Georgia State University

CSC 4350 – Software Engineering

Spring 2023

Sprint 1

Lock In

Cindy Thai

Patrick Davis

Ulysses Adams

Weiyi Zhen

Paul Bronola

Section 1: Project Information

a. Name: LOCK IN
b. Semester: Spring 2023
c. Group Number: 2
d. Team Members: Cindy Thai, Patrick Davis, Ulysses Adams, Weiyi Zhen, Paul Bronola
e. Date of Submission: Feb 5, 2023

I. Teamwork Basics

A. Ground Rules: Norms 1 to norms 5

Work Norms

Cindy Thai
Facilitator, Database/Backend

Patrick Davis
Frontend, Tester

Ulysses Adams
Database/Backend

Weiyi Zhen
Backend

Paul Bronola
Frontend

Facilitator Norms

Cindy Thai will be the facilitator. Currently, we have chosen to not rotate this role for the sake of consistency. Her job as the facilitator is to coordinate with members of the group, keep the team on track with deadlines, and help team members if they encounter problems.

Communication Norms

Our main method of communication will be through our discord server where we plan out our meetings, plans for the project and everything related to that aspect.

Meeting Norms

Meetings will be held in person before and after classes as well as over Discord. We will also combine efforts on google docs, and through GroupMe.

Consideration Norms

We will discuss our availability for meetings on our group discord and work around everyone's schedule.

Hints for Handling Difficult Behavior

Our team is full of very competent students who are eager to contribute and make this a successful project. If any issues arise, we will discuss them as a group and come to a compromise and solution to the issue. If prolonged issues occur, we will take them to the teacher and appropriate sources to alleviate the problems.

Hints for Handling Group Problems

Communication is key to successfully handling issues within the group. We will have scheduled meetings and check off tasks as they arise and are resolved. If there are issues between members, we have several channels through which we can discuss the

problem and address it, if the problems persist we can bring them to the attention of the professor.

II. Project Topic

Our project topic from the suggested topics is the Graphical Password. In our society where 90% of people use the Internet, people are generating their own information all the time. Passwords play an important role in information security. A traditional password has at least eight digits long and even contains upper-case and lower-case letters and a special character. People have a hard time remembering their own passwords. The graphical password helps people to remember their password easily and has high-level security at the same time. Our project's budget is 5K. The entire construction period is three months. Our web application can be run and tested by the instructor. It has an interactive system built in that the system is easy to test.

Section 2: Brief Resumes

Cindy Thai

Graduating with a Bachelor's in computer science with a Certification in Data Science, Cindy began her career in tech when she took an AP Computer Science course in high school learning basic Java. After taking introductory CS courses, she shifted her focus to pursuing Data Science. Upon graduation, she will work with other former co-workers at a start-up company as a Data Scientist.

Patrick Davis

Patrick is graduating with a Bachelor's degree in Computer Science and looks to head into UI/UX development. He also has a Bachelor of Fine Art in Drawing and Painting along with a minor in graphic design. He enjoys the areas where he can combine these disparate interests. Patrick is proficient with Java, Python, HTML, CSS, among other languages. He looks to obtain an internship this spring or summer and begin his journey in UI/UX.

Ulysses Adams

Ulysses is a Junior studying computer science at Georgia State University. Ulysses is proficient in Java, knowledgeable with Python, HTML, CSS and is looking to further solidify his skills and eventually become a Full-Stack engineer after graduating. He aims to get more experience in the field through an internship over Summer 2023 and upon graduating, begin his journey as an engineer in the field.

Weiyi Zhen

He strives to be a good software engineer who is graduating with a Bachelor's degree in Computer Science. Weiyi is good at Java, HTML and CSS and learning database system programming. He has used Android Studio for several projects. Near graduation, he will look for jobs in Android application development or database development to start another stage of life.

Paul Bronola

Paul is an aspiring programmer at Georgia State University. He has experience in HTML, CSS, and Java. With a pursuit to get a Computer Science degree at GSU, he plans to eventually work for one of the companies at FAANG. For this to occur, he will need relevant work experience, gain strong technical skills, and be proficient in many more programming languages, which he hopes to all gain while being a student at GSU.

Section 3: Scheduling and Planning Table for A1

Assignee Name	Email	Task	Duration (Hours)	Dependency	Due Date	Evaluation
Cindy Thai	cindymdthai@ gmail.com	Section 3	3	None	02/04/23	100%
Patrick Davis	patrickdavisart@ gmail.com	Contributed to Section 1, 2, and 4	3	None	02/04/23	100%
Ulysses Adams	ulyssiesadams@ gmail.com	Section 1	3	None	02/05/23	100%
Weiyi Zhen	weiyi0111@ gmail.com	Section 1	3	None	02/04/23	100%
Paul Bronola	paulbronola@ gmail.com	Section 4	3	None	02/05/23	100%

Section 4: Problem Statement

What is your product, on a high level?

We are creating a webpage that will provide a graphical password interface to allow for more secure access to the users' information.

Whom is it for?

This web application is for businesses who want a more secure alternative to text-based password. It is aimed at providing a secure, user-friendly method of authentication for employees, partners, and other stakeholders who need to access sensitive business information securely.

What problem does it solve?

This application would solve the need of a more secure password authentication method that protects itself from intruders that traditional text-based passwords would suffer from.

What alternatives are available?

On top of having a graphical password, additional security measures can be implemented alongside our project to increase its security. This includes email OTP, SMS OTP, two-factor authentication, PIN authentication, keystroke authentication and possibly biometric

authentication.

Why is this project compelling and worth developing?

This project is worth developing because it provides a range of benefits for businesses, including improved security and having a unique user-friendly authentication system. This technology can be employed across a wide range of businesses thus making the product versatile and appealing to many businesses.

Describe the top-level objectives, differentiators, target customers, and scope of your product.

We hope to create a well-constructed website that will provide a secure log in with a graphical interface. We will provide this product to businesses which need to make sure the employees are safely accessing their profiles and workflows. Possible clients would include hospitals and financial institutions. The project is projected to take three months and cost an estimated 5 thousand dollars. We will continually test through the process to make sure the components are in working order. We will use a hybrid method of testing each other and also letting a closed network use the site before releasing it out to the public. We will gather data on the performance all along the way and use it to improve the site and avoid any gaps that may occur in the process.

What are the competitors and what is novel in your approach?

Make it clear that the system can be built, making good use of the available resources and technology. There are many competitors in the field, including authID and 1password. Our site will allow users to securely login to their work accounts with our tailor-made setup training and affordable rates of upkeep.

What is interesting about this project from a technical point of view?

This project provides several challenges to our team. We must make a unique design to set us apart from the other companies. We must establish a database of users and create the site's visual interface to create the graphical password. There must be encryption for user's safety and there must be a certain amount of maintenance to ensure the site remains useful for clients. None of us have done this type of project but we all bring certain talents that should allow for us to create a successful site.

Do you have a client login and an admin login?

Client login will be accessible for the general user. There can be an administrator function generated on a client-by-client basis if they so choose. If someone is locked out, they will be prompted to recover their access from their provided email/phone information.

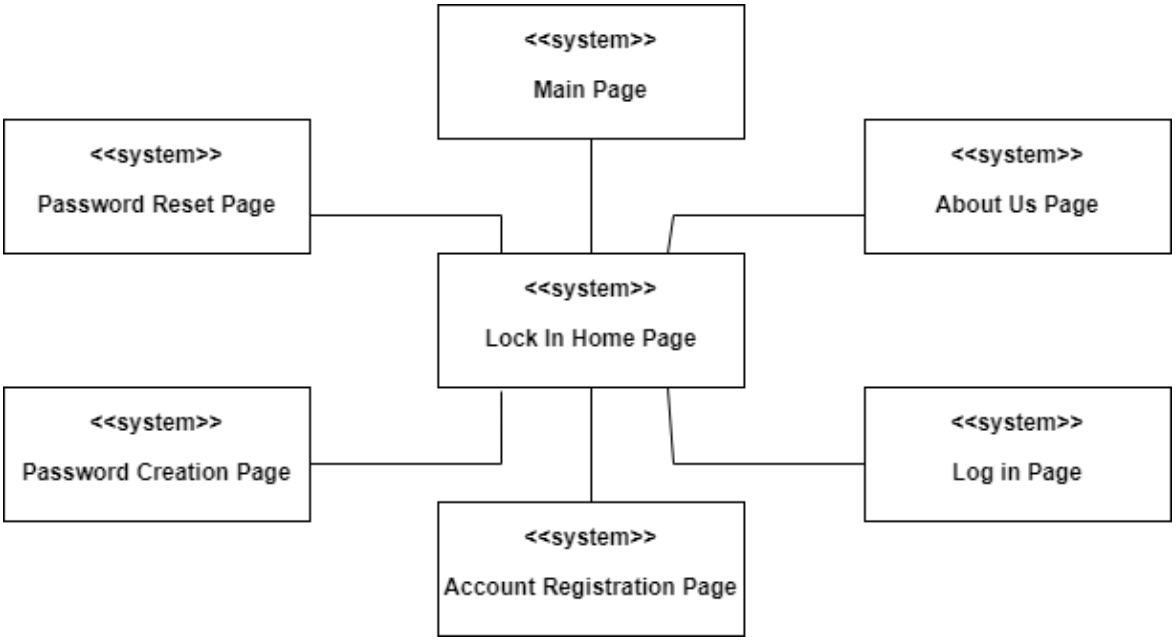
What are the advantages of graphical password over traditional password?

The graphical password is easy to remember since the human brain can more easily store images than text. The dynamic images can improve the security level to stop criminals from the hackers. The graphical password input made by clicking the image, can prevent hackers from stealing password by reading keyboard commands. This also allows for an expanded password space allowing for more complex password types and prevents nefarious actors

from simply guessing your password from possibly stolen identifying information.

Section 5: System Requirements (Context Diagram)

First, the user will begin at a starting menu. From here, the user will be redirected to our home page where they will have three options: *register* page for creating an account by entering an email username and create a password, *login* page for returning users, and an *About Us* page with more information about our company and product. For the *register* page, users will be prompted to enter their name, email, and create a text password, a color base password, and finally, an image password. Once a password is created and meets the requirements, character length, and acceptable password types, their password gets stored onto a database which will deem their account creation as successful. For the *login* page, users will be prompted to input a text password which checks the password for accuracy. If it is input incorrectly, it will revert back to the previous page. Similarly, a user will then input a color base password and an image password. Once these security checks have been accomplished, the user will see the main page which will then complete the system process.



Flow chart of graphical password authentication system