Testing

Table Activity Load Time Testing

Test Type	Performance Testing	Test Result
Required Performance	The required load time of the page is less than 2 second.	
System Performance	The actual performance response time is one second.	Test passed

6.7.3 Test Case Number: PT-03

Test Case Title: Waiting Time Testing

Table Waiting Time Testing

Test Type	Performance Testing	Test Result
Required Performance	The average waiting time of the system is less than 3 second.	
System Performance	The actual performance response time is two second in some circumstances.	Test passed

6.7.4 Test Case Number: PT-04

Test Case Title: Connection Establish Time Testing

Table Connection Establish Time Testing

Test Type	Performance Testing	Test Result
Required Performance	The connection establish is less than 2 second.	
System Performance	The actual connection establish time is about one second.	Test passed

6.8. Stress Testing

Stress testing in an automated generating system involves subjecting the system to extreme conditions or heavy workloads to assess its stability and resilience. This testing phase aims to identify the system's breaking points and potential failure modes under stress, such as high user loads or data volumes. By simulating intense scenarios, stress testing helps ensure that the automated system can maintain functionality, performance, and content generation accuracy even during challenging conditions. This proactive approach allows developers to address vulnerabilities, optimize resource utilization, and enhance the overall robustness of the automated content generation process.

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

Project Summary

The Auto-Generated Question Paper Website is a comprehensive web application designed to revolutionize the process of creating customized assessments for educators. The platform provides an intuitive and user-friendly interface for educators to effortlessly generate diverse and tailored question papers based on specific criteria such as subject, grade, difficulty level, and question type.

User-Centric Design:

The project places a strong emphasis on user experience, allowing educators to easily navigate through the platform. The registration and authentication system ensures secure access, enabling educators to personalize their assessment materials efficiently.

Automated Question Paper Generation:

One of the standout features is the automated generation of question papers. Educators can input their preferences, and the system dynamically creates well-rounded question papers, incorporating a variety of questions that align with the specified criteria. This significantly reduces the time and effort traditionally required for manual question paper creation.

Customization Capabilities:

The platform offers extensive customization options, allowing educators to fine-tune their question papers. From adjusting difficulty levels to selecting specific question types, the system empowers educators to tailor assessments according to the unique needs of their students.

Preview and Editing Functionality:

To further enhance user control, the system provides a preview of generated question papers before finalization. Educators can review and, if necessary, make edits to ensure the content aligns

perfectly with their instructional goals.

Download and Print Features:

The project simplifies the distribution process by enabling educators to download the finalized question papers in various formats. Additionally, a print feature facilitates the traditional distribution of assessments, catering to different teaching environments.

User Feedback Mechanism:

Continuous improvement is facilitated through a robust user feedback mechanism. Educators can provide insights on the effectiveness of generated question papers, allowing the system to adapt and optimize future assessments based on real-world feedback.

Security Measures:

The project prioritizes the security and integrity of user data. Through encryption protocols and access controls, the platform ensures that only authorized users have access to the system, safeguarding sensitive information.

Testing and Quality Assurance:

The development process includes rigorous testing methodologies such as unit testing, use case testing, equivalence partitioning, and boundary value analysis. This ensures the reliability and functionality of the system across various scenarios.

Achievements and Improvements

The Auto-Generated Question Paper Website has achieved remarkable milestones and witnessed substantial improvements since its inception. One of the notable achievements is the successful integration of automated question paper generation, revolutionizing the way educators approach assessment creation. This groundbreaking feature has not only saved educators considerable time and effort but has also enhanced the quality and diversity of question papers, catering to various learning styles and academic levels.

User-centric design has been a key focus, leading to an intuitive interface that simplifies the entire process—from user registration to the customization of question papers. The implementation of a secure authentication system ensures a safe and protected environment for educators to engage with the platform, instilling confidence in the security of their data.

The customization capabilities of the platform have been widely applauded, allowing educators to tailor assessments to meet the specific needs of their students. The introduction of a preview and editing functionality further empowers educators to fine-tune their assessments, ensuring alignment with their instructional objectives.

Download and print features have facilitated seamless distribution of assessments in both digital and traditional formats, accommodating diverse teaching environments. The user feedback mechanism has not only provided valuable insights for continuous improvement but has also fostered a collaborative relationship between the platform and its users.

In terms of technical advancements, rigorous testing methodologies, including unit testing and comprehensive use case testing, have contributed to the robustness of the system. Equivalence partitioning and boundary value analysis have further fortified the platform's reliability across various scenarios.

Critical Review

The Auto-Generated Question Paper Website offers a valuable innovation for educators, streamlining the traditionally labor-intensive process of assessment creation. Automated question paper generation is a standout feature, significantly easing the burden on educators. However, the platform could benefit from more nuanced customization options, allowing educators finer control over specific parameters. The user feedback mechanism is a positive step for continuous improvement, yet a more structured feedback analysis process would enhance its effectiveness.

While security measures are in place, a more exhaustive security audit would ensure the platform's

resilience against potential threats. In summary, the project shows promise in transforming assessment practices, with key opportunities for improvement in customization, feedback analysis, and security considerations.

Lessons Learnt

The development of the Auto-Generated Question Paper Website has provided invaluable lessons that contribute to ongoing project refinement. Firstly, the implementation of automated question paper generation highlighted the importance of striking a balance between system-generated efficiency and

user-desired customization. The feedback mechanism underscored the significance of creating a structured process for analyzing user input to drive meaningful enhancements. Additionally, the project emphasized the critical need for rigorous security measures, prompting a continuous focus on ensuring data protection and system resilience. Lastly, the evolution of the project revealed the significance of scalability planning, especially concerning the integration of advanced features like analytics. Overall, these lessons have become guiding principles, shaping the project's ongoing development, and enhancing its adaptability to the evolving needs of educators and educational institutions.

7.1. Future Enhancements/Recommendations

The Auto-Generated Question Paper Website envisions several exciting future enhancements to further elevate its capabilities. Firstly, the integration with Learning Management Systems (LMS) is a pivotal step toward creating a seamless educational experience. This integration will enhance accessibility, streamline workflows, and provide educators with a comprehensive toolset. Advanced analytics features are on the horizon, promising insightful data-driven perspectives on student performance and assessment effectiveness. Furthermore, the platform anticipates expanding its question database through integration with external sources, ensuring an even more diverse and comprehensive array of questions. Continued collaboration with educators and institutions will guide the development of features that meet evolving educational needs, making the Auto-Generated Question Paper Website a dynamic and adaptive resource for educators worldwide.

C.1. Broacher

About Project

Auto-generating papers refers to the use of automated systems, often powered by artificial intelligence, to create written content without direct human input.

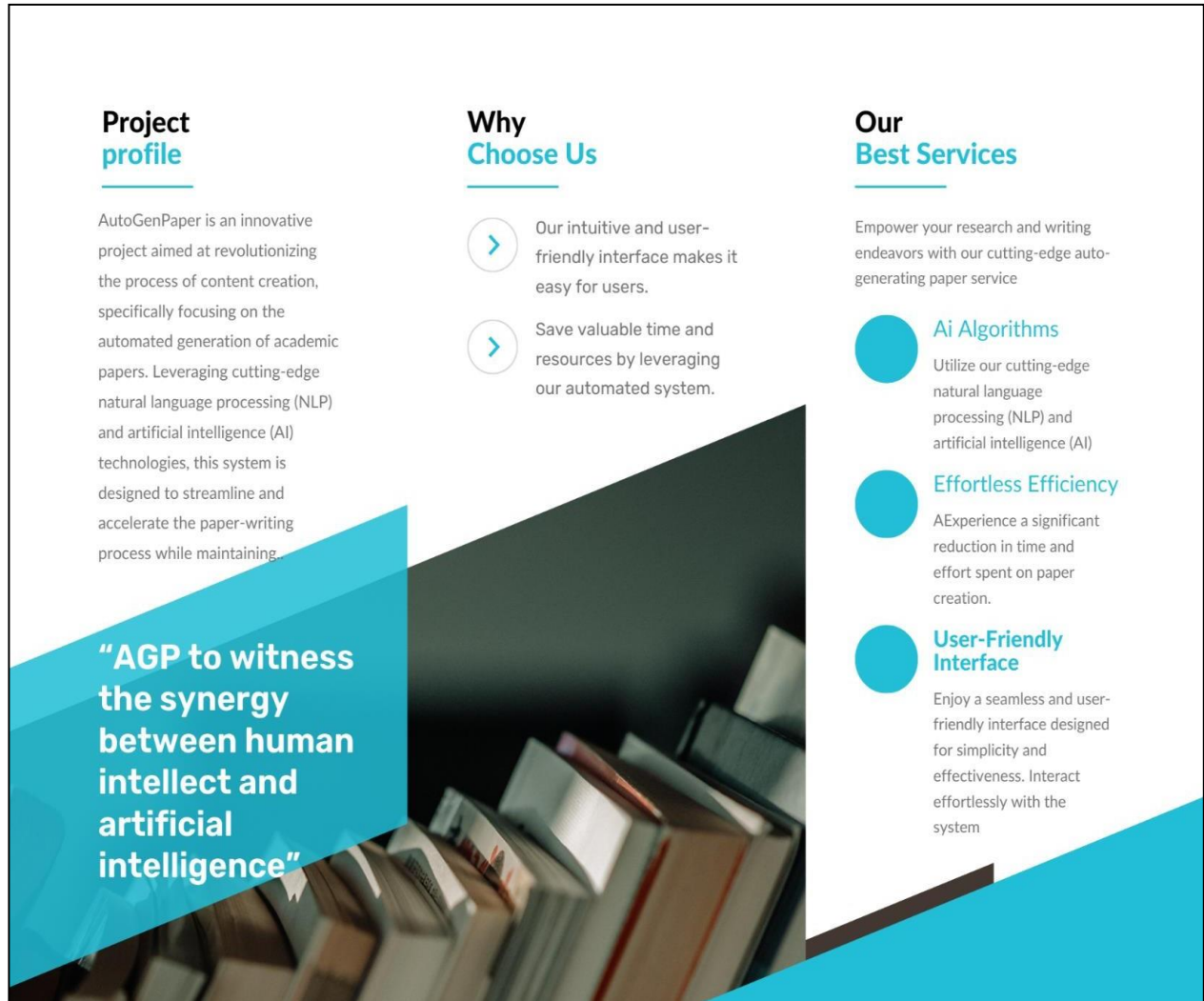




Contact Us

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Automated Generating Paper



Project profile

AutoGenPaper is an innovative project aimed at revolutionizing the process of content creation, specifically focusing on the automated generation of academic papers. Leveraging cutting-edge natural language processing (NLP) and artificial intelligence (AI) technologies, this system is designed to streamline and accelerate the paper-writing process while maintaining...

Why Choose Us

- > Our intuitive and user-friendly interface makes it easy for users.
- > Save valuable time and resources by leveraging our automated system.

Our Best Services

Empower your research and writing endeavors with our cutting-edge auto-generating paper service

- Ai Algorithms**
Utilize our cutting-edge natural language processing (NLP) and artificial intelligence (AI)
- Effortless Efficiency**
Experience a significant reduction in time and effort spent on paper creation.
- User-Friendly Interface**
Enjoy a seamless and user-friendly interface designed for simplicity and effectiveness. Interact effortlessly with the system

“AGP to witness the synergy between human intellect and artificial intelligence”

C.2. Flyer



Auto Generated Paper

Auto-generate papers
and let your ideas flow
effortlessly

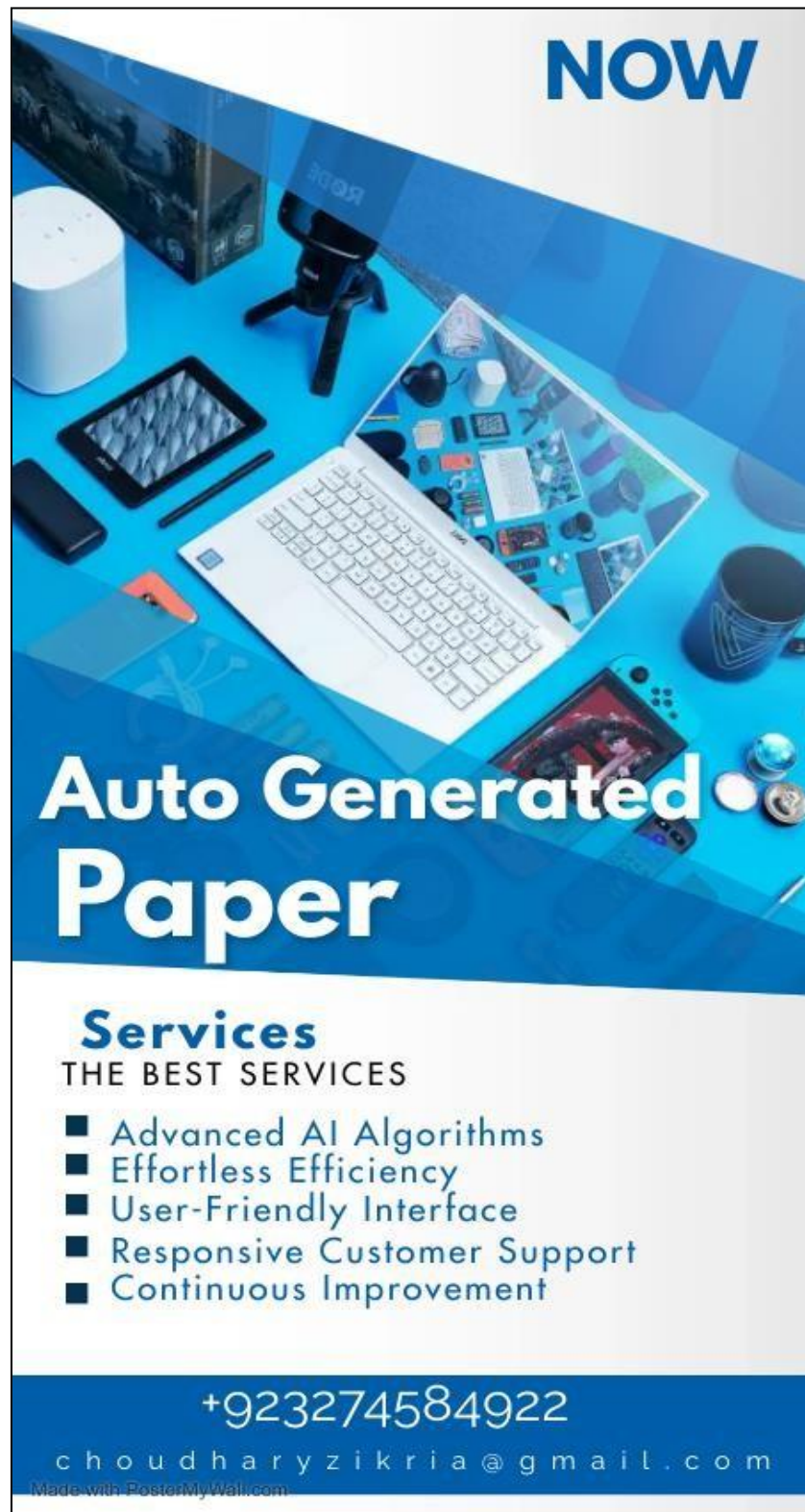
OUR SERVICES

- Advanced AI Algorithms
- Effortless Efficiency
- User-Friendly Interface
- Responsive Customer Support
- Continuous Improvementt

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C.3. Standee



C.4. Banner



Reference and Bibliography

Reference and Bibliography

- <https://www.ijtra.com/view/question-paper-generator-system.pdf>
- <https://www.irjet.net/archives/V7/i5/IRJET-V7I5623.pdf>
- https://ijcrt.org/papers/IJCRT_193832.pdf
- <https://ijtre.com/images/scripts/2017040978.pdf>
- <https://www.ijcaonline.org/archives/volume166/number10/gangar-2017-ijca-914138.pdf>

