

CS 6359.001 Object Oriented Analysis and Design
Web Search Engine
Preliminary Project Plan

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1. Introduction

1.1 Project Overview

CyberMiner is a search engine that accepts input and displays list of URLs, whose description or title matches to the input entered. It takes list of keywords through textbox in the user interface. In output, it displays the list of URLs, titles and descriptions. When the user clicks on the URL, which has been retrieved as the result of the search query, the system takes the user to the corresponding website.

1.2 Project Deliverable

Deliverable	Due date	Team Leader
Preliminary Project Plan	02/02/2022	Rainam Shah
Interim Project I	03/07/2022	Rainam Shah
Final Project I	03/23/2022	Rainam Shah
Interim Project II	04/18/2022	To be announced
Final Project II	04/25/2022	To be announced

2. Project Organization

2.1 Process Model

Our project has followed Agile process model. The agile process model encourages continuous iterations of development and testing. Each incremental part of our project has been developed over an iteration, and each iteration is designed to be small and manageable so it can be completed within a couple of weeks. Each iteration focuses on implementing a small set of features completely.

2.2 Organizational Structure & Project responsibilities

Team Distribution

Team	Members	Team Leader
Frontend Team	Rainam Shah Dhyani Gandhi AbhijeetSinh Vaghela Chenyue Li	Rainam Shah
Backend Team	Poojitha Bijjam Akash Karuturi Rohith Jallipalli Pavan Pabbisetty Yasaswi Devi Tiyyagura	Poojitha Bijjam
UML and Documentation Team	Dharav Bhatt Rutvik Avaiya Yash Majmudar Yang Yang	Dharav Bhatt

3. MANAGERIAL PROCESS

3.1 Management Objectives and Priorities

We have divided our main objective which is to create a search engine into many subtasks that is to be performed to get the final Search Engine result. The top priority of the system is to get the input query from the user and then return the result according to that query to the user which is the basic requirement of the search engine. So, we divided our sub-tasks keeping this immediate goal in mind and then will work towards increasing the data in database, giving autocomplete and suggestion features and providing user more flexibility to enter search query.

3.2 Constraints

The biggest constraint is the data. There is millions and trillions TB of data out there in the world and storing all that data in the database and retrieving results from it is very difficult. So, there will be a constraint on the amount of the data we can store and provide to the user.

3.3 Risk Management

The database we created has capability of storing only a limited amount of data. There are tons of different kinds of data in real world. Accommodating each kind of data is a cumbersome task. Therefore, there might be cases, where user will end up getting “no result” or “result not found”. But this constraint is such that we can’t do much to overcome it.

3.4 Monitoring and Controlling mechanisms

When the team is large for a project, it becomes necessary to have a monitoring mechanism to track the progress of the project and the work that team members do. For that we have created 3 sub-teams and have a team leader for each team. The task of individual team leader will be to conduct regular meetings with the team to check up on the progress of work of their respective teams and then report it to the project leader. The project leader organizes meeting with the team leaders 2 times a week to discuss about the progress of the respective team’s work and the future work to be done. Then finally there is a team meeting every week so that each team member can be on the same page regarding the tasks and can discuss about the improvements that can be done for the project and communication.

4. Technical Process

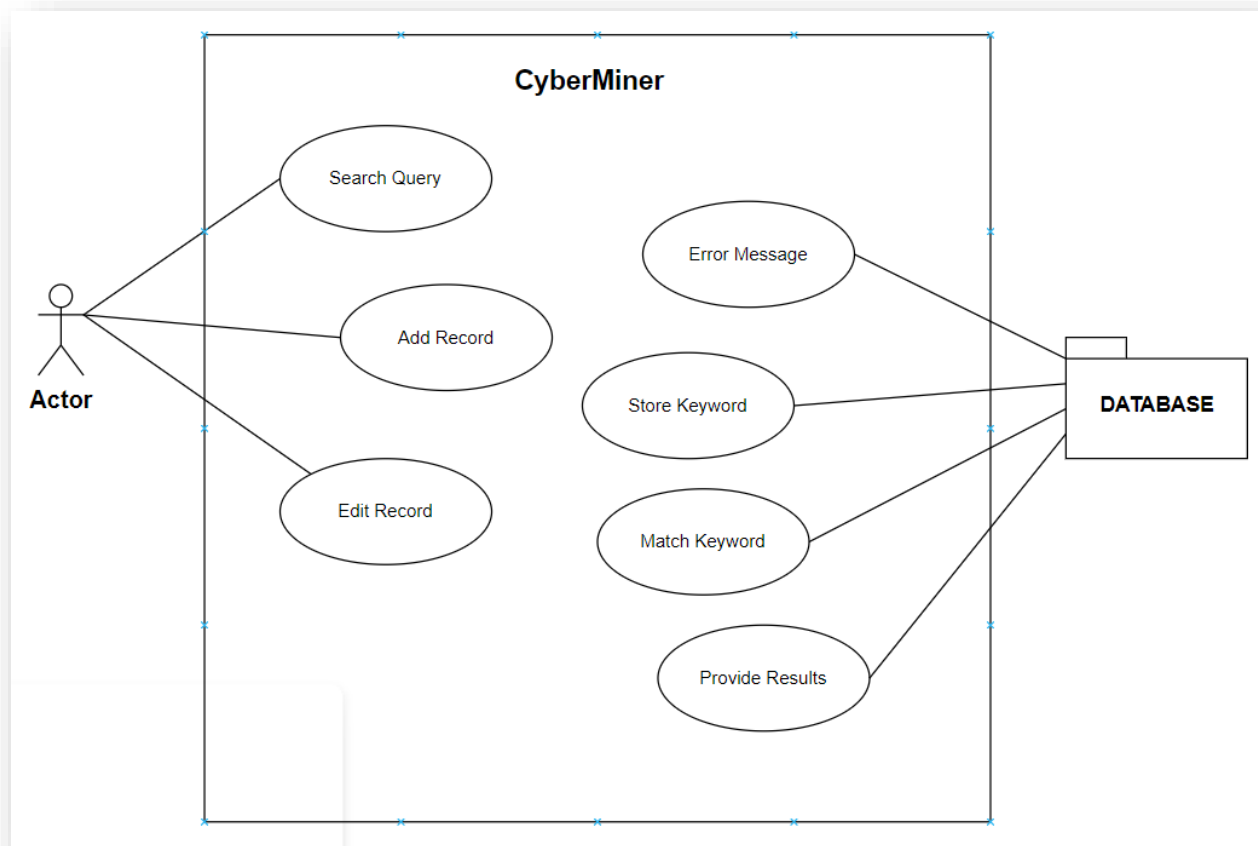
4.1 Method, Tool and Techniques

Front-end Technologies – React JS.

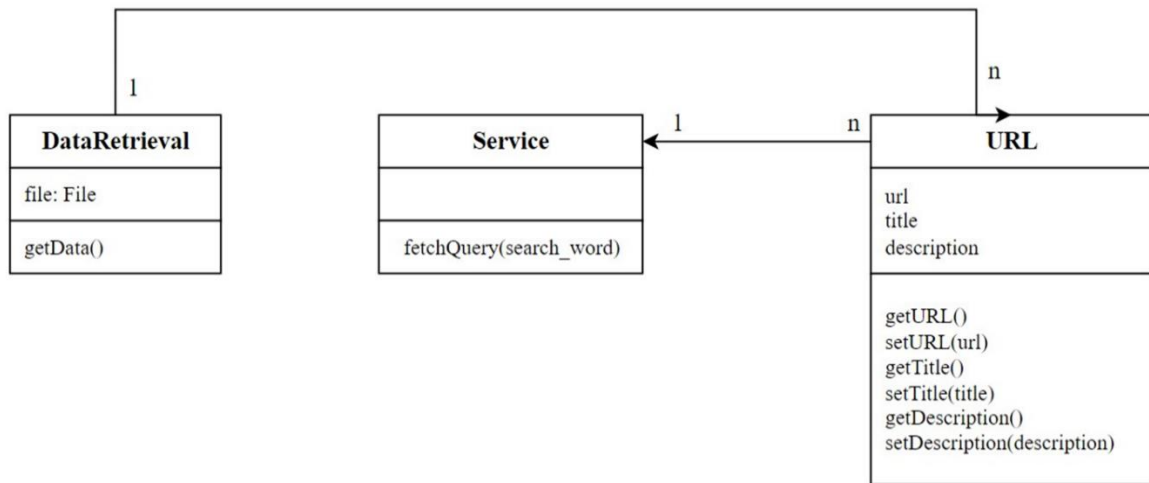
Back-end Technology – Python (Flask Web-framework).

4.2 Software Document

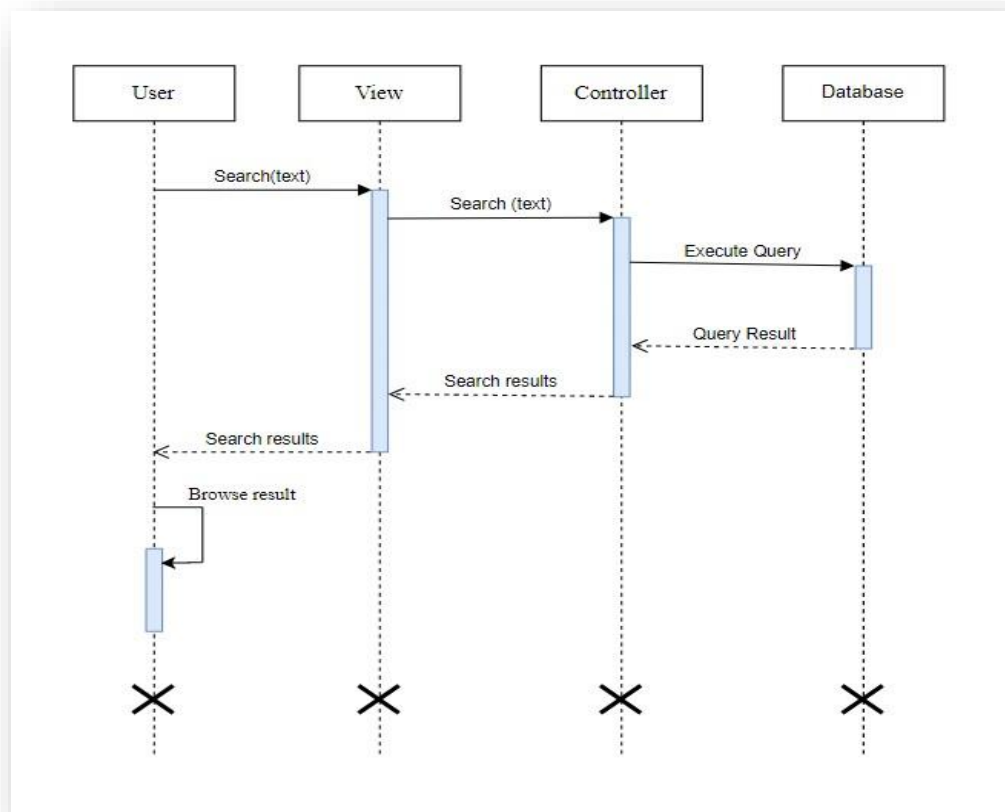
4.2.1 Use Case Diagram



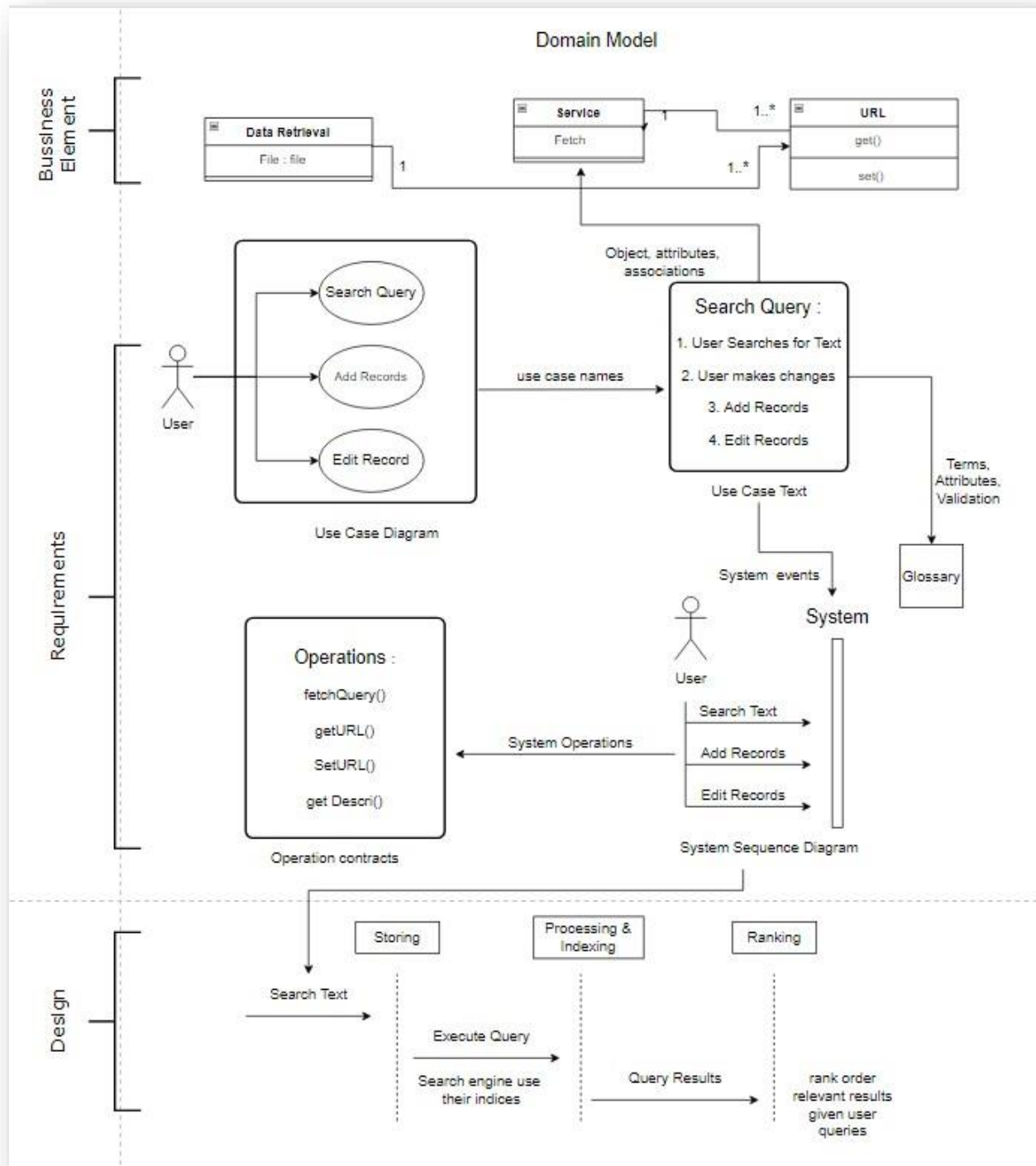
4.2.2 Class Diagram



4.2.3 Sequence Diagram

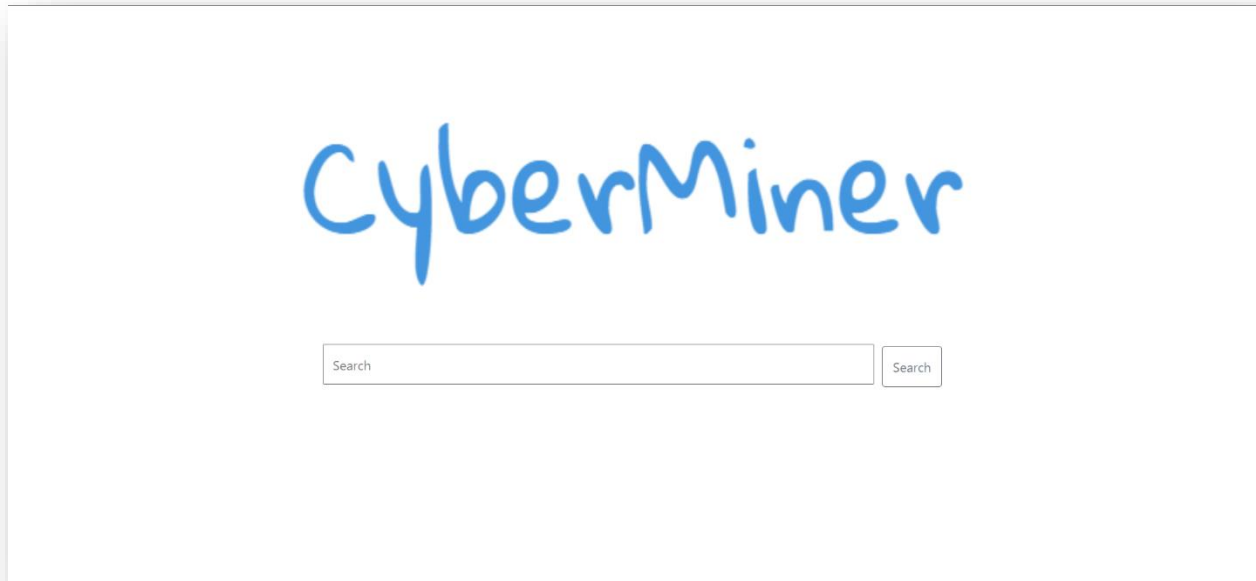


4.2.4 Road Map Diagram

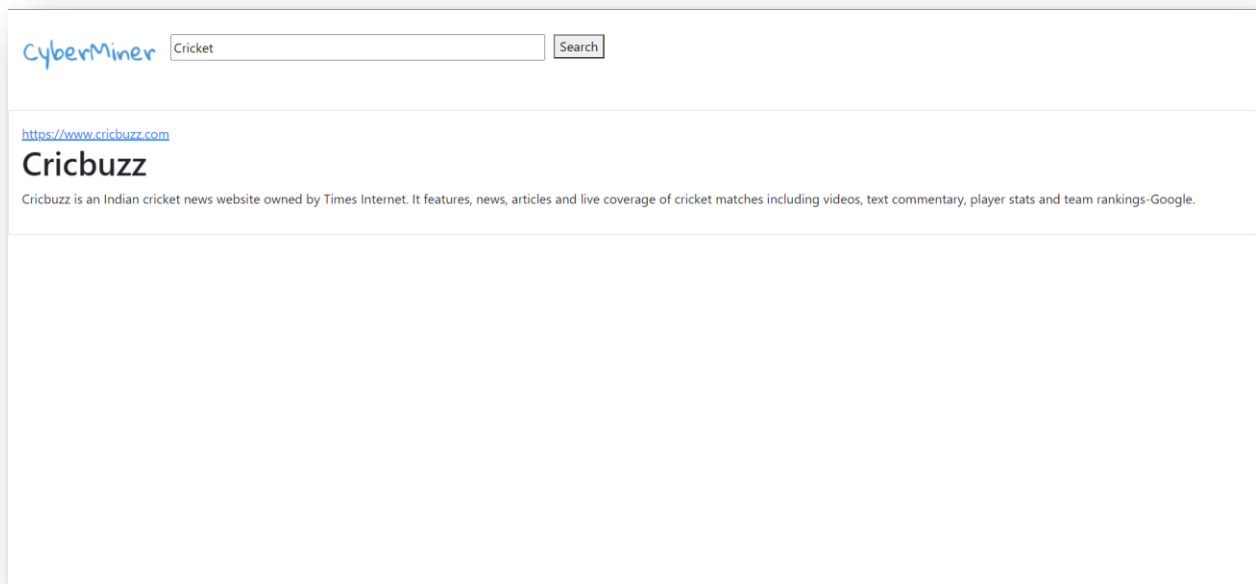


4.2.5 User Interface

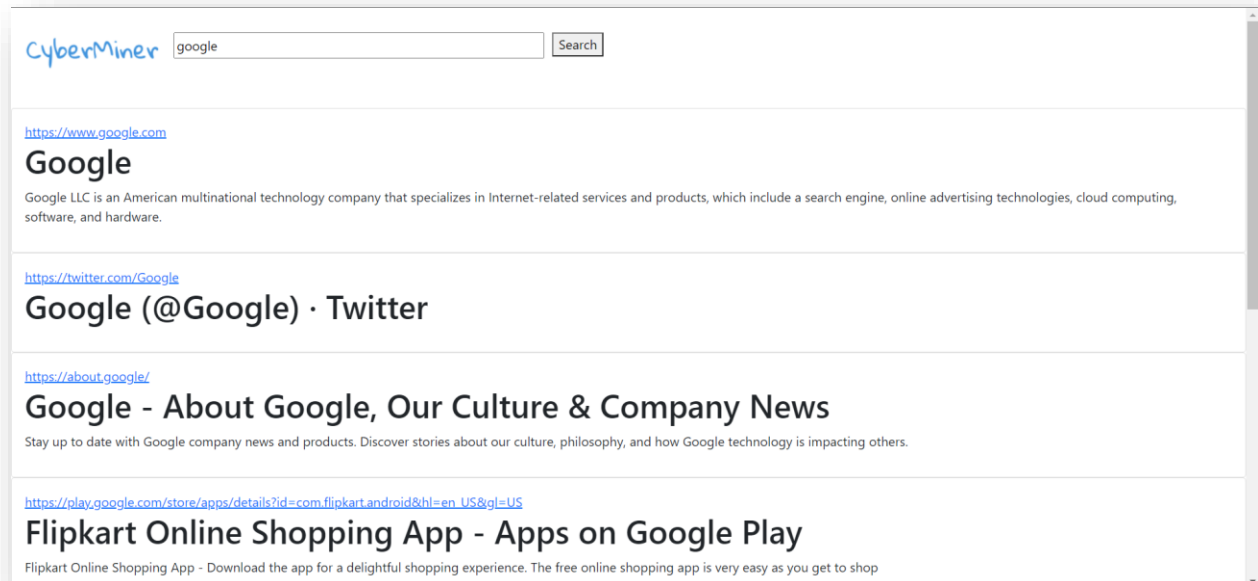
Home Page



Search based on description



Search View



The screenshot shows a web browser window with the 'CyberMiner' logo in the top left. The search bar contains the text 'google' and a 'Search' button is to its right. Below the search bar, there are four search results listed vertically, each with a URL, a title, and a brief description.

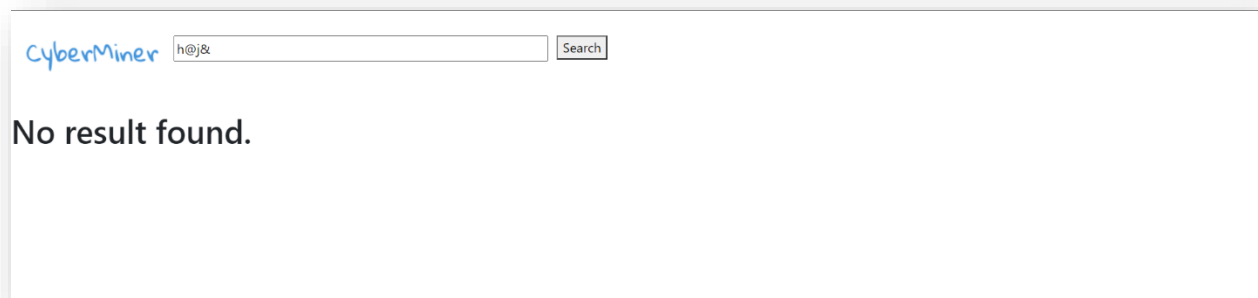
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Google
Google LLC is an American multinational technology company that specializes in Internet-related services and products, which include a search engine, online advertising technologies, cloud computing, software, and hardware.

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Stay up to date with Google company news and products. Discover stories about our culture, philosophy, and how Google technology is impacting others.

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Invalid Query



The screenshot shows a web browser window with the 'CyberMiner' logo in the top left. The search bar contains the text 'h@j&' and a 'Search' button is to its right. Below the search bar, the text 'No result found.' is displayed.

No result found.

4.3 Website Link

<https://personal.utdallas.edu/~Rainam.Shah/>

4.4 Demo Link:

<https://drive.google.com/file/d/1JtXrV2tkj4g1QJeFvER-APf8nuolmC3p/view?usp=sharing>

5. Work Element, Schedule and Budget

5.1 Work Breakdown Structure

Member	Work
Rainam Shah Dhyani Gandhi Abhijeetsinh Vaghela	All the three members have worked together in developing the user interface.
Chenyue Li	She has handled the integration of front-end code to the back-end code.
Poojitha Bijjam Akash Karuturi Rohith Jallipalli Yasaswi Tiyyagura Pavan Pabbisetty	Akash, Rohit, and Pavan have added URL data to the file and worked for SQL database creation. Poojitha & Yasaswi have implemented code for Flask back-end and currently working on connectivity to database.
Dharav Bhatt Rutvik Avaiya Yash Majmudar Yang Yang	Dharav has prepared this report and managed the UML diagram work. Rutvik, Yash and Yang have made the UML diagrams.