Brainly

ON

Submitted in partial fulfillment of the requirements
of the degree of

Bachelor of Engineering

(Information Technology)

By

Mohit Patil -Roll No (36)

Under the guidance of

Mrs. Dipti Karani

Department of Information Technology

VIVEKANAND EDUCATION SOCIETY'S INSTITUTE OF TECHNOLOGY, Chembur, Mumbai 400074

(An Autonomous Institute, Affiliated to University of Mumbai)

Vivekanand Education Society's
Institute of Technology
(Autonomous Institute Affiliated to University of Mumbai, Approved by AICTE & Recognised by Govt. of Maharashtra)
NAAC accredited with 'A' grade

April 2024

Certificate

This is to certify that project entitled

"Brainly"

Group Members Names

Mr. Mohit Patil (Roll No. 36)

In fulfillment of degree of BE. (Sem. VI) in Information Technology for Project is approved.

Prof. Mrs. Dipti Karani
Project Mentor

External Examiner

Dr.(Mrs.)Shalu Chopra
H.O.D

Dr.(Mrs.)J.M.Nair
Principal

Date: / 4/2025
Place: VESIT, Chembur

College Seal

Declaration

We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea or data or fact or source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

- - - - - - - - - - -

(Signature)

Mohit Patil -Roll No (36)

Abstract

Brainly is a full-stack web-based Resource Management System that allows users to efficiently organize educational or informational content under topics and subtopics. The application enables secure authentication and intuitive interfaces for CRUD operations, resource uploads, and quick access via search. Designed using Flask for the backend and React Typescript with Tailwind CSS for the frontend, it ensures a responsive and modern experience. Cloudinary integration enables file management, while JWT- based login ensures user privacy and access control.

Contents

ACKNOWLEDGEMENT

The project report on ”Brainly” is the outcome of the guidance, moral support and devotion bestowed on our group throughout our work. For this we acknowledge and express our profound sense of gratitude to everybody who has been the source of inspiration throughout project preparation. First and foremost we offer our sincere phrases of thanks and innate humility to HOD Dr (Mrs.) Shalu Chopra, Deputy HOD Dr. Manoj Sabnis, Project guide Mrs. Dipti Karani for providing the valuable inputs and the consistent guidance and support provided by them. We can say in words that we must at outset tender our intimacy for receipt of affectionate care to Vivekanand Education Society’s Institute of Technology for providing such a stimulating atmosphere and conducive work environment

Chapter 1

Introduction

1.1. Introduction

Brainly is a second brain app designed to help you capture and organize digital content effortlessly. Whether it's tweets, YouTube videos, notes, or checklists—everything stays in one place. It's your personal knowledge hub, always accessible, always organized.

1.2. Objectives

- Allow secure user authentication using JWT.
- Enable creation, editing, and deletion of notes, tweets, video summaries, and checklists.
- Support saving external content like tweets and YouTube videos with summarization.
- Provide search and smart tagging functionality for fast content retrieval.
- Maintain a dynamic, responsive, and intuitive user interface across all devices.

1.3. Motivation

In today's fast-paced digital world, important thoughts, links, and learnings are often scattered across platforms like Twitter, YouTube, and personal notebooks. Manually organizing this information is inefficient. **Brainly** solves this by offering a centralized second brain where users can effortlessly capture, structure, and access their digital content—empowering thinkers, learners, and creators to stay focused and organized.

1.4. Scope of the Work

The system provides authenticated user access, dynamic note and content management, and integration with external APIs such as Twitter and YouTube for content capture. Built with React on the frontend and Flask/Node.js backend, it supports rich media content and real-time UI updates. Brainly also enables tagging, smart filtering, and responsive design for an optimized user experience.

1.5. Feasibility Study

Brainly is technically and operationally feasible using widely adopted open-source technologies such as React, Flask/Node.js, MongoDB/Firebase, and external APIs. The app is scalable to handle a growing volume of user data and can integrate future AI features for smarter note categorization and summarization. Its modular design allows for easy updates and feature expansion over time.

Chapter 2

Literature Survey

2.1. Introduction

In today's fast-paced digital world, individuals consume vast amounts of scattered content—from tweets and YouTube videos to notes and personal to-do lists. Existing productivity or resource tools often lack integration across these content types, leading to fragmentation and loss of important insights. ***Brainly*** *addresses this gap by offering a unified platform where users can capture, organize, and retrieve their digital information with ease. It introduces smart categorization, cross-format integration, and editable structures to serve as a dynamic second brain tailored to each user's needs.*

2.2. Review of Literature Survey

1. **DSmart Personal Knowledge Management Systems: A Survey**
   Authors: Li, X., et al. (2022)
   Objective: To analyze existing tools for personal knowledge organization and identify gaps in cognitive workload and information retrieval**.**
   Work Done: The study categorized personal knowledge systems (PKMs) into passive and active memory augmentation models**.**
   Conclusion: PKMs must evolve to incorporate dynamic media integration and semantic recall capabilities**—**highlighting the need for systems like Brainly.

2. **Enhancing Productivity Using Integrated Digital Capture Tools**
   Authors: Thompson, M. & Riley, K. (2021)
   Objective: To study how digital journaling and capture tools affect user productivity**.**
   Work Done: Compared performance across tools that allowed video, text, and social media content input**.**
   Conclusion: Integration across content types improves memory retention and decision-making, a concept aligned with Brainly's core design**.**

3. **Automatic Summarization of YouTube Content for Educational Use**
   Author: Wang, Y. (2023)
   Objective: To automate YouTube content summarization for faster consumption**.**
   Work Done: Used NLP models to convert long-form videos into bite-sized textual summaries**.**
   Conclusion: Summarization tools significantly improved user comprehension and engagement, justifying Brainly's use of similar functionality.

4. **Study of Note-**Taking Applications and User Retention
   Authors: Singh, A., & Patel, R. (2020)
   Objective: Analyze retention levels in users of note-taking apps.
   Work Done: Surveyed over 1,000 users on usability, organization, and recall.
   Conclusion: Dynamic and editable notes significantly improve long-term user engagement, aligning with Brainly's interactive note module.

5. **The Role of Second-Brain Systems in Modern Productivity**
   Author: Jason Lau (2024)
   Objective: To explore the concept of "second brains" as digital extensions of human cognition.
   Work Done: Proposed a framework for how users interact with structured digital repositories of knowledge.
   Conclusion: Second-brain systems are essential in managing overload and enhancing personal productivity—validating Brainly's mission.

Chapter 3

Design and Implementation

3.1. Introduction

This chapter outlines the implementation strategy and technical decisions behind Brainly. It covers requirement gathering, key features, system feasibility, and performance considerations. The analysis reflects how Brainly transforms fragmented digital content into a structured, intelligent workspace, improving user productivity and information retention. Observations from early testing also suggest directions for future enhancement.

3.2. Requirement Gathering

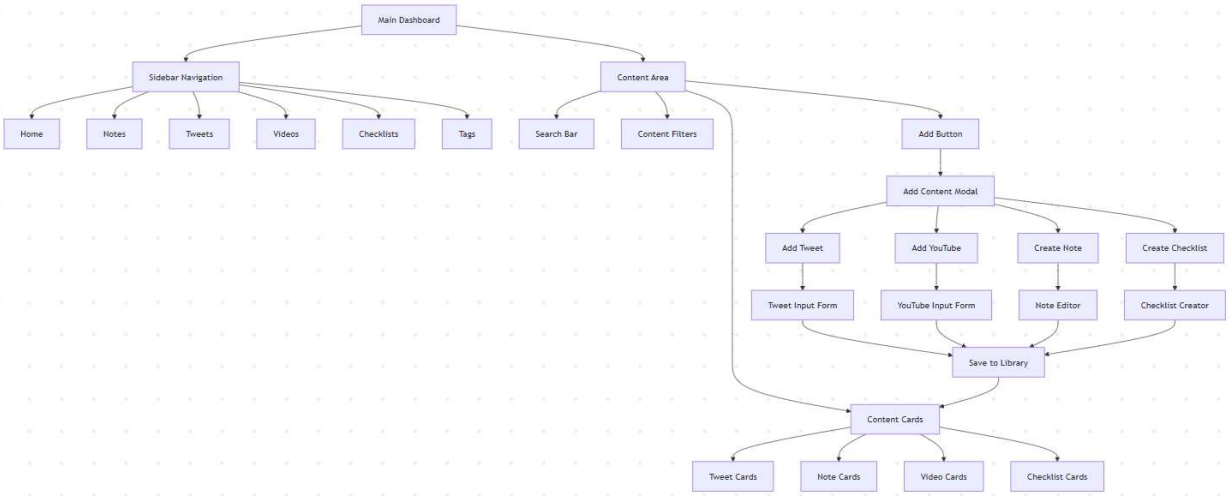
Functional Requirements:

- User Registration and JWT-based Authentication
- Save and display Tweets and YouTube videos with auto-summaries
- Dynamic Notes CRUD (Create, Read, Update, Delete) functionality
- Checklist/Todo creation with completion tracking
- Search and filter content using tags or keywords
- Dark Mode support for enhanced user experience

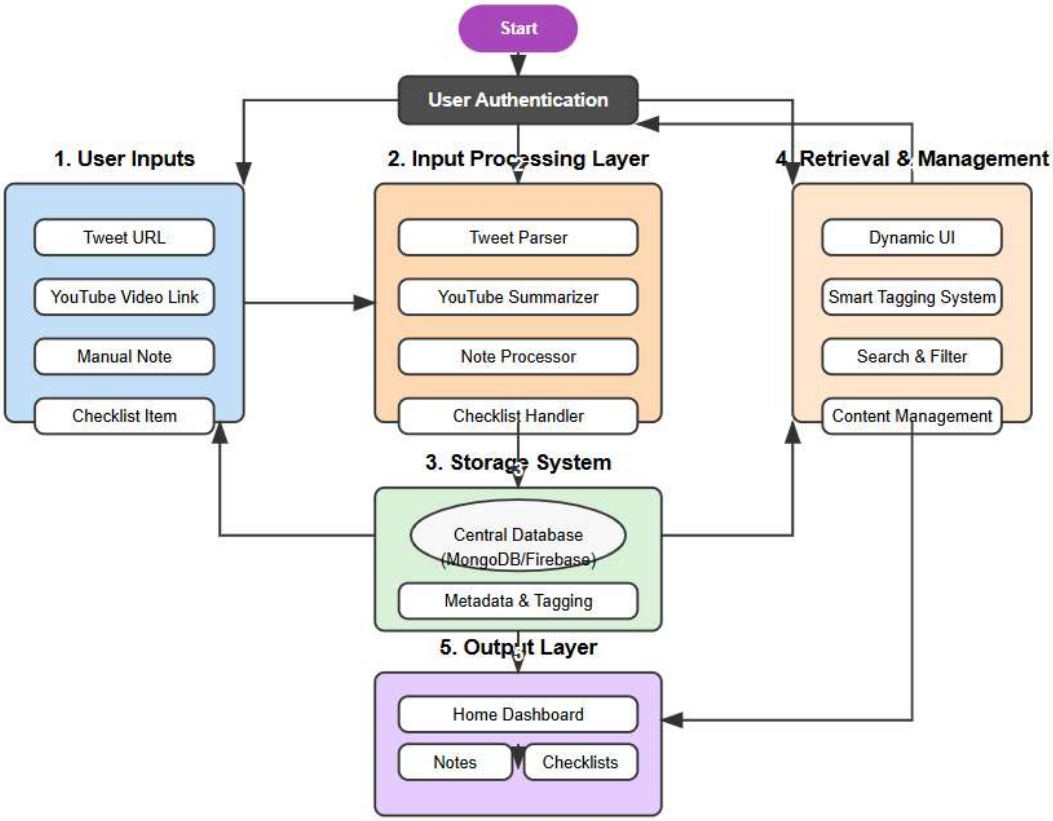
Performance Requirements:

- Real-time updates and content rendering
- Cross-platform responsive UI with adaptive layouts
- Optimized performance for embedded media (tweets, videos)
- Fast content load time, even with large datasets

3.3. Proposed Design



3.4. Proposed System



3.5. Software Requirements

🔧 Tech Stack

Category	Technologies
Frontend	React, Vite, Tailwind CSS, Axios
Backend	Flask, Flask-CORS, Flask-PyMongo, Flask-Bcrypt, Flask-JWT-Extended
Database	MongoDB
Tools	Cloudinary (file uploads), dotenv (env management), xmgmt) JWT (authentication)

⚙️ System Requirements

Component	Requirements
Operating System	Windows, macOS or Linux
Processor	1 GHz or faster
Memory	2 GB RAM

Chapter 4

Results and Discussion

4.1 Dashboard Page

The Dashboard serves as the central hub, displaying a curated mix of saved tweets, summarized YouTube videos, notes, and checklists. It provides a quick overview of all content types, helping users stay organized and focused. Dark mode enhances the visual experience for long usage sessions.

4.2 YouTube Page

This page is dedicated to managing saved YouTube videos. Users can paste video links, and the system generates smart summaries with titles and tags. All saved videos are displayed in an organized layout with options to edit or delete entries.

4.3 Tweet Page

Users can save and view tweets by pasting tweet URLs. The app extracts the tweet content and stores it along with relevant metadata and user-defined tags. The Tweet Page allows efficient filtering, search, and content organization for later reference or inspiration.

4.4 Notes Page

This section provides a dynamic editor for creating, updating, and deleting notes. Notes can be tagged, categorized, and filtered to simplify information retrieval. It supports both long-form content and quick thoughts, acting as the core of the second brain experience.

4.5 Checklist Page

The Checklist Page helps users manage tasks and to-dos. Each list is editable, supports progress tracking, and can be organized under different categories or time frames. It's ideal for productivity, reminders, and habit tracking.

Chapter 5

Conclusion

5.1. Conclusion

Brainly redefines digital content management by acting as a second brain—efficiently capturing, organizing, and retrieving scattered information like tweets, YouTube videos, notes, and checklists. With dynamic editing, smart tagging, and a responsive UI, it enhances personal productivity and focus. Secure JWT-based authentication and modern web technologies ensure reliability, performance, and scalability for long-term usage.

5.2. Future Scope

- Integrate AI for summarizing long notes and video content
- Implement role-based access for collaborative workspaces
- Enable AI-powered auto-tagging and content recommendations
- Add calendar/task integration for time-based reminders
- Generate knowledge usage analytics and insights

Bibliography

1. Xinlei Yuan. *Designing the Education Resource Management System Using Apriori Algorithm*, Mobile Information Systems, 2022. https://onlinelibrary.wiley.com/doi/10.1155/2022/8307261
2. Qin Xu, Zhongli Zhou, Dexiang Yang. *Educational Resource Management System Based on JSP Technology*, Educational Sciences: Theory & Practice, 2018. https://jestp.com/menuscript/index.php/estp/article/view/152
3. Rahayu Widiya Sari, Arista Purba, Saharni Nasution, Lilik Hidayat Pulungan. *Educational Resource Management System Design for Inclusive Education*, EDUCTUM Journal Research, 2024. https://www.researchgate.net/publication/383253838_Educational_Resource_Management_System_Design_for_Inclusive_Education
4. Vijay Kumar Verma, Aravind R Nair. *Implementation of Electronic Resource Management System: A Case Study of Central Library, IIT Delhi*, SRELS Journal of Information Management, 2023. https://www.researchgate.net/publication/372147723_Implementation_of_Electronic_Resource_Management_System_A_case_study_of_Central_Library_IIT_Delhi
5. Zhu. *Digital Teaching Resource Management System for Higher Education*, Engineering Reports, 2024. https://onlinelibrary.wiley.com/doi/full/10.1002/eng2.1300