Cybersecurity

Project 1 Technical Brief

Make a copy of this document before you begin. Place your answers below each question. This completed document will be your deliverable for Project 1. Submit it through Canvas when you're finished with the project at the end of the week.

Your Web Application

Enter the URL for the web application that you created:

```
https://hyspysecure.azurewebsites.net
```

Paste screenshots of your website created (Be sure to include your blog posts):

Hi, I'm Jazmarie!

Welcome to HySpySecure! I was motivated to start this blog to share my experiences in cyber with you all.

I began my interest in Cyber Security in late 2020.

Blog Posts

Are humans the weakest link in security?

Cyber and Security

Humans play an important role in keeping information safe. It's fair to say and with good reason for employers to be worried about their employees contributing to Cyber Security risks. Human error can easily be the reason an attacker can find a vulnerability. Humans should be actively seeking to mitigate risk. Employees have a role in protecting themselves and the companies that they work for. Carelessness or hiding a mistake can lead to increasing the damage that was caused. Device and media exposure also plays a big part in todays world, leading to more risk. I think staff training is essential to teaching employees best practicies.

Security Department knows best

Cyber

It is essential for a business to keep its data secure. Indentity theives and hackers will try and look for as many vunerabilties as they can. Cyber Security is an essential component for business to protect their data. Reguarly updating hardware and software, using strong passwords, installing a firewall and anti-virus software, educating users on safe internet practices, monitoring networks for suspicuous activity, and backing up data and systems are great examples of keeping the network and data safe.

Day 1 Questions

General Questions

1. What option did you select for your domain (Azure free domain, GoDaddy domain)?

```
Azure Free Domain
```

2. What is your domain name?

```
hyspysecure.azurewebsites.net
```

Networking Questions

1. What is the IP address of your webpage?

```
20.119.16.12
```

2. What is the location (city, state, country) of your IP address?

```
Washington, Virginia , USA
```

3. Run a DNS lookup on your website. What does the NS record show?

```
nslookup -type=ns hyspysecure.azurewebsites.net
```

Web Development Questions

1. When creating your web app, you selected a runtime stack. What was it? Does it work on the front end or the back end?

```
A runtime stack is a combination of technologies used to build a web
application, it typically includes a web server, a programming language, and
a database, they typically work on the back end.
```

2. Inside the `/var/www/html` directory, there was another directory called assets. Explain what was inside that directory.

```
CSS is used for the style and layout of webpages. images, contained the
```

```
images used for the web page. It was using CSS
```

3. Consider your response to the above question. Does this work with the front end or back end?

```
CSS and images are used in the front end.
```

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

```
A cloud tenant runs on a dedicated infrastructure. Hardware, storage, and
network are dedicated to a single client, and there are no neighbors to
share hosted resources with. They may reside in a dedicated offsite data
center or with a managed private cloud provider.
```

2. Why would an access policy be important on a key vault?

A Key Fault determines the security principle with which a user, group or application can perform different operations on Key Vault secrets, keys, and certificates

3. Within the key vault, what are the differences between keys, secrets, and certificates?

Key Vault helps you control your applications' secrets by keeping them in a single, central location and by providing secure access, permissions, control, and access logging capabilities. A secret is anything that you want to tightly control access to, such as API keys, passwords, certificates, or cryptographic keys

Cryptography Questions

1. What are the advantages of a self-signed certificate?

> Self-signed certificates are appropriate for development/testing environments and internal network websites.

2. What are the disadvantages of a self-signed certificate?

> They do not provide any trust value, so are mostly useless in establishing identity assurance.

3. What is a wildcard certificate?

A wildcard certificate is a public key certificate which can be used with multiple sub-domain of a domain

4. When binding a certificate to your website, Azure only provides TLS versions 1.0, 1.1, and 1.2. Explain why SSL 3.0 isn't provided.

```
SSL 3.0 is an insecure protocol that is no longer considered safe to use, a
security vulnerability known as the POODLE attack was discovered that
allowed attackers to decrypt data sent over SSL 3.0.
```

5. After completing the Day 2 activities, view your SSL certificate and answer the following questions:

   a. Is your browser returning an error for your SSL certificate? Why or why not?

```
No it is not. The web browser can verify the SSL certificate
```

   b. What is the validity of your certificate (date range)?

```
Thursday, August 13th, 2013 to Friday, January 15th, 2038
```

   c. Do you have an intermediate certificate? If so, what is it?

```
Yes, Microsoft Azure TLS Issuing CA 01
```

d. Do you have a root certificate? If so, what is it?

```
Yes, DigiCert Global Root G2
```

e. Does your browser have the root certificate in its root store?

```
Yes
```

f. List one other root CA in your browser's root store.

CN=Amazon Root CA 3,O=Amazon,C=US

Day 3 Questions

Cloud Security Questions

1. What are the similarities and differences between Azure Web Application Gateway and Azure Front Door?

Similarities: Both services use Azure networking technologies such as IP addresses, virtual networks, DNS and user-defined routing rules. - Both services provide secure connections with SSL/TLS. - Both services provide a high-availability solution for web applications.
Differences: Azure Web Application Gateway is focused on Layer 7 (Application Layer) load balancing, while Azure Front Door is focused on Layer 4 (Transport Layer) load balancing. - Azure Web Application Gateway offers more customization options for routing rules, while Azure Front Door provides a more streamlined experience. - Azure Web Application Gateway can be used for more complex scenarios, such as URL-based routing and authentication, while Azure Front Door is optimized for simple scenarios, such as global load balancing. - Azure Web Application Gateway is more expensive than Azure Front Door.

2. A feature of the Web Application Gateway and Front Door is "SSL Offloading." What is SSL offloading? What are its benefits?

> SSL Offloading offloads the encryption and decryption of incoming and outgoing traffic from the web servers, this enhances the performance of the web servers by reducing their processing load and improves the security of the network by providing a layer of encryption and decryption.

3. What OSI layer does a WAF work on?

> A WAF typically works on the application (Layer 7) of the OSI model.

4. Select one of the WAF managed rules (e.g., directory traversal, SQL injection, etc.), and define it.

> SQL injection is a code injection technique that might destroy your database

5. Consider the rule that you selected. Could your website (as it is currently designed) be impacted by this vulnerability if Front Door wasn't enabled? Why or why not?

> Yes it can be impacted even if Front Door is not enabled, an attacker may be able to exploit a directory traversal vulnerability by sending a specially crafted URL to the web application.

6. Hypothetically, say that you create a custom WAF rule to block all traffic from Canada. Does that mean that anyone who resides in Canada would not be able to access your website? Why or why not?

> No, the rule may be bypassed by using a proxy or a virtual private network to hide the true source of the traffic.

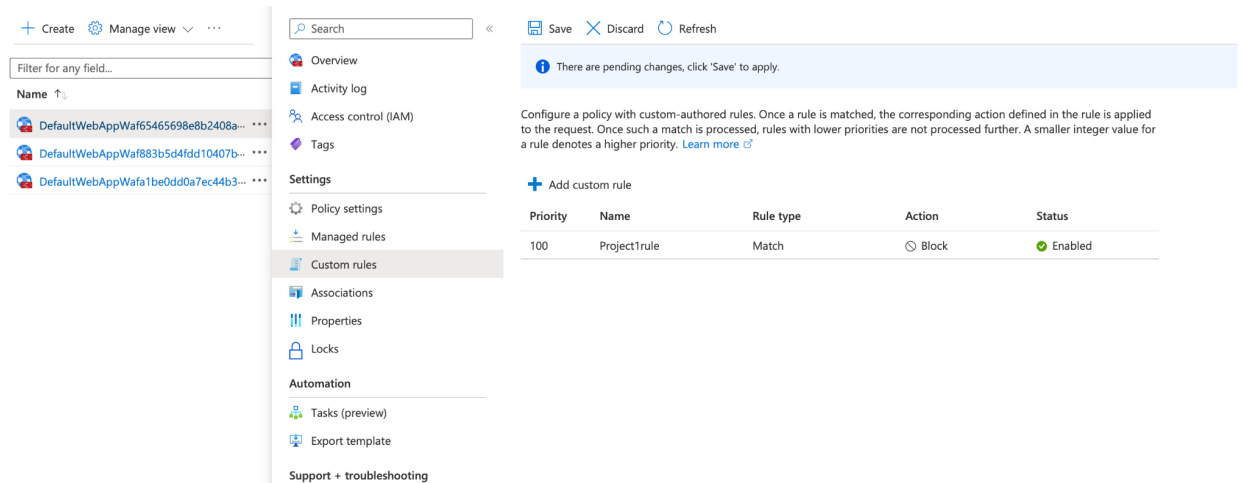7. Include screenshots below to demonstrate that your web app has the following:

   a. Azure Front Door enabled

b. A WAF custom rule

Disclaimer on Future Charges

Please type "**YES**" after one of the following options:

- ***Maintaining website after project conclusion***: *I am aware that I am responsible for any charges that I incur by maintaining my website. I have reviewed the guidance for minimizing costs and monitoring Azure charges.*

- ***Disabling website after project conclusion***: *I am aware that I am responsible for deleting all of my project resources as soon as I have gathered all of my web application screen shots and completed this document.*