Cybersecurity

Project 1 Technical Brief

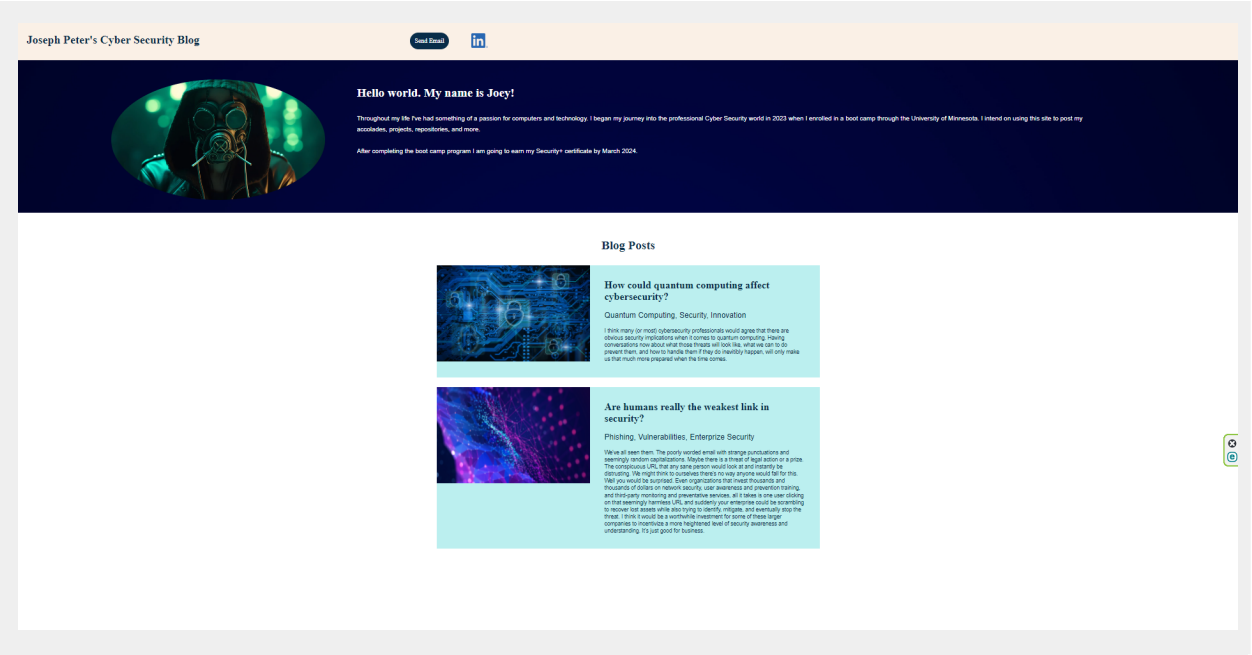
Make a copy of this document before you begin. Place your answers below each question. This completed document will be your deliverable for Project 1. Submit it through Canvas when you're finished with the project at the end of the week.

Your Web Application

Enter the URL for the web application that you created:

```
https://jpeter-security.azurewebsites.net/
```

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



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?

```
jppeter-security
```

Networking Questions

1. What is the IP address of your webpage?

```
20.119.0.39
```

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

```
Tappahannock, Virginia, USA
```

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

```
Server:  UnKnown
Address:  2601:444:101:18e0:2694:cbff:fe95:d123

Non-authoritative answer:
Name:    waws-prod-blu-483-05ad.eastus.cloudapp.azure.com
Address:  20.119.0.39
Aliases:  jpeter-security.azurewebsites.net
          waws-prod-blu-483.sip.azurewebsites.windows.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?

```
We were instructed to use PHP 8.2 which operates on the back-end
```

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

```
Images and styling/spacing rules
```

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

```
This works with the front end (HTML)
```

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

```
Someone who uses cloud services
```

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

```
Limit access to key vault secrets, keys, and certificates
```

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

```
-Keys support multiple key types and algorithms
-Secrets provide secure storage of secrets such as passwords and database
connection strings
-Certificates support certificates built on top of keys and secrets and add
```

```
automated renewal feature
```

Cryptography Questions

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

```
Free to generate and use, suitable for internal/private networks and test
environments
```

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

```
No third-party trust validation, manual trust establishment requires
technical knowledge,
```

3. What is a wildcard certificate?

```
Public key certificate that can be used with multiple subdomains 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 has a major known vulnerability making it susceptible to POODLE
“Padding Oracle on Downgraded Legacy Encryption” which could lead to
information disclosure
```

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 error returned, certificate issued by Microsoft
```

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

```
5/21/2023 to 5/15/2024
```

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

```
Yes, Microsoft Azure TLS Issuing CA 06
```

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.

```
Amazon Root CA 3
```

Day 3 Questions

Cloud Security Questions

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

```
Similarities:

They are both load balancers for HTTP/HTTPS traffic

Differences:

Azure Front Door can distribute requests across regions whereas Application
Gateway can balance requests within a region.

Azure Front Door works with scale units, clusters or stamp units, while
Application Gateway works with VMs, containers or other resources in the
same scale unit
```

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

```
SSL offloading takes care of encryption/decryption processes on a separate device. This is to ensure it does not affect the web server’s performance
```

3. What OSI layer does a WAF work on?

```
Application - Layer 7
```

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

```
99005002 - Web Shell Interaction Attempt (POST)
```

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?

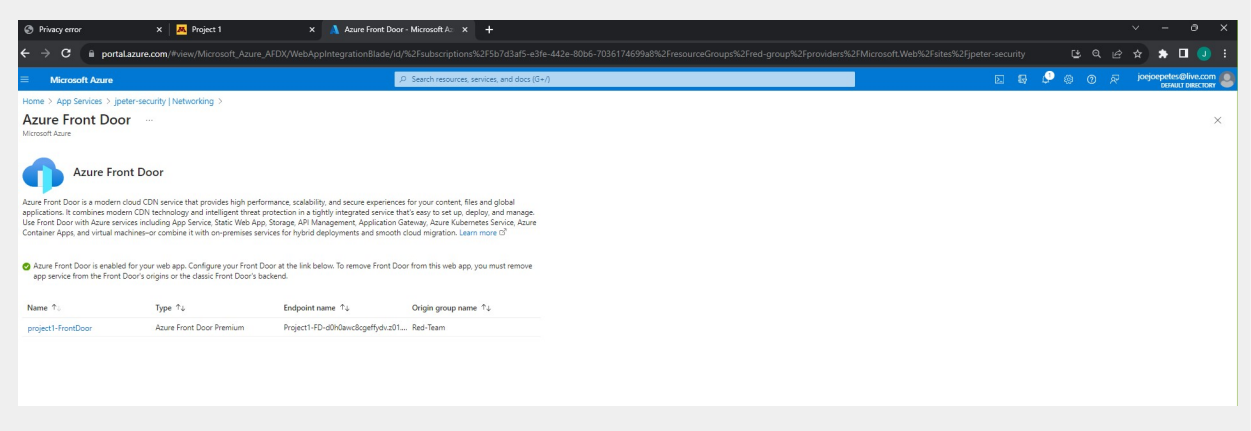
```
Yes because this was not covered by any rules prior to the implementation of the front door
```

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?

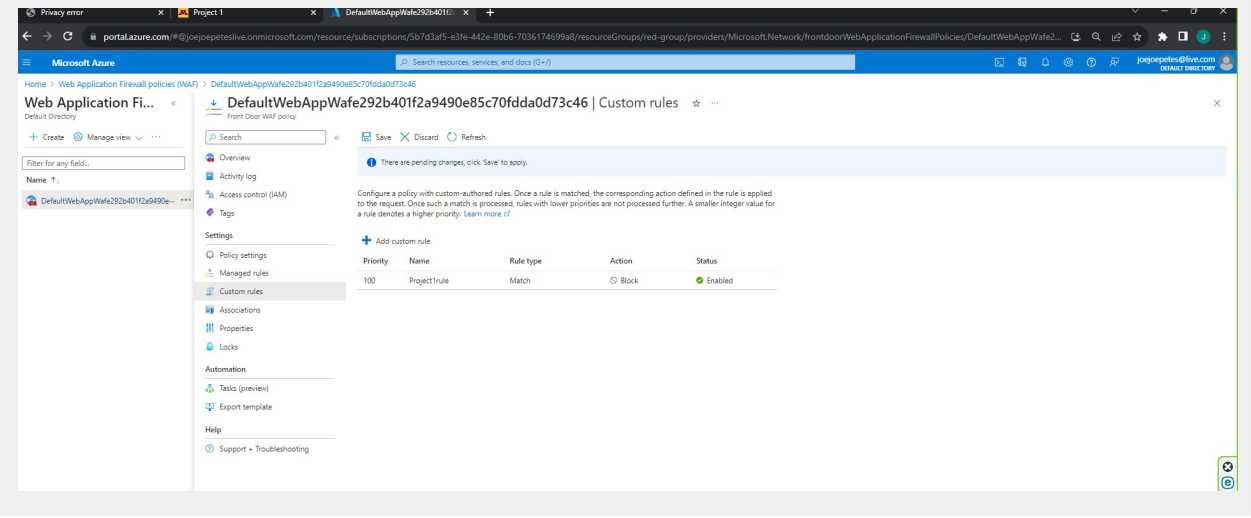
```
No, this only means if the traffic is recognized as coming from Canada it will be blocked. A VPN could easily get around this rule.
```

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.* **YES**

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