

Diary.com

Himashveta Kumar | Claire Brownell | Sierra Irving | Aayush Sasane

Chapter 1: Team Vision/Design

Introduction:

The goal of this project is to develop and deploy a cloud-based diary-writing web platform application. The app will allow users to write personal entries to themselves or to share their thoughts with the public via their profile. Entries can be locked with passwords or encryption so that no one but the user can access what they write. Users can also share access with other people via email for collaborative entries.

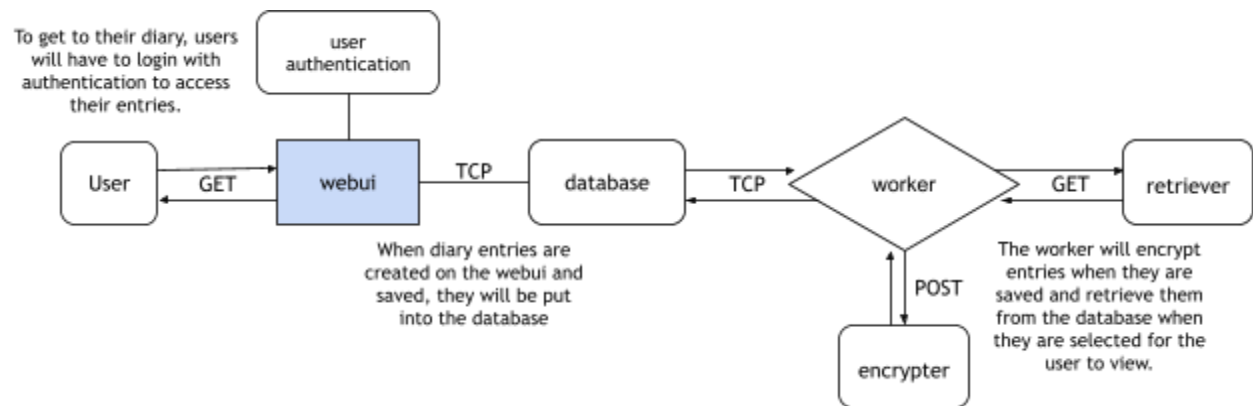
Features:

- **Personalized Profile UI:** Users can select a theme for a simple interface that allows them to rename/delete/share their entries in a Google style but with an emphasis on privacy for intimate diary entries.
- **Writing UI:** Opening entries transfer to a different editing UI for writing entries. Entries can be shared with other users via email so that they can also collaborate. Entries are not strictly limited to diary entries, as users can also use the interface to write poems, fiction, etc.
- **User-based Geo-location Sharing:** The website will allow users to use geolocation and profile matches to show other profiles that may have public entries of writing. In the future, users should be able to give comments on other users' public entries and there can be a liking system for popular entries in the local area.
- **Privacy:** The website emphasizes the importance of user privacy for intimate entries. Locked or private entries cannot be accessed by anyone except the user. Public entries can be seen by others and if any concerning content should arise, users may report the entry-writer for content violation.

Conclusion:

Diary.com (working title) isn't just another diary-writing platform; it's a sanctuary for personal expression and connection. Through our intuitive interface and emphasis on privacy, users can delve into their innermost thoughts without fear. It's more than just a place to jot down daily musings; it's a community where writers, poets, and storytellers can come together to share their creativity and experiences. With features like personalized profiles, collaborative entries, and geolocation sharing, Diary.com offers a unique blend of solitude and camaraderie. So whether you're penning a private reflection or sharing your work with the world, Diary.com is here to support and inspire you on your writing journey.

Design of the Infrastructure:



Chapter 2: Team Design Implementation

Personalized Profile UI:

In our proposed software architecture, the frontend interface will utilize either HTML for static page structure, or JavaScript with frameworks such as React.js or Vue.js. These frameworks enable the design of responsive user interfaces that enhance user experience by making the diary application more interactive. For the server side, Node.js is chosen for backend development. This can help ensure efficient handling of simultaneous connections. For the database, either MongoDB or PostgreSQL will be used. MongoDB is useful for handling large volumes of unstructured data which will give high performance and easy scalability. PostgreSQL, is an efficient, open-source object-relational database system known for its reliability and performance when managing complex data types and relationships. To secure user data and ensure that only authorized users can access the application, Lightweight Directory Access Protocol (LDAP) is integrated for user authentication and authorization. This protocol allows the management of user credentials and permissions, providing a secure and efficient way to manage access to the application.

Writing UI:

For our development for writing the user interface, the application focuses on delivering an adequate user experience through different features, rich text editing, real time communication between the collaborators, and email notifications to inform users of any updates. Libraries such as Draft.js or Quill.js, which are well known for their comprehensive editing tools that allow users to format their text easily. This will make the content more engaging and visually appealing. To incorporate real-time collaboration, Socket.io is integrated. This enables instant communication between the collaborators. This ensures that all participants can see live updates, edits, and comments. This will enhance the collaborative experience by allowing team members to work together, regardless of their physical location. Our platform uses Nodemailer for email integration. This is a powerful module for Node.js applications that allows for sending email notifications and sharing entries directly from the platform. This feature will help streamline the process of distributing content as well as keeping collaborators informed about updates or changes.

Entry Storage:

To design the entry storage and geolocation attributes, the system will use either MongoDB or PostgreSQL as its database to provide strong and flexible storage for user entries along with their associated metadata. This approach allows for the optimization of data management based on the specific needs of the application. To enhance user entries with geolocation features, the system integrates with either the Google Maps API or Mapbox API, both of which offer efficient tools for adding maps, location search, and other geospatial functionalities to the application. This will add to the user experience with contextual, location-based information. Additionally, the system can either implement custom algorithms or leverage libraries such as GeoPy for geo-location matching, ensuring accurate matching of user entries

with geographical data. This approach allows the application to be functional but also provide users with a more personalized and context-aware experience.

Privacy:

Our project aims to develop and deploy a cloud-based application that prioritizes user privacy and security. Utilizing encryption technology, specifically Crypto.js, we will ensure that sensitive data, such as private entries, remains protected from unauthorized access. This encryption capability empowers users to lock their entries with passwords or encryption, granting exclusive access to their personal thoughts and reflections.

Moreover, our platform will feature a robust reporting system, backed by a database (MySQL), to uphold community standards and safety. Users can rest assured that their intimate entries are safeguarded, as locked or private entries cannot be accessed by anyone except the user. For those opting to share their thoughts publicly, a reporting mechanism will be in place to address any concerning content. This feature underscores our commitment to fostering a secure and respectful environment, where users can freely express themselves without compromising their privacy or encountering inappropriate content. Additionally, users will have the ability to share access with trusted individuals via email for collaborative entries, further enhancing the versatility and collaborative potential of our diary-writing platform.

Deployment:

Through this application, users will have the freedom to compose personal entries, intended solely for themselves, or opt to share their thoughts with the public via their profile. Emphasizing the users privacy and security.

Furthermore, to enhance collaboration and shared experiences, users can extend access to trusted individuals through email invitations, enabling collaborative entries. Leveraging technology, our deployment strategy incorporates Docker for containerization, streamlining the deployment process and promoting consistency across different environments. Additionally, Kubernetes will serve as the backbone for container orchestration, enabling efficient management and scalability of our application's infrastructure.

By integrating these software solutions into our project, we aim to deliver a reliable diary platform that empowers users to document their thoughts securely and engage with others in a collaborative and meaningful manner.

AAYUSH SASANE

610-412-8763
19asasane@gmail.com

Chester Springs, PA
<https://www.linkedin.com/in/aayush-sasane/>

EDUCATION

West Chester University

Bachelor of Science in Computer Science, Minor in Supply Chain Management

West Chester, PA

August 2024

RELEVANT COURSEWORK

Computer Science I, II, III
Discrete Mathematics
Data Structures & Algorithms
Computer Security & Ethics

Computer Systems
Calculus I, II
Foundations of Computer Science

SKILLS

Programming Languages: Java, Haskell, C, Python, HTML, JavaScript

Cloud and DevOps Services: AWS, Azure, CI/CD, Jenkins, Docker

Methodologies: Agile, Scrum

Security Frameworks: NIST, ITIL, ISO

Tools: UML, Active Directory, Linux, ServiceNow, Git/GitHub, Microsoft Excel, PowerPoint, Word, Visio

Languages: Hindi, English, Spanish

EXPERIENCE

West Chester University of Pennsylvania

IT Help Desk Intern

West Chester, PA

December 2022 – February 2024

- Served as the first point of contact for faculty & staff technical issues
- Troubleshoot and facilitated solutions for hardware and software issues of PCs and MACs
- Performed remote troubleshooting through diagnostic techniques and pertinent questions

St. Joseph Church

Volunteering

West Chester, PA

April 2019 – June 2019

- Engage with others successfully using strong verbal and written communication skills.
- Kept faculties organized, clean, and well maintained to best meet program needs
- Associated with labor to help build front stage for the event
- Served food and drinks to customers for non-profitable fundraiser

TECHNICAL PROJECTS

Color Flipper

Software Developer

May 2021 – June 2021

- Built using HTML, CSS, JS
- Created simple color way, so it displays basic rgb colors
- Created hex color way, so it randomly generates infinite color range every click
- Maintained version control through GitHub, and leveraged Trello board to keep track of project progress

Sudoku Puzzle

Software Developer

February 2021 – March 2021

- Designed a program that takes in a two-dimensional array of 9x9 integers from 1 to 9 using Java
- Implemented methods that verifies whether the input solves a particular Sudoku puzzle
- Maintained version control through GitHub, and leveraged Trello board to keep track of project progress

Platform game on Unity

Software Developer

May 2020 – June 2020

- Built using C++
- Made a fully working third person platform game with 3 levels and a boss fight

AWARDS

Golden Ram Scholarship, 2019 - Present

Claire Brownell

123-456-7890 | claire228brownell@gmail.com | [linkedin.com/in/claire-brownell1](https://www.linkedin.com/in/claire-brownell1) | github.com/ClaireBrownell

EDUCATION

West Chester University of Pennsylvania

Bachelor of Science in Computer Science

West Chester, PA

Aug. 2020 – May 2024

Anticipated Graduation

Cumulative GPA: 3.3/4.0

May 2024

RELEVANT COURSEWORK

- CSC 241: Data Structures
- CSC 402 Software Methodology
- CSC 471: Malware Analysis
- CSC 335: Data Communications and Networking
- CSC 301/302 Computer Security
- CSC 490: Independent Study
- CSC 495: Data Science
- CSC 495: Information Visualization

INDEPENDENT RESEARCH

Undergraduate Research

November 2023 – Present

West Chester University of Pennsylvania

West Chester, PA

- * Research supervised by Dr. Cui, involves different intrusion datasets and classification models to find the most optimal approach to prevent data breach attacks.
- * Datasets used include NSL-KDD, KDDCup99, ISOT Botnet, etc.
- * Classification Models include Logistic Regression, K nearest neighbor, Gaussian Naïve Bayes, Linear SVC, Decision Trees, Random Forest, and PCA + Random Forest.
- * The research compares the true positive, true negative, false positive, and false negatives of each classification model with the given datasets as well as the detection and false alarm rates.

EXPERIENCE

Black Rocket Productions

June 2023 – August 2023

Mercer County Community College

West Windsor, NJ

- Teach children from ages 8-14 new technology skills in coding, Minecraft, ROBLOX, video editing, and game design. .
- Oversee groups of students and keep them motivated and on track to learn.
- Created demo projects to help guide the students and give them ideas on what they could make.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, Ocaml, Shell, Bash

Developer Tools: VS Code, Eclipse, Pycharm, IntelliJ, Anaconda

Technologies/Frameworks: Linux, GitHub, JUnit, WordPress

Libraries: pandas, NumPy, Matplotlib **Softwares:** MATLAB, Cisco Packet Tracer, Wireshark, SPSS, DIA

INVOLVMENT

WICS: Women in Computer Science Club

CAC: Colleges Against Cancer

Sierra Irving

484-542-7152 | sierra.irving01@gmail.com | linkedin.com/in/sierra-irving

EDUCATION

West Chester University of Pennsylvania

Bachelor of Arts in Computer Science

Minor in Women's and Gender Studies, Cyber Security Certificate

West Chester, PA

Aug. 2020 – May 2024

RELEVANT COURSEWORK

- Computer Science I, II, III
- Discrete Mathematics
- Computer Systems
- Foundations of Computer Science
- Computer Security and Ethics
- Modern Malware Analysis
- Data Structures and Algorithms
- Software Engineering
- Data Science
- Software Security

SKILLS

- Microsoft Office Suite
- Wireshark
- Cisco Packet Tracer
- Experience with Java, Haskell, Python, SQL, and C

EXPERIENCE

Software and Network Engineer Intern

Springer Capital

September 2023 – December 2023

Remote

- Managed servers, connected software, and wrote backup scripts
- Monitored several user services
- Created websites, and managed the domains

Other Experience: Event Staff

North Star Catering

Jan. 2018 – Present

Easton, PA

- Organize materials, clean facilities, and set up equipment to prepare for events
- Give guests first-rate service and support, and work to resolve all concerns to mutual satisfaction
- Speak with clients to communicate specific details

LEADERSHIP AND INVOLVEMENT

- **Student Government Association**, Technology Senator, Secretary, Vice President
- **Women in Computer Science**, President
- **A Moment of Magic**, Fundraising Chair, Vice President
- **It's On Us at West Chester University** President
- **Cyber Security Club**
- **Computer Science Club**
- **Golden Ram Society**

Himashveta Kumar

484-716-5805 | himashveta@gmail.com | www.linkedin.com/in/himashveta/ | www.github.com/Himashveta

EDUCATION

West Chester University

West Chester, PA

Accelerated B.S. in Computer Science to M.S. in Computer Science Program

Expected Grad. Date: May 2024

- Minor in White Collar Crime
- Certification in Computer Security
- Cumulative GPA: 4.0 / 4.0

Coursework

- CSC 241: Data Structures & Algorithms
- CSC 302: Computer Security
- CSC 335: Data Communications & Networks
- CSC 345: Programming Language Concepts & Paradigms
- CSC 402: Software Engineering
- CSC 471: Modern Malware Analysis
- CSC 472: Software Security
- CSC 586: System Administration & Security
- CSC 610: Independent Research

EXPERIENCE

EDGE Research

Spring 2023

West Chester, PA

- Deployed a high-performance computing infrastructure on Kubernetes via a software engineering approach
- Utilized Docker Compose, Kubernetes, LDAP, MongoDB, etc. to transfer HPC environment from Docker to Kubernetes
- Completed paper, waiting for publication

Undergraduate Independent Research

August 2023 - January 2024

West Chester, PA

- Conducted independent research involving DDoS detection using Machine Learning Algorithms under faculty advisement (Dr. Si Chen)
- Used Mininet, CloudLab, and Python Libraries to analyze network traffic for malicious denial of service intent

CERTIFICATIONS

- IBM Cybersecurity Analyst Professional Certificate on Coursera
- Certification in Computer Security (Certificate Program as part of Undergraduate Education)

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, JavaScript, HTML/CSS, Haskell

Developer Tools: Git, Docker, Google Cloud Platform, VS Code, Visual Studio, PyCharm, Eclipse

Networking Tools: Wireshark, Cisco Packet Tracer

Libraries: NumPy, Matplotlib

INVOLVEMENT

Clubs

Fall 2022 - Present

- Women in Computer Science, Member
- Cybersecurity Club, Member
- Competitive Programming Club, Member

Other Activities

- WCU Programming Contest (WCPC) Participant (Ranked 11/35) - November 3, 2023
- WCU Computer Science Robotics Camp (Completed 2 projects) - November 11, 2023

AWARDS & SCHOLARSHIPS

Honors

- College of Science and Mathematics Dean's List Recipient - Fall 2021, Spring/Fall 2022, Spring 2023
- Member, West Chester University Chapter of Upsilon Pi Epsilon

Scholarships

Academic Excellence Scholarship - 2021-2022, 2022-2023, 2023-2024