

Team Name

Hopefully Unhackable

Team Members

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Our Vision

Our team will develop a web forum using various cybersecurity tactics that will allow users to communicate comfortably in a secure environment.

What problem the project is solving (what is innovation, the science, and new core technical advance)?

Several websites nowadays such as Ashley Madison, Wells Fargo, and MasterCard are being hacked and gigabytes, sometimes even terabytes of data, are being stolen. Our project is to design a secure web forum with three iterative spirals. Our goal is to prevent malicious activity such as an attacker trying to steal information or data from the forum. We will test the forum by trying to attack our own security in hopes of finding as many bugs as possible along the way. We want to build a forum that users can rely on with the utmost confidential information.

Why is the problem important?

In modern society, important personal data is stored digitally. This information is vital to certain people and could easily cause devastating loss to those people if the information finds itself in the wrong hands. Cyber Security affects militaries, banks, hospitals, schools, retail stores, cities, homes, transportation services, and even water sanitation. Since it is a global problem, there needs to be very safe and secure ways to make sure that this data is not stolen. Cybercrimes are constantly evolving, so cybersecurity also needs to evolve which means the methodology used to secure data will always change and the person securing the data will have to adapt. With the combination of more important data being put on the web and attackers adapting, society is put in a position where they need more people securing online data.

How is the problem solved today?

Using more secure protocols such as HTTPS or Hyper Text Transfer Protocol Secure protects websites from hackers from stealing passwords and other sensitive information.

Companies often hire hackers to do penetration testing which gives the company a understanding of what vulnerabilities are currently in the system and how to make sure that those weak points are fixed.

Predict various types of cyber attacks

Using most up-to-date software

Project Outcome

Initial milestones

- Allow new unregistered users to register as new users and will keep track of the user's full name, username, and password.
- The user's information will be stored in a secure way and the user should be able to log in.
- Registered users should be able to add entries and files to the application's database.
- Registered users should also be able to modify or delete any files in the database.
- Attempt to secure the web application so that the most common cyber attacks will be ineffective.
- Test the web application for any particular weaknesses.

Specification

- Meet with mentors
- Daily scrum
- Code repository

Prototyping

Basic web forum initially without many security features in place. Then add security measures to protect from known attacks.

Design/Implementation

- Create a web forum
- Secure web forum
 - Implement secure features to prevent malicious activity
- Penetration Testing/code audit

Deliverables

- Demo video that demonstrates that the web application meets all requirements
- Source code of the web application
- Write-up that explains the key processes of the application, and potential security flaws
- Code audit and penetration test report

How do you plan to articulate and design a solution?

Implementation platform/Technologies

Java backend

HTML/CSS

Javascript

AJAX

(JUnit? for unit tests. Slower, but helps catch bugs)

Overview the process model you will employ to achieve the milestones (spirals)

AGILE/SCRUM

In order to perform in an efficient manner, our team will participate in daily scrum meetings. We will monitor our progress with Trello. We will contribute code and utilize GitHub. We will hold each other accountable.