FACULTY OF COMPUTING AND INFORMATICS

CPT6216
INDUSTRIAL TRAINING REPORT

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CHAPTER 1 COMPANY

1.1 Background of Company

Logo of the company

Figure 1-1: XX

XXX Sdn. Bhd. (XXX) is a private company wholly owned by the XXX State Government, and a leading ICT Systems Integrator and Solutions Provider in XXX. XXX was founded in 1991 to computerize the XXX Government. As of today, XXX has more than 1000 employees and people in locations across XXX. For more than 30 years, XXX has collaborated with both public and private organizations to develop digital solutions that enable our clients to develop in a creative, resilient, and sustainable manner, ensuring that they not only adapt to the times but also take advantage of the new opportunities presented. The company has an extensive track record and skills dedicated to providing business solutions and end-to-end ICT services to its customers.(XXX - Digital Partner for Life, n.d.)

1.1.1 What the company stands for

By creating outstanding digital solutions and offering top-notch services, XXX is dedicated to collaborating with its clients to help them reach their objectives. All are supported by ongoing, 24-hour support.

Company Vision:

- A world Class Digital Solutions and Services Provider

Company Mission:

- To provide premium Digital Solutions and Services through engaging and collaborating with stakeholders in XXX and beyond.

1.2 XXX Offices

XXX has one head office, many branch offices spread throughout XXX, and one in XXX. (XXX - Digital Partner for Life (Our Offices), n.d.)

In XXX:

- XXX Office
- XXX Office
- XXX Office
- XXX Office
- XXX Office
- XXX Office
- XXX Office
- XXX Office
- XXX Office
- XXX Office :
- XXX Office

1.3 Subsidiaries Company

Company Logo

Figure 1-2: XXX Sdn. Bhd.

XXX (XXX) was established in July 1996 as a subsidiary of XXX Sdn.Bhd. (XXX). The newly reorganized business focus of XXX, an information and communication technology (ICT) company, is to offer the newest and most advanced technology and services with an emphasis on digital payment solutions for the public, corporate, and private sectors.

Since its founding, XXX has created numerous solutions and taken part in projects of all sizes. Both corporate and governmental organizations implemented their solutions. ICT-based business operating services are also provided by XXX. Under the PaymentGalaxy® brand, XXX now offers online bill presentation and payment, e-commerce, and e-wallet services as part of its commercial operations. (XXX - Digital Partner for Life (Our Subsidiaries), n.d.)

1.4 XXX Services

1. GIS Services

- With a broad range of experience, XXX offers geomatics services to both public and commercial entities. Applications development, systems and database design, user and data needs analysis, the deployment of geospatial and associated spatial technologies, and more are all included in XXX's services. (XXX - Digital Partner for Life (GIS), n.d.)

2. Cybersecurity Services

- XXX is aware that the finest defenses are constructed using the most in-depth expertise. Through our Professional Cybersecurity Services, XXX may assist its clients in assessing their current situation, identifying their cybersecurity advantages and disadvantages, and determining how to strengthen their defenses.(XXX - Digital Partner for Life (Cybersecurity), n.d.)

3. Cloud Services

- It can make a lot of effort and resources for firms to stay up to date with the newest IT platforms and infrastructure to suit business needs. ICT investment is expensive, and it can be even more difficult to find and retain experts to handle these technologies. Businesses can rely on XXX as a service provider to benefit from cloud solutions and ease their worries rather than investing valuable resources in developing, implementing, and maintaining their technological infrastructure and platforms.(XXX - Digital Partner for Life (Cloud), n.d.)

4. Training

- XXX established its Training Centre in response to the growing demand for IT training in Malaysia. With a large pool of experienced trainers and dedicated training facilities, XXX is well-equipped to meet the diverse training needs of businesses and individuals alike.(XXX - Digital Partner for Life (Training), n.d.)

5. Contact Centre Services

- The team of passionate contact center service specialists at XXX provides excellent customer assistance around the clock. They use cutting-edge contact center technologies to guarantee smooth interactions. On their behalf, this group assists businesses in responding to consumer questions, resolving problems, and cultivating enduring client connections.(XXX - Digital Partner for Life (Contact Centre), n.d.)

6. Data Centre Services

- Through its Managed Services, XXX adds value to its cloud data center solutions. With a committed group of professionals providing 24/7 monitoring, businesses can guarantee optimal system always functioning. With the help of cutting-edge cybersecurity technologies and skilled experts dedicated to protecting data from online attacks, XXX fortifies infrastructure. Furthermore, the round-the-clock call center and backup technical staff are always prepared to quickly address any problems, reducing downtime. XXX offers complete support through Managed Services, allowing companies to run confidently, safely, and efficiently.(XXX - Digital Partner for Life (Data Centre), n.d.)

CHAPTER 2 OBJECTIVES

The internship's main goals were to give me real-world experience using their theoretical knowledge and to deepen my understanding of the instruments, procedures, and duties that come with working in a professional setting. Below are the objectives of my internship:

1. Learning and using Technical Skills:

   To enhance my technical and problem-solving skills, strengthen my coding proficiency in various programming languages, and gain practical experience using different tools to complete tasks effectively, thereby contributing to high-quality work and project outcomes.

2. Project Contribution

   To gain hands-on experience in the organization’s projects, allowing me to participate in project planning, development, and program testing, as well as contribute to future improvements and implementations when needed.

3. Collaboration and Teamwork

   To actively participate and collaborate in team meetings, feedback discussions, and brainstorming sessions; to share ideas and work with team members in solving problems; and to seek clarification and assistance when necessary.

CHAPTER 3 TASKS AND PROJECT

3.1 Task 1: Research on File Upload Vulnerability

3.1.1 Description/ Methods

At the beginning of my task, I was assigned by my supervisor to study file upload vulnerability. Due to the lack of information on this vulnerability, I need to do research and study the file upload vulnerability.

Method of study: OWASP Forum

By referring to the OWASP forum about file upload vulnerability, I was able to find out detailed information about this vulnerability, how from the attacker's standpoint to exploit this vulnerability and learn about best practices by program developers to mitigate against this vulnerability.(*File Upload - OWASP Cheat Sheet Series*, n.d.; *Unrestricted File Upload | OWASP Foundation*, n.d.)

Method of study: DVWA

I was also able to learn about the simulation of file upload vulnerability and test them with an online web penetration testing environment, Damn Vulnerable Web Application (DVWA). DVWA provides a simulation of how an attacker can upload malicious files to gain unauthorized access to the web application.

Figure 3-1: DVWA File Upload

Figure 3-1 shows the file upload section of DVWA. This section allows users to perform testing on the file upload function.

3.1.2 Achievement of the task

From this task, I am able to gain information about the file upload vulnerabilities through OWASP and other online articles that may help me understand more about this vulnerability. Besides, I am also learning how to use DVWA to simulate and understand how an attacker can upload malicious files that may cause unauthorized access to the web application.

3.1.3 Problems encountered and Ways to improve

At first, I found myself lacking in information about file upload vulnerabilities. Through online articles and forums, I am able to catch up with valuable and useful information that can assist me in completing this first task.

3.2 Task 2: Create a File Upload System with CRUD Operation (Laravel Framework)

3.2.1 Description/ Methods

In this task, I was assigned to create a File Upload System by using Laravel Framework, with create, read, update, and delete features. Laravel is a free and open-source PHP-based web framework for building web applications. For this task, Microsoft Visual Studio has been used to set up the File Upload System, which runs in Laravel Framework, and I have performed some research online to find some helpful tutorials that can assist in setting up the Laravel Framework in my Visual Studio Code. (*(212) 1 | Laravel PHP Framework Tutorial for Beginners | Laravel for Complete Beginners | Laravel Tutorial - YouTube*, n.d.)

I was able to create a simple File Upload System with some security features. This system will be implementing CRUD operation as a part of the features. File Upload System's CRUD Operation will allow users to upload, read, update, and delete the files. (*(212) Laravel CRUD in 50 Minutes for Beginners from Scratch - YouTube*, n.d.)

File Upload System (Laravel Framework)

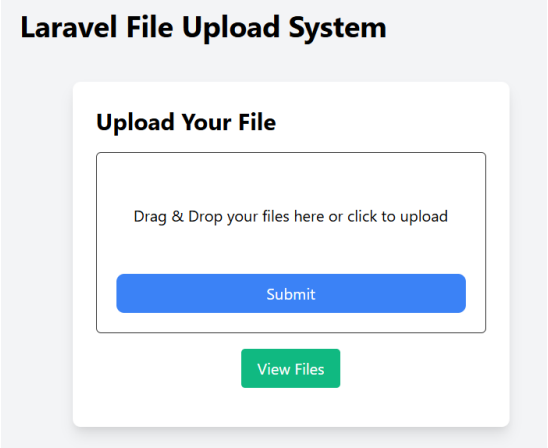

Figure 3-2: File Upload System (Laravel)

Figure 3-2 shows the home page of the file upload system created by using Laravel Framework. To upload the file, users can drag and drop the files inside the upload section or just click and select the files manually. After the files have been selected, the user can select the Submit button to proceed with the upload process.

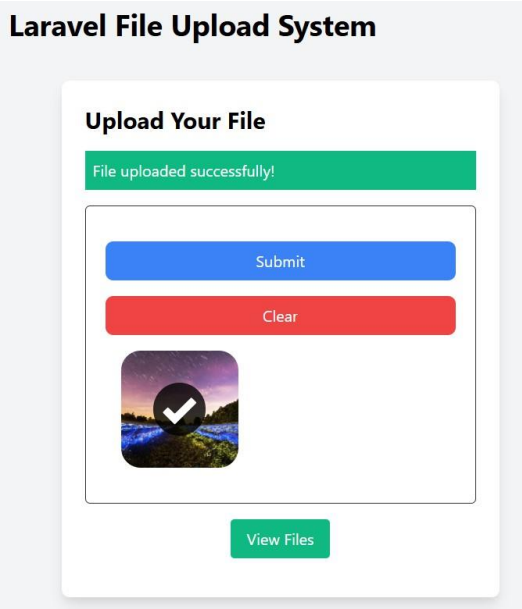

Figure 3-3: File upload success

Figure 3-3 shows after the users clicked on the Submit button with selected files. The clear button is to remove the files from the upload section to upload another file and the View Files button is to view the uploaded files.

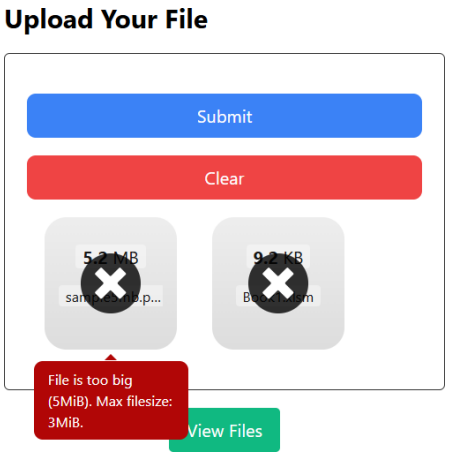

Figure 3-5: Invalid file size

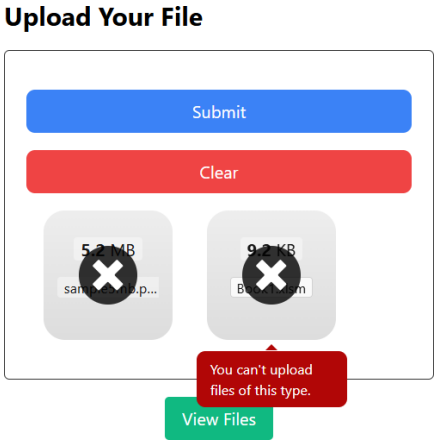

Figure 3-4: Invalid File Type

Both figures above show that when the users were to upload a file that has an invalid size or file extension, the file upload section will reject the file with error messages as shown in the figure. This security feature is used to prevent users from uploading malicious files with oversized files or files with malicious extensions like PHP extensions.

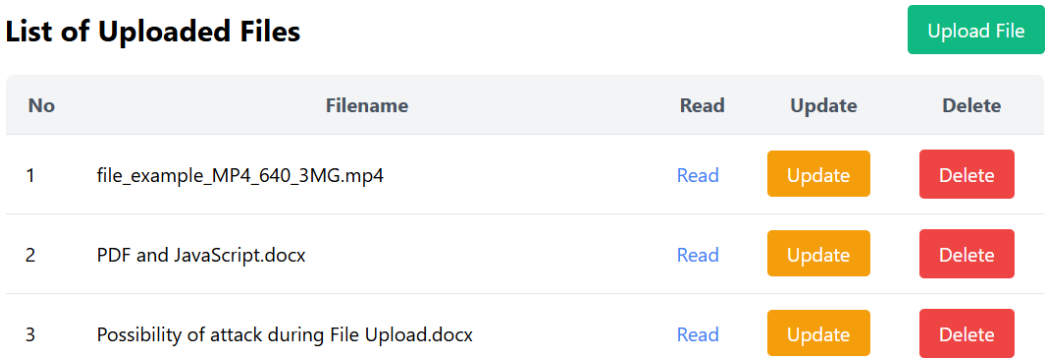

Figure 3-6: View Uploaded files

Figure 3-6 shows the list of uploaded files when the View Files button is clicked. From here, users can choose the Read button to view the files, the Update button to replace the files, or the Delete button to remove the files from the list.

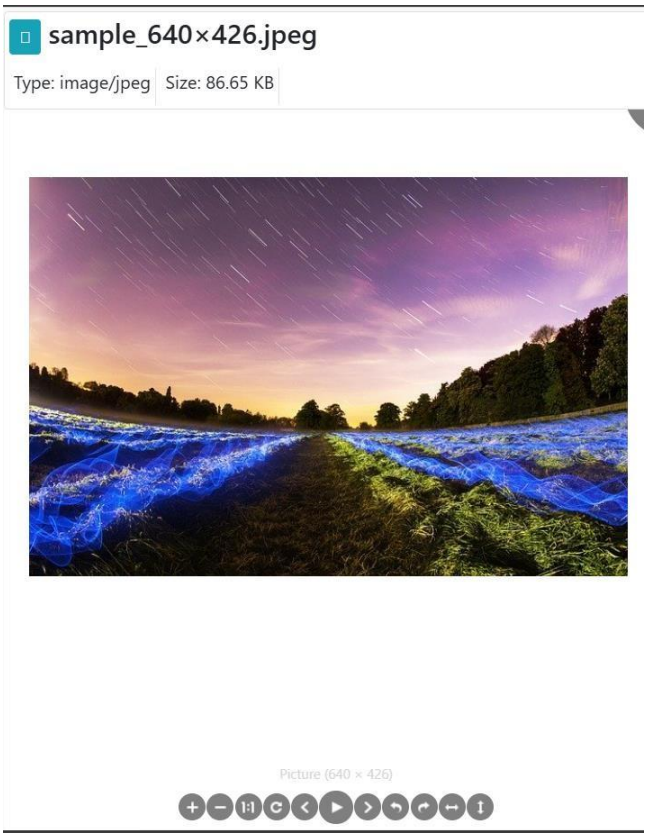

Figure 3-7: Read button is clicked

Figure 3-7 shows an example when a user clicks on the Read button to view the content of a file. Laravel File Viewer is being used to display the file content.

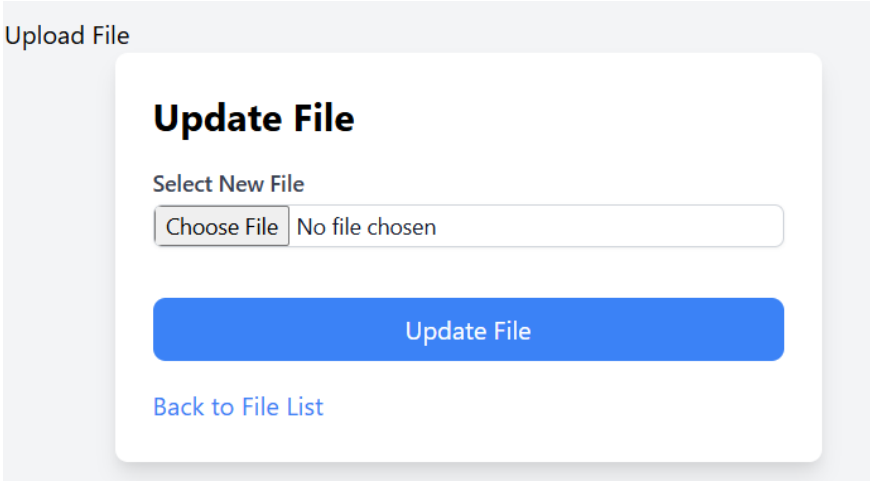

Figure 3-8: Update form

Figure 3-8 shows an Update form when the Update button is selected from the list of files page. From the figure, users will be selecting a file that will replace the selected file in the list before.

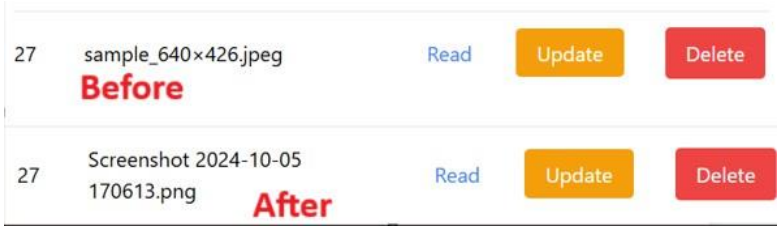

Figure 3-9: Before and After Update

Figure 3-9 shows that a file has replaced the file before this indicates the update is successful.

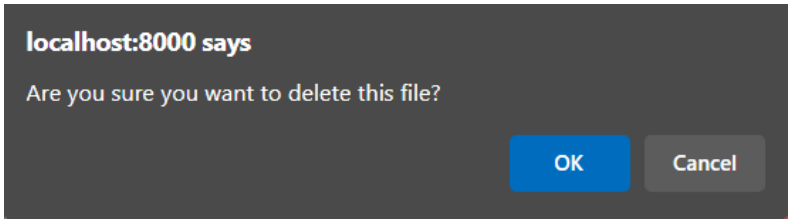

Figure 3-10: Delete dialog

Figure 3-10 shows a message dialog will be displayed if the Delete button is selected on a file. Users can choose either the Ok button to proceed with the action for deleting the file or the Cancel button to abort the action.

3.2.2 Achievement of the task

From this task, I have learned how to set up Laravel Framework in Microsoft Visual Studio Code and I also have learned how to create a File Upload System with implementation of CRUD operation to improve the functionality of the file upload system. By coding PHP using Laravel Framework, I have learned that this framework section the codes using the MVC Model, and the purpose of this model is to make the code tidier and easier to manage.

3.2.3 Problems encountered and Ways to improve

At the beginning of this task, I had problems understanding the use of Laravel Framework and setting it up in my Microsoft Visual Studio Code. It required me to study and learn about how to set up and use the framework to build a file upload system web application. I was able to solve this task with the help of online resources and tutorials for setting up the Laravel Framework.

3.3 Task 3: Create a File Upload System with Pure PHP

3.3.1 Description/ Methods

In this task, I have been assigned a new task to create a Pure PHP File Upload System which is used for comparison purposes. The Pure PHP File Upload System is also implemented with CRUD operation.

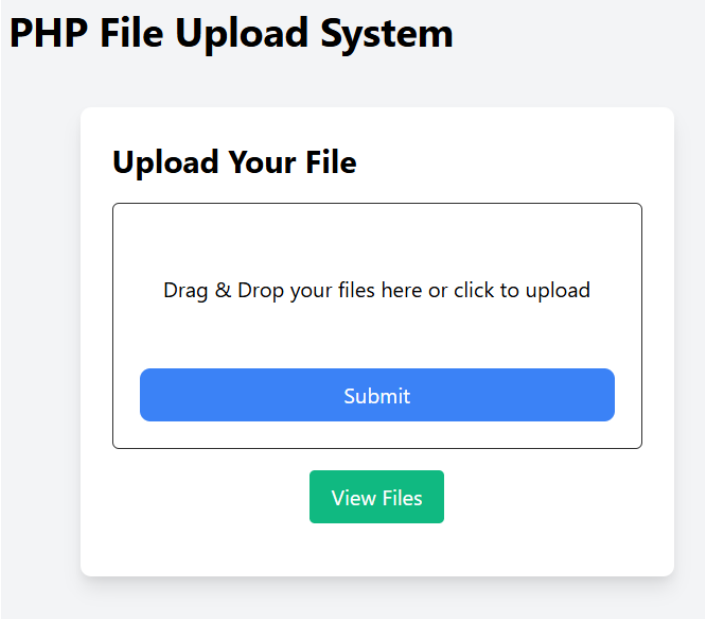

Figure 3-11: File Upload (PHP)

Figure 3-11 shows the home page of the file upload created with pure PHP codes. The overall functions of the file upload system are like the file upload system that is created with Laravel Framework.

This file upload system is also implemented with security features like the file upload system in the Laravel Framework which is to check the file sizes and extensions to prevent malicious uploads to the system database.

The key difference between this version and the Laravel version is how the web application Read the file. When PHP file upload is to view a file, it will open the file using “iframe” while Laravel will use “Laravel File Viewer” to view the content of the file.

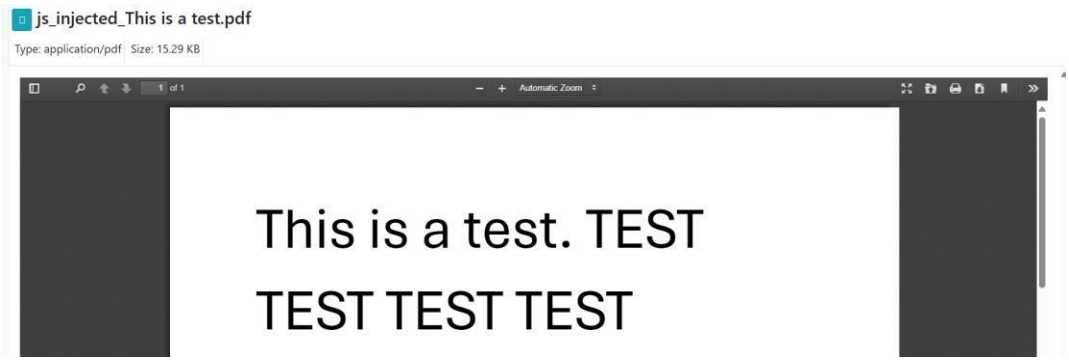

Figure 3-12: PDF view in Laravel File Upload

Figure 3-13: PDF view in PHP File Upload

From the figure above, I am testing to view a PDF file with JavaScript injected to see the difference. From the result in Figure 3-12, the JavaScript alert did not execute in Laravel File Viewer while an alert message showed up when it was viewed on the PHP File Upload with "iframe" in Figure 3-13.

3.3.2 Achievement of the Task

From this task, I learned to create a file upload system implemented with CRUD operation with Pure PHP code. Besides that, I also have learned the file upload system created with pure PHP code has more security flaws than the one created with Laravel Framework. These security flaws provide me with a better testing environment as I can learn more about file upload vulnerabilities and ways to improve my web application.

3.3.3 Problems encountered and Ways to improve

In this task, I encountered a problem when setting up a file viewer to view different types of files in the file upload web application. I am not able to find a file viewer similar to Laravel File Viewer to use in pure PHP code, so I use the "iframe" method to view the file content.

3.4 Task 4: Hosting File Upload System on Oracle Linux

3.4.1 Description/ Methods

In this task, I was assigned to work with XXX to set up file hosting on Oracle Linux. He will be the one to guide me if I have encountered any problems in this task. XXX provided me with the login credentials for Oracle Linux and my task is to discover how to transfer my project files to the Oracle Linux hosting server.

First, I need to install the required packages like PHP and MySQL on the Linux machine. I have found an online forum to assist me in taking this first step. (*Httpd - How to Install PHP 8 in Oracle Linux with Apache? - Server Fault*, n.d.) After installing the required packages, I need to install MySQL to enable the database service on the Linux machine. By referring to an online forum, it was able to guide me to set up MySQL successfully in this step. (*Install MySQL on Oracle Linux Server,Mastering MySQL Installation on Oracle Linux 8: Step-by-Step Guide | Medium*, n.d.)

After MySQL and the required packages have been installed, I can finally transfer the project file to the Linux machine by using WinSCP. WinSCP is a free online tool that will allow users to transfer files between host machines to virtual machines.(*WinSCP :: Official Site :: Download*, n.d.)

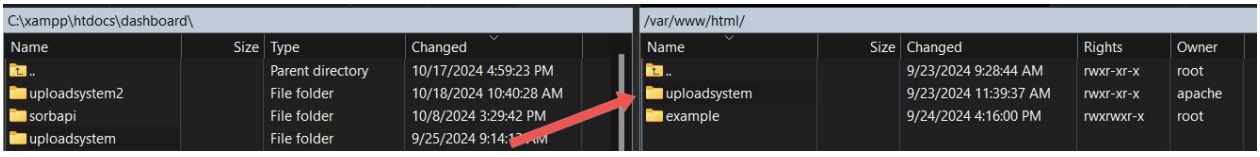

Figure 3-14: File transfer with WinSCP

Figure 3-14 shows how files are transferred from the host machine to the virtual machine. From the figure, the host machine is on the left column and the virtual machine is on the right column. To transfer the file, I can use drag-and-drop methods to transfer the file to the virtual machine.

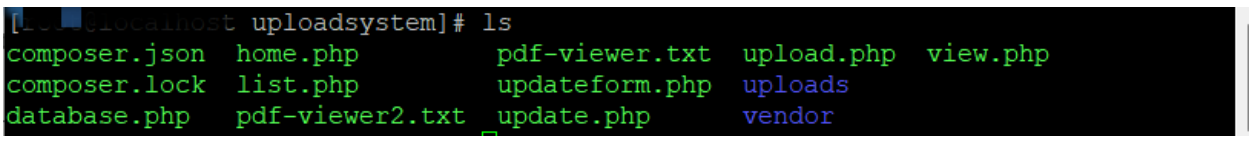

Figure 3-15: Project file in the hosting directory

Figure 3-15 shows the files that were transferred to the virtual machine. By navigating to the directory "/var/www/html/" from the Linux machine and inputting the command "ls" I can see all the files that have been transferred.

```php
<?php
$host = 'localhost';
$db = '[redacted]';
$user = '[redacted]';
$pass = '[redacted]';
$charset = 'utf8mb4';

$dsn = "mysql:host=$host;dbname=$db;charset=$charset";
$options = [
    PDO::ATTR_ERRMODE => PDO::ERRMODE_EXCEPTION,
    PDO::ATTR_DEFAULT_FETCH_MODE => PDO::FETCH_ASSOC,
    PDO::ATTR_EMULATE_PREPARES => false,
];

try {
    // Create a new PDO instance for database connection
    $pdo = new PDO($dsn, $user, $pass, $options);
} catch (PDOException $e) {
    die("Database connection failed: " . $e->getMessage());
}
```

Figure 3-16: Modify database file

Figure 3-16 shows the content of the database.php file. I need to modify the database.php to make sure the required parameters are correct to make the connection to the database and the file upload system.

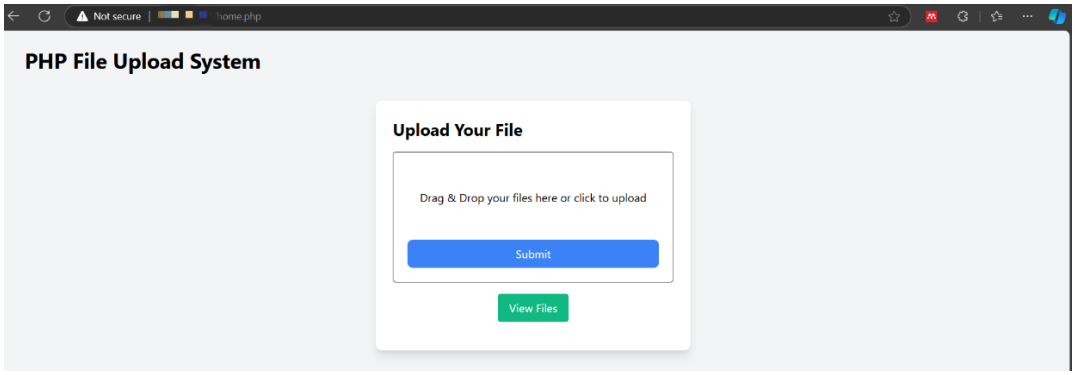

Figure 3-17: Access the hosting file upload

Figure 3-17 shows when a user accesses the web application from different machines. After everything is configured and set up correctly, users can access the file upload web application from a different machine with the URL "host_IP/home.php" as shown in the figure above.

3.4.2 Achievement of the Task

From this task, I have learned how to use the Command Line Interface (CLI) command to navigate around the Linux machine. Besides that, I also have learned how to configure Oracle Linux machine to host a web application from the Linux server and access the web application to test its functionality.

3.4.3 Problems encountered and Ways to improve

At the beginning of the task, I encountered problems setting up the Oracle Linux machine to install the required packages. The issues are able to be solved with the help of XXX and the rest of the steps can be solved with the help of tutorial forums with detailed steps and instructions.

3.5 Task 5: Improving and adding security features for the File Upload System

3.5.1 Description/ Methods

In this task, I was assigned to do a study on improving the security of the file upload system. The first security improvement I can do is double extension validation. I have found that my file upload system is accessible to double extension file vulnerability. Through my research, I have found a solution from an online forum discussing this problem. (*Prevent Double Extension Upload in Php | DaniWeb*, n.d.) In this forum, a user is suggesting to use of a method called "explode" to solve this problem.

Implementation of Double File Extension Checker

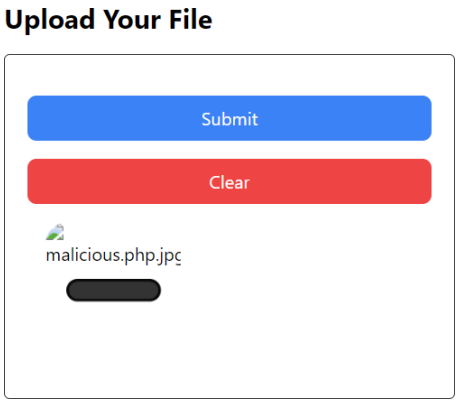

Figure 3-18: Double extension upload

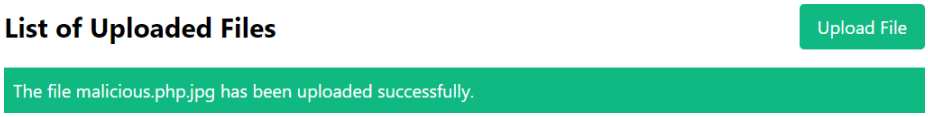

Figure 3-19: Success Upload of Double extension file

From the figures above, I can upload files with double extension to the database of the file upload system. The attacker can exploit this attack by appending valid file extensions like "jpg" after the invalid extension "PHP" and this file will be treated as a valid file in the file upload system. This could be dangerous if the attacker exploits this vulnerability to gain unauthorized access to the web server. If this file is able to be executed in the web application, it may cause a serious impact on the file upload system.

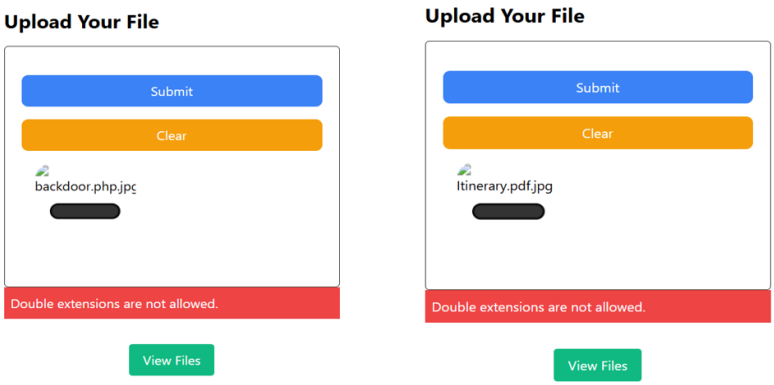

Figure 3-20: Implementation of double extension validation

Figure 3-20 shows the implementation of the double extension validation with the explosion method. I have tested the implementation with two different files with double extensions and found that the result shows as long as the file contains two or more extensions, the file will be rejected.

The next security improvement is the integration of API to the file upload system. In this task, I utilized the Postman tool to assist me in understanding the API and some of the keywords that I need to know from the API.

Integration of API to File Upload System

API is an additional security feature to the file upload system. It provides file checking and returns the result to the file upload system for further action.

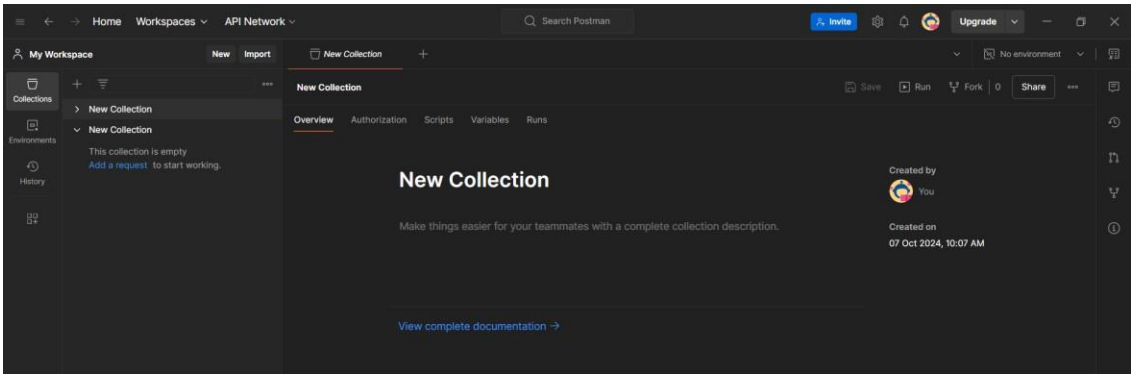

Figure 3-21: Interface of Postman

Figure 3-21 shows the interface of the Postman tool that I will be using to interact with the API to get the response and result.

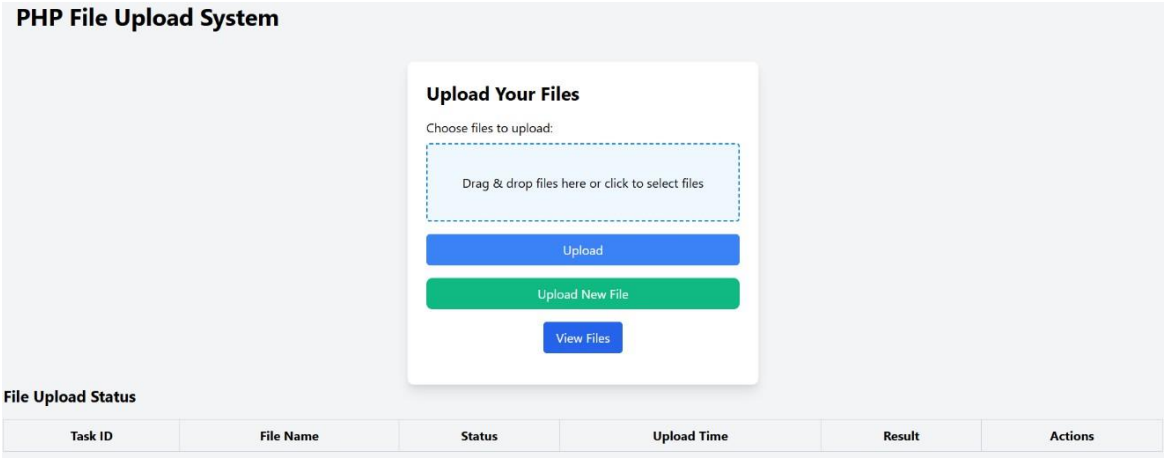

Figure 3-22: File Upload with API Integration

Figure 3-22 shows the graphical user interface (GUI) of the web application with the integration of API. I have added a table below the upload form to function as getting the response from the API back to the web application. After the API returns the result, users will be prompted to click an action to Upload or Skip in the Actions column.

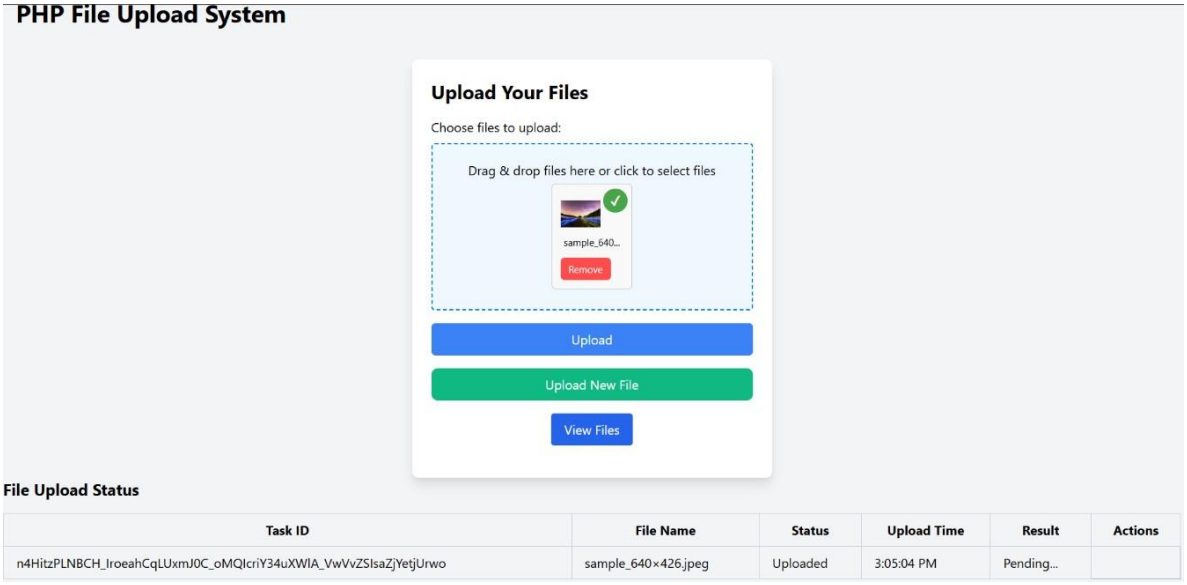

Figure 3-23: Upload to API for checking

Figure 3-23 shows the file is under the checking process by the API. After the file has been uploaded to the API, the API will assign a task ID to the file and the web application will be waiting until the result returns from the API to the Result column. The Result column will change from "Pending" to the actual result status after the checking is done.

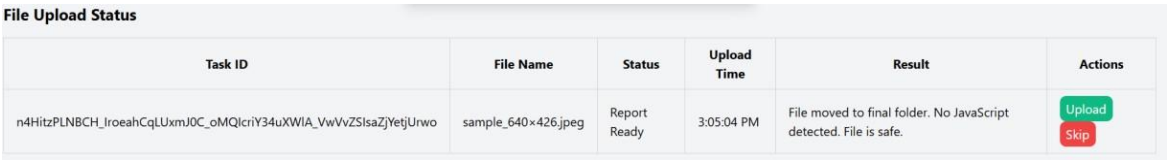

Figure 3-24: Done checking from API

Figure 3-24 shows that the result has returned from the API to the Result Column. The availability of the action buttons depends on the result of the API. Now users can choose the Upload button in the Actions column to proceed upload to the database or choose the Skip button to do the otherwise.

3.5.2 Achievement of the Task

From this task, I have learned how to mitigate file upload vulnerability that can bypass my file upload system extension whitelist by implementing double file extension validation. This will prevent attackers from attempting to upload malicious files to the file upload database. Besides that, I also have learned how to integrate an API into the file upload system to improve its security features. This integration will strengthen the security of the file upload system with additional file checking from the API.

3.5.3 Problems encountered and Ways to improve

In this task, I have encountered problems like thinking of a solution to prevent whitelist extension bypass with double file extension. It required me to go through multiple articles and forums to find the best answer to this problem. Some of the solutions by the other researcher might cause a false positive result while checking for double extension. For example, a filename with multiple period symbols might be flagged as a double extension with the “split” method. From the testing, the “explode” method provides the best solution to my problem.

Understanding an API and learning how to interact with it can be very complex but fortunately, with tools like Postman, I was able to understand the API easily.

CHAPTER 4 TRAINING ANALYSIS

4.1 Skills Developed/ Knowledge Gained

Throughout the three-month internship period, I have gained a lot of knowledge either from self-study and self-exploration or from the people around me who have helped me. Still, I would like to give appreciation to my supervisors XXX and XXX who has been giving me a lot of guidance from the first task to my latest task.

I was able to develop some of the most useful skills during my internship in these three months. First, I was able to develop my problem-solving skills by self-exploring and self-studying if the given task was not familiar to my knowledge. The Internet resources and articles have been the most helpful in developing my problem-solving skills. Next, I was able to develop my technical skills in coding PHP language. Both my task and project are working around creating a file upload system with PHP language. I had the opportunity to enhance my skills in coding PHP by developing the front-end and back-end of the system. Besides developing my technical skills, I was also able to develop strong communication skills by working closely with the team. I learned how to effectively collaborate, share ideas, and provide updates on progress, ensuring that everyone was aligned on the project goals. Lastly, I was able to develop quality skills of self-learning and adaptability. I was able to quickly adapt myself to taking on new challenges and always look out for a solution when facing any kind of hindrance.

As for knowledge gained, I was able to learn a lot based on the task that I had done. First, I was able to gain a lot of knowledge regarding File Upload vulnerability and some of the ways to improve file upload security through the OWASP forum. Another new thing that I have learned is using Laravel Framework to create a web application. I have learned to use Laravel's MVC model to practice a clean and tidy code environment. Next, I have gained new knowledge when using the Oracle Linux machine. Not only did I learn how to use the Command Line Interface of the Linux machine, but I also acquired practical experience when configuring and setting up Oracle Linux for hosting file upload system web applications. Finally, I was able to gain a lot of knowledge about the implementation of security features. File upload can be very vulnerable to many kinds of attacks, so security implementation is very important when developing a file upload web application. In the tasks, I have learned to implement double file extension validation and integration of API as a part of security enhancement to the file upload system.

4.2 Suitability, Strength, Weaknesses

4.2.1 Suitability

The internship was highly suitable for me, as it aligned well with my academic background in Computer Science and my major in Cybersecurity. It provided a valuable opportunity to apply theoretical concepts from my coursework to real-world challenges. The company assigned me to the cybersecurity department, where I worked on tasks directly relevant to my field. I gained hands-on experience with a variety of cybersecurity tools, such as vulnerability scanners and penetration testing frameworks, which deepened my understanding of threat detection and risk management.

The practical exposure was enhanced by the guidance I received from experienced professionals, who provided feedback and support throughout the internship. This allowed me to continuously improve my technical and problem-solving skills. Overall, the internship helped bridge the gap between academic theory and professional practice, giving me a clearer sense of what a career in cybersecurity entails and equipping me with skills essential for my future work.

4.2.2 Strength

My biggest strength is I can take up new challenges and quickly adjust myself to a new working environment. Within a short period, I can fit comfortably with the people around me and work in a team quickly. As for taking on new challenges, I will always have the will to find a solution to a problem because I know every question has an answer as long as I keep on finding it. Moreover, I can learn the fundamentals of things quickly which allows me to get to the grasp of a new concept very fast even though I did not know or learn them before.

4.2.3 Weaknesses

I've discovered during my internship that asking for help and guidance is one of my weaknesses. I might have a tendency to assume that my questions will eventually be answered, so I would put off doing my study and find the answer on my own rather than asking my seniors directly. Since cybersecurity is my major and coding is not frequently used for cybersecurity-related assignments at my university, I also found myself having problems with coding in several computer languages

like JavaScript because I less often use it in my school projects. Fortunately, the university program covers the basics of coding, so I may not be as concerned.

4.3 Application of subject knowledge gained in university to the industrial environment

In the university, I have learned the fundamentals of programming languages like HTML, CSS, PHP, and JavaScript. With the knowledge that I have learned, I can apply it in my task when creating a File Upload system web application. My task also involved the use of a database for storing files with the use of a relational database management system (RDBMS) like MySQL. I was able to utilize the knowledge that I gained during my study at the university and use it practically.

Throughout the internship, I was able to put my programming skills to use by creating the front-end of the File Upload System web application with HTML and CSS while the file upload back-end processing with PHP and JavaScript. The industry makes extensive use of these languages, therefore being able to utilize them practically will help us in our future employment.

Furthermore, this internship also allowed me to experience the use of cybersecurity knowledge that I had learned during my studies. The ethical hacking course that I took in university has helped me a lot when I am operating a Kali Linux machine and using some of the penetration testing tools like Damn Vulnerable Web Application (DVWA).

All things considered, this internship has been a priceless educational opportunity. As trainees, it has enabled us to apply the theoretical information we learned in university to practical projects, improving our comprehension of the practical applications of databases, programming languages, and even ethical hacking techniques. I am thankful for the chance to develop professionally, and I do not doubt that the abilities I have gained will help me in my future employment.

4.4 Recommendation to others

I would be happy to recommend students who are in cybersecurity fields and are looking for a good internship placement, this company has everything they are looking for. In XXX, they offer a very challenging task based on real-world problems and with this, students can gain valuable work experience as trainees. Pushing interns outside of their comfort zone makes learning intriguing ideas and fresh information easier. Be at ease, even if the task sometimes gets too hard, the supervisors and seniors in this company are always ready to aid. Nevertheless, I would still recommend trainees to equip themselves with basic knowledge so that they may be able to receive new challenges. Interns with very high determination and solid preparation will be very good at taking internships in this company. Interns in this company will also be able to experience multiple job requests and follow-up deadlines of the task, hence providing very good discipline when working in the industry. XXX is good at providing high-quality internship experience with challenging tasks and a real working environment. If the interns are also looking for permanent placement here in the future, it is viable if the interns can meet the expectations of the company.

CHAPTER 5 CONCLUSION

In conclusion, XXX is a private company that focuses on providing digital solutions and end-to-end ICT services to its customers. With the various types of services that they provide like GIS, Cybersecurity, Cloud, Training, Contact Centre, and Data Centre services, XXX aims to provide the best digital solutions to their customers and ease their concerns. All my tasks involved here as a trainee are to research File Upload vulnerabilities and next is to create a File Upload system with various security implementations and testing will be carried out to meet the task objectives. During these three months of internship at XXX, the internship was very successful as I learned and experienced many new things.

I have gained insightful knowledge and useful skills from my internship that will be extremely helpful in my future professional endeavors. I was able to deepen my grasp of the sector and apply the skills I had learned in university to practical scenarios during the internship.

Along with this, the internship helped me build a strong work ethic and flexibility by exposing me to the expectations and challenges of this field. I have learned the way to set priorities, fulfill deadlines, and handle situations professionally under pressure.

With every aspect considered, my internship has been worthwhile and rewarding. I am appreciative of the information and abilities I have gathered, and I believe that they will provide strong foundations for my future career choices.

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7 APPENDICES

7.1 Reporting Form

7.2 Weekly Logs

7.2.1 Week 1

7.2.2 Week 2

7.2.3 Week 3

7.2.4 Week 4

7.2.5 Week 5

7.2.6 Week 6

7.2.7 Week 7

7.2.8 Week 8

7.2.9 Week 9

7.2.10 Week 10

7.2.11 Week 11

7.2.12 Week 12