

Hacknet, Real-Life Hacking, and You



Progress Report #2

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ITC499 - Web Systems





Project Summary

- This project consists of simulations of the hacking simulator Hacknet. The user will “hack” into a fake wiretapping server, and then defend that same server against a foreign intrusion. Once each game is completed, a short video or other media will be shown to the user, explaining how this would happen in real life. After completing both games, a webpage called “why.html” will be shown to the user. Why.html will summarize what was learned, and will try to convince the user to become more involved in cybersecurity.
- Users have the ability to create an account to track their progress in the game. There may also be a leaderboard to track who completed the game fastest. This user data will be stored with mySQL.



Overview

- Main Component:
 - Web site with login, registration, and log out.
 - Can reset their progress or create a new account
 - Password is optional; cybersecurity for site will be ironically, slightly lax
 - Letting users compromise the site could be another learning tool



Project Scope

- Activities
 - Design Website
 - Build Website
 - Code Logic
 - Design and Build Database
- Testing
 - Register, login, and logout
 - Progress tracker



Problems and Corrections

- Lack of Knowledge
 - Need to go over old course material in regards to web design and building
- Unattractive UI
 - Need a more attractive way to present text; will study other websites' page's source
- Lack of familiarity with MySQL
 - Will have to use DDL statements to create database table
- User creation and login functionality non-functional
 - Need to debug php to find error

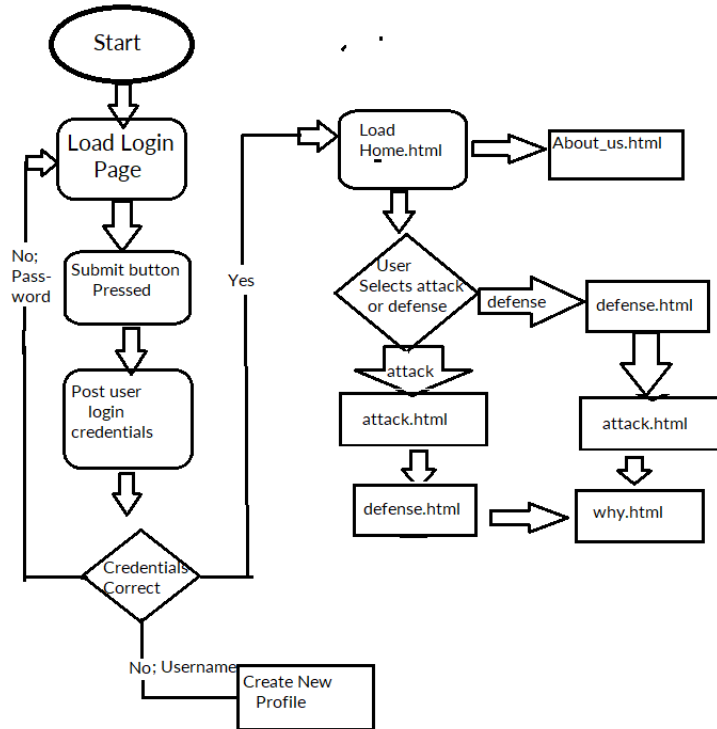


Project Milestones and Deliverables

- Prototype
 - Working website with correctly functioning games and database
- Final Report
- Final Project Presentation



Web System Design





System Requirements

- User Interface and Data Presentation Layer
 - Web site
 - Login page
 - Using HTML/CSS/PHP/JS Framework



System Requirements

- Game Logic:
 - PHP
 - JS
- Data Storage
 - MySQL Database



Major Components of the Proposed System

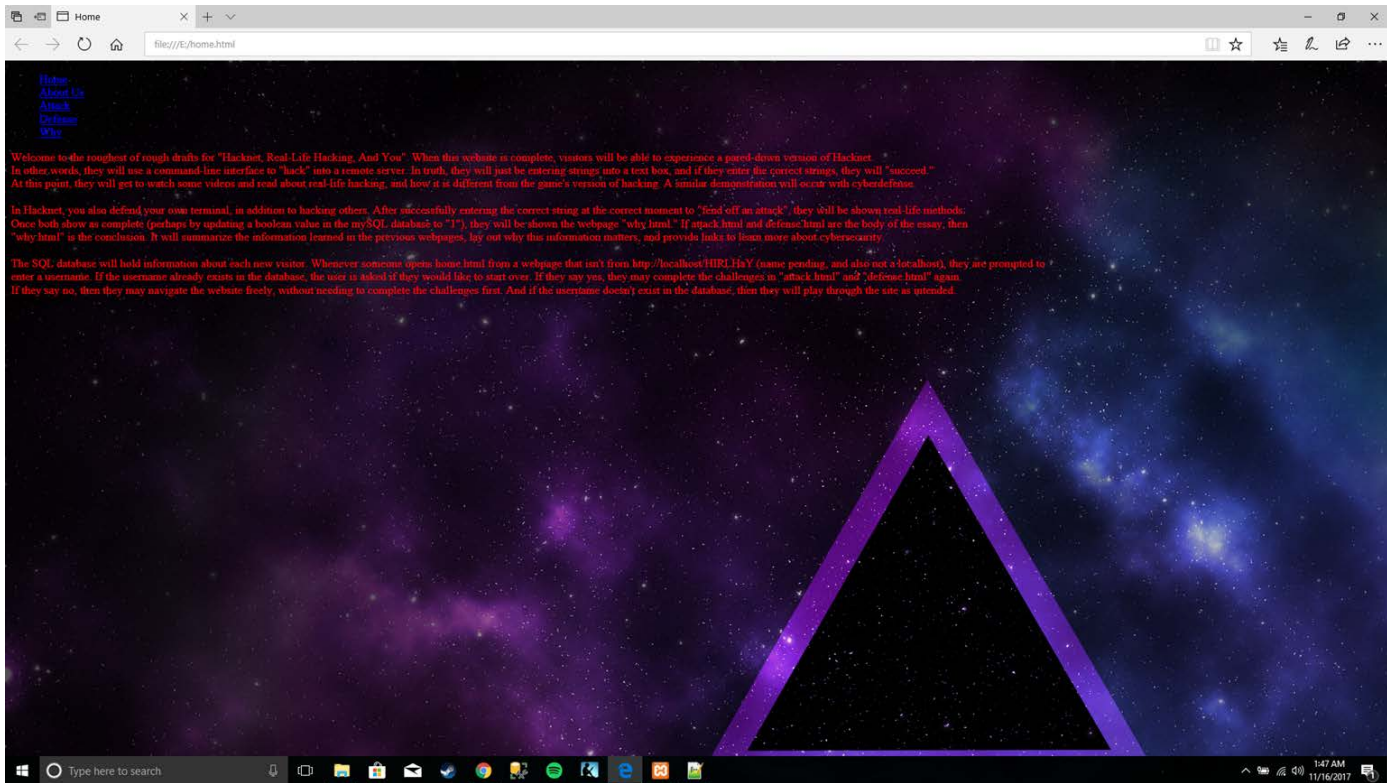
- Hardware
 - Virtual Hosted Linux Server
 - Windows Development Computer
- Software
 - Text Editors
 - Database Management GUI



Software Programming Tools

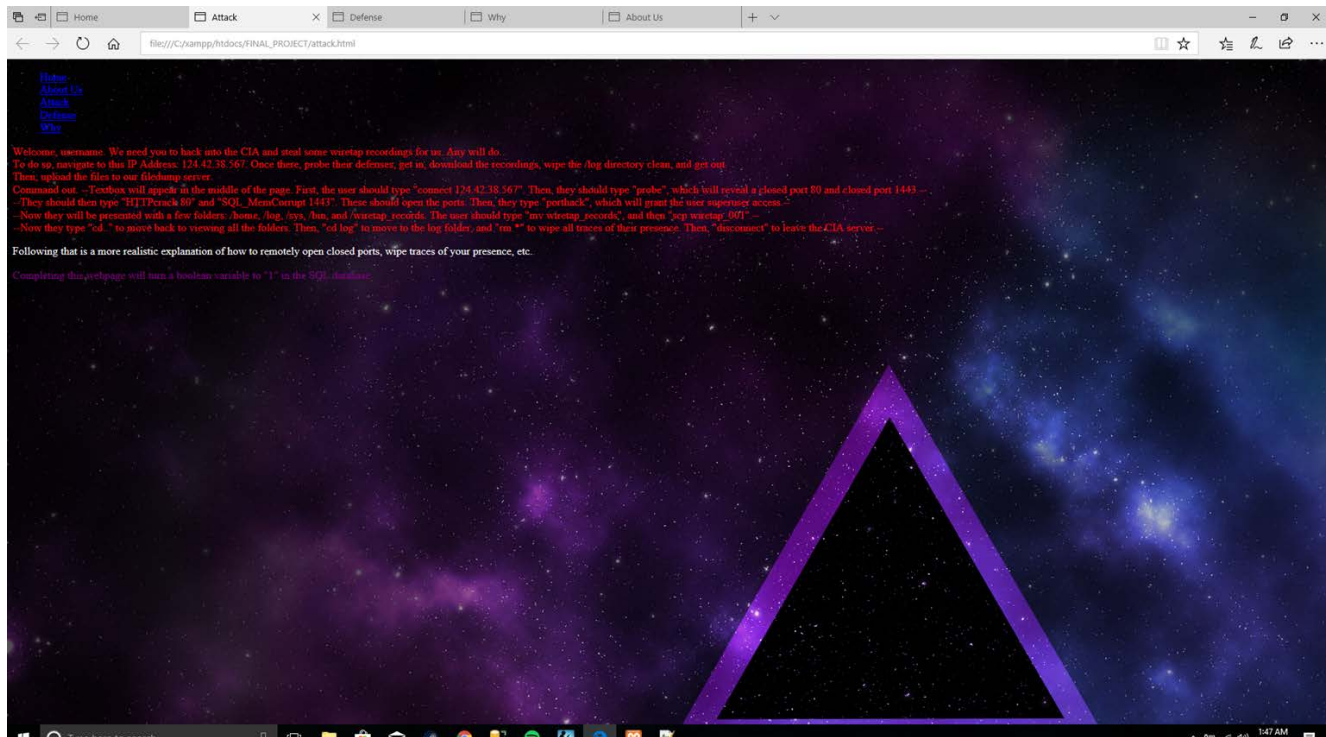
- phpMyAdmin
- Notepad++

User Interface: Home.html



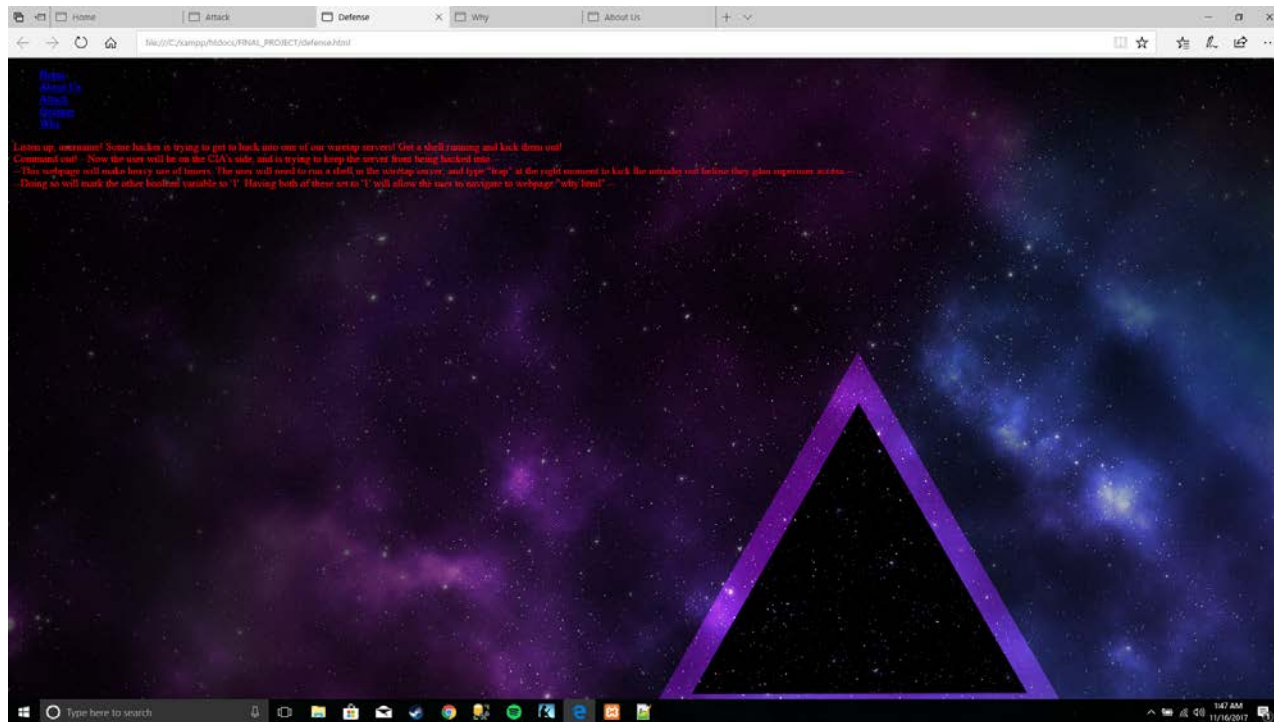


User Interface: Attack.html



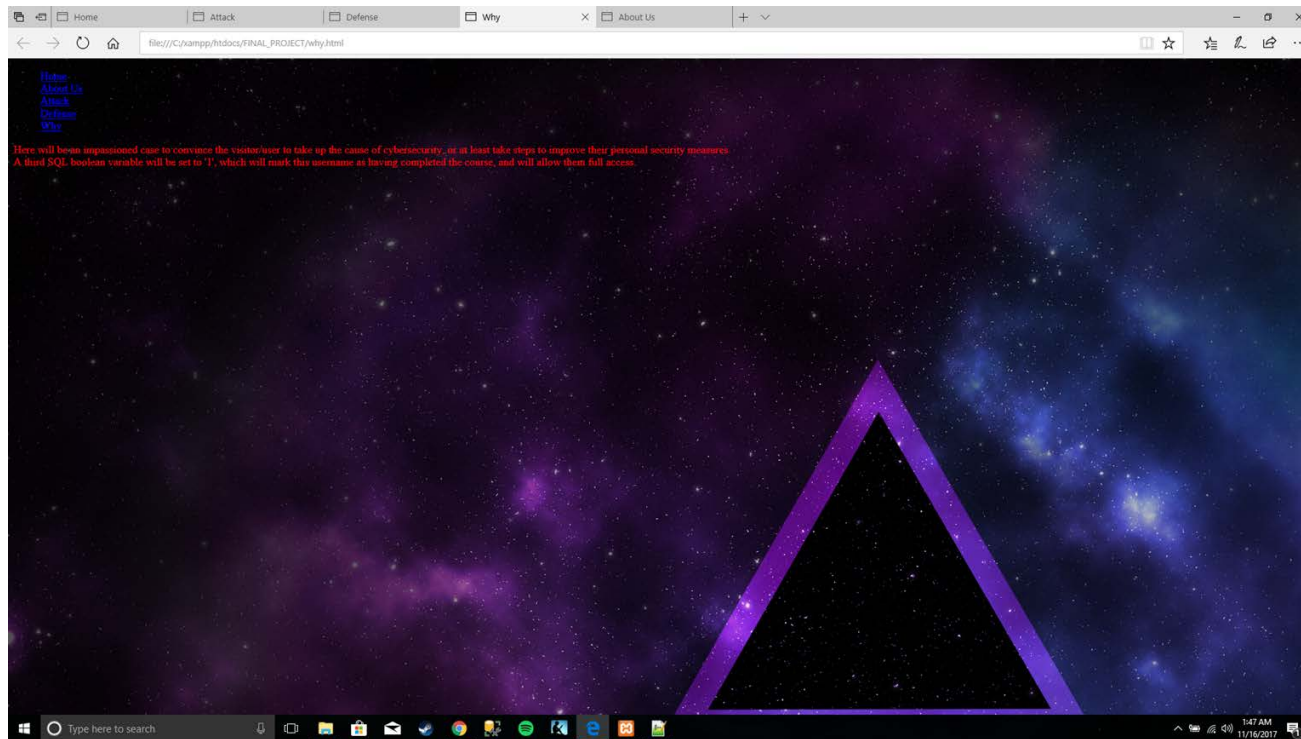


User Interface: Defense.html



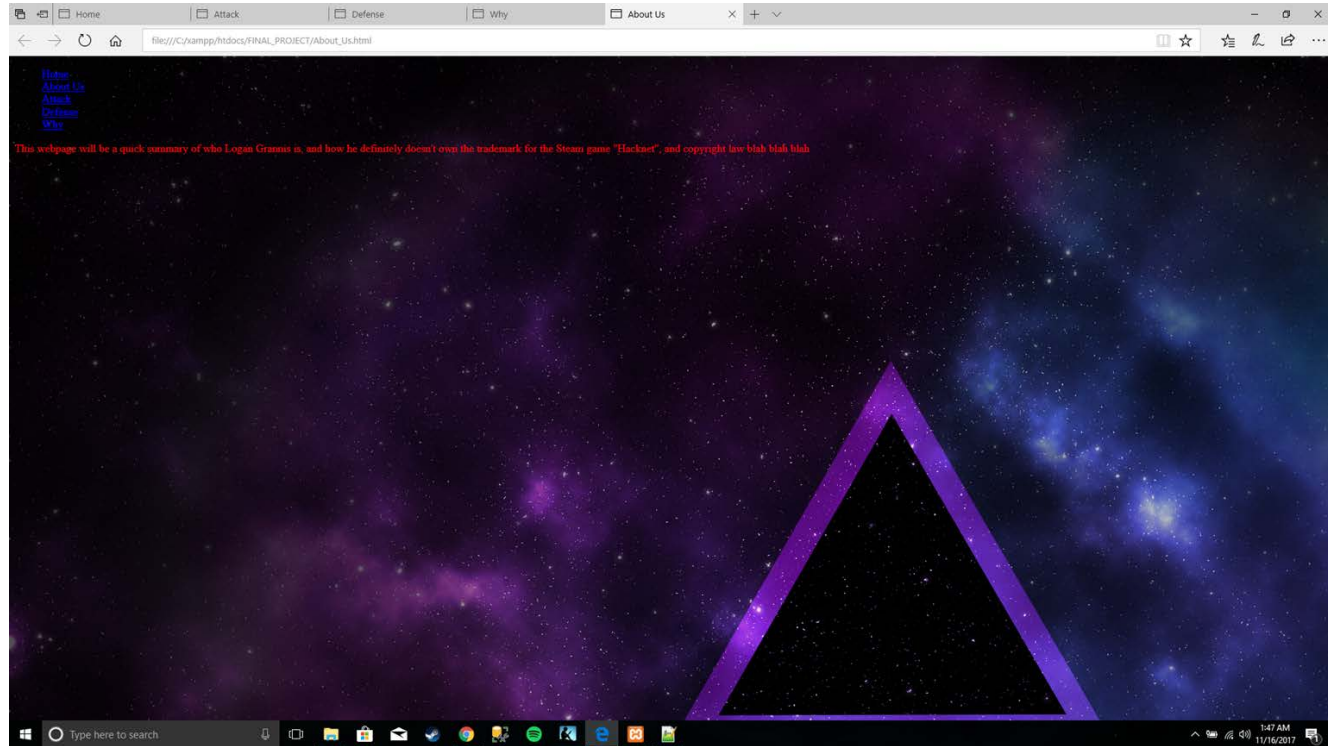


User Interface: Why.html





User Interface: About_Us.html



MySQL Database/Table Creation Process

The image is a collage of four screenshots from the phpMyAdmin web interface, illustrating the process of creating a MySQL database and table.

Top Left Screenshot: The browser address bar shows `localhost/phpmyadmin/db_sql.php?db=hacknetdatabase`. The interface shows the "Server: 127.0.0.1 » Database: hacknetdatabase" view. The "Run SQL query/queries on database hacknetdatabase:" box contains the following SQL code:

```
1 CREATE TABLE Users
2   (Id          INT          NOT NULL PRIMARY KEY AUTO_INCREMENT,
3    Username    VARCHAR(30)  NOT NULL UNIQUE,
4    PASSWORD     VARCHAR(100) NOT NULL,
5    Created_At  DATETIME     DEFAULT CURRENT_TIMESTAMP
6  );
```

Top Right Screenshot: The browser address bar shows `localhost/phpmyadmin/db_sql.php?db=hacknetdatabase`. The interface shows the "Server: 127.0.0.1 » Database: hacknetdatabase » Table: Users" view. The "Show query box" section displays the following SQL code:

```
ALTER TABLE Users ADD ProgressInt INT NOT NULL DEFAULT 0
```

Bottom Left Screenshot: The browser address bar shows `localhost/phpmyadmin/db_sql.php?db=hacknetdatabase`. The interface shows the "Server: 127.0.0.1 » Database: hacknetdatabase » Table: Users" view. The "Show query box" section displays the following SQL code:

```
SELECT * FROM Users
```

Bottom Right Screenshot: The browser address bar shows `localhost/phpmyadmin/db_sql.php?db=hacknetdatabase`. The interface shows the "Server: 127.0.0.1 » Database: hacknetdatabase » Table: Users" view. The "Show query box" section displays the following SQL code:

```
SELECT * FROM Users
```

Below the query box, the table structure is displayed as a header row:

Id	Username	PASSWORD	Created_At	ProgressInt
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Schedule

- Set up Database Tables
 - ½-2 Hour(s)
 - 11/30/2017
- Finish and Debug Hacking Game (php/JS?)
 - 2-4 Hours
 - 12/03/2017
- Clean up UI
 - 3-5 Hours
 - 12/06/2017



Schedule

- Test Functionality
 - 5-10 Hours
 - 12/09/2017