Cybersecurity

Project 1 Technical Brief

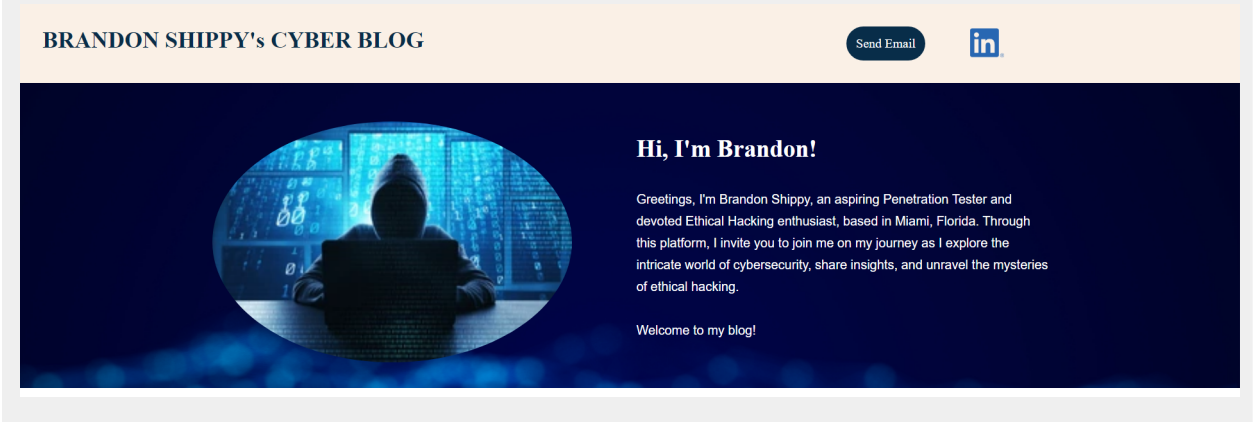
Make a copy of this document before you begin. Place your answers below each question. This completed document will be your deliverable for Project 1. Submit it through Canvas when you're finished with the project at the end of the week.

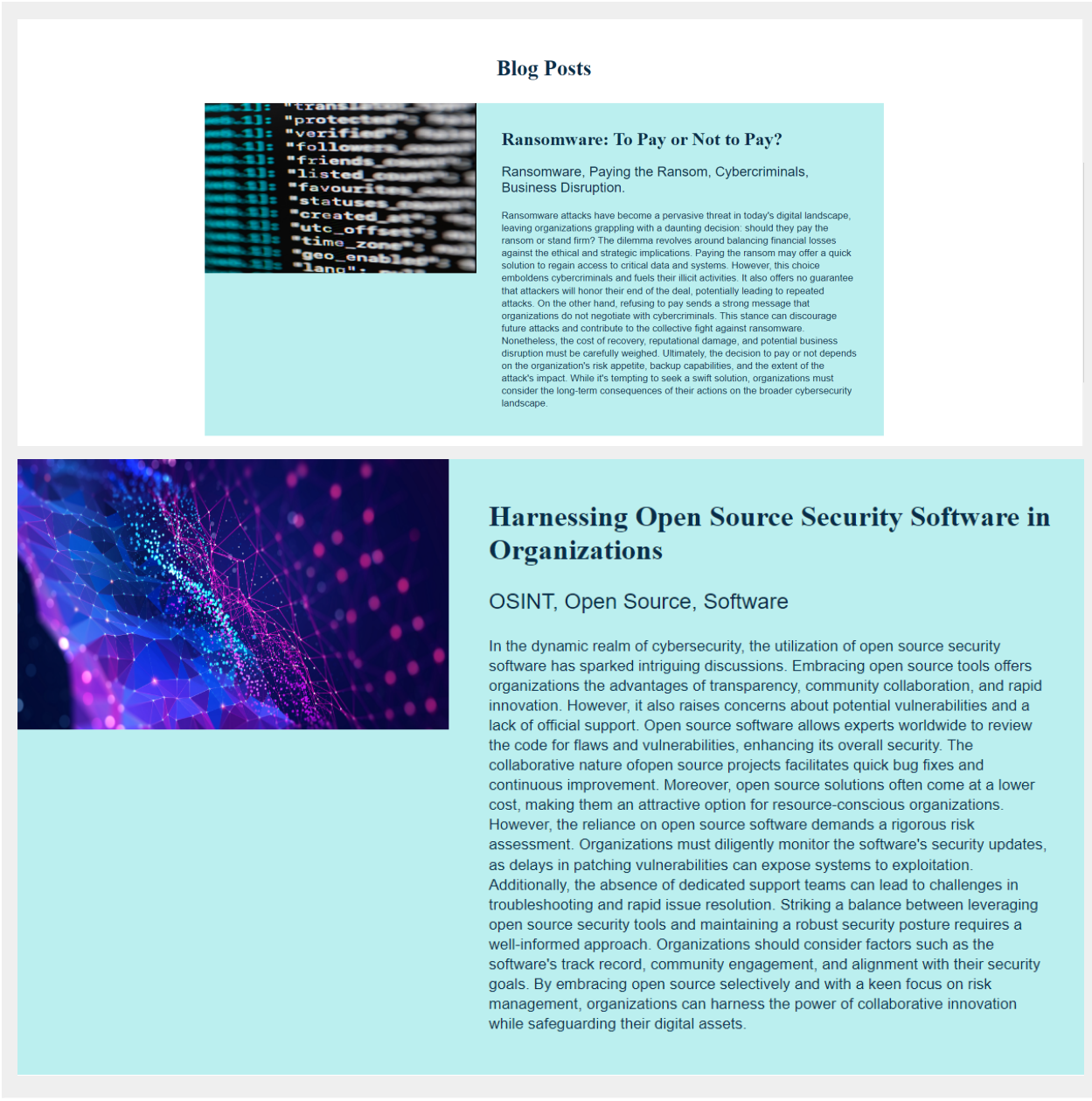
Your Web Application

Enter the URL for the web application that you created:

```
https://brandoncyber.live/
```

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)?

```
Godaddy
```

2. What is your domain name?

```
brandoncyber.live
```

Networking Questions

1. What is the IP address of your webpage?

```
20.90.134.25
```

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

```
London, England, United Kingdom of Great Britain and Northern Ireland
```

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

```
Server:         172.18.192.1
Address:        172.18.192.1#53

Non-authoritative answer:
brandoncyber.live       nameserver = ns55.domaincontrol.com.
brandoncyber.live       nameserver = ns56.domaincontrol.com.
Name:   ns55.domaincontrol.com
Address: 97.74.107.28
Name:   ns56.domaincontrol.com
Address: 173.201.75.28
Name:   ns55.domaincontrol.com
Address: 2603:5:21b2::1c
Name:   ns56.domaincontrol.com
Address: 2603:5:22b2::1c

Authoritative answers can be found from:
```

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?

```
The runtime stack was PHP 8.2, it works on the backend
```

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

```
inside of assets were the different images and styles used on the website
```

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

```
This works with both the frontend and the backend.
```

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

```
A cloud tenant is an individual or organization that uses cloud computing
resources and services from a cloud service provider while maintaining
logical isolation from other users.
```

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

```
An access policy on a key vault is important to control and manage who has
permissions to access and interact with sensitive information.
```

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

```
Within a key vault, keys are cryptographic objects for encryption, secrets
store sensitive data like passwords, and certificates verify identities and
enable secure communications.
```

Cryptography Questions

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

```
There’s No cost, it’s easy to generate, & self-validated
```

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

```
they have no validation from a third-party authority
```

3. What is a wildcard certificate?

```
A wildcard certificate is a type of SSL/TLS certificate that secures
multiple subdomains of a single domain using a wildcard character in the
domain name.
```

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 not provided by Azure for binding certificates to websites
because it has known security vulnerabilities, including the POODLE attack
```

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?

```
It isn’t returning an error because the certificate is a trusted CA.
```

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

```
8/16/23, 8:00:00 PM EDT - 2/17/24, 6:59:59 PM EST
```

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

```
yes, GeoTrust Global TLS RSA 4096 SHA256 2022 CA1
```

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

```
DigiCert Global Root CA
```

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=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE
```

Day 3 Questions

Cloud Security Questions

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

```
The Web Application Gateway is more regional and is best suited to protect a
web application in a single region in your cloud.
The Azure Front Door is more global and is better suited when you have a
variety of regions in
a cloud environment.
```

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

```
SSL offloading is the process of decrypting SSL/TLS-encrypted traffic at a
load balancer or gateway before forwarding it to backend servers, providing
benefits such as improved performance, centralized certificate management,
and enhanced security features.
```

3. What OSI layer does a WAF work on?

```
Application layer
```

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

```
SQL Injection (SQLi) is a web security vulnerability where attackers exploit poorly sanitized user inputs to inject malicious SQL queries into a web application's database, potentially leading to unauthorized access, data manipulation, or disclosure of sensitive information.
```

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?

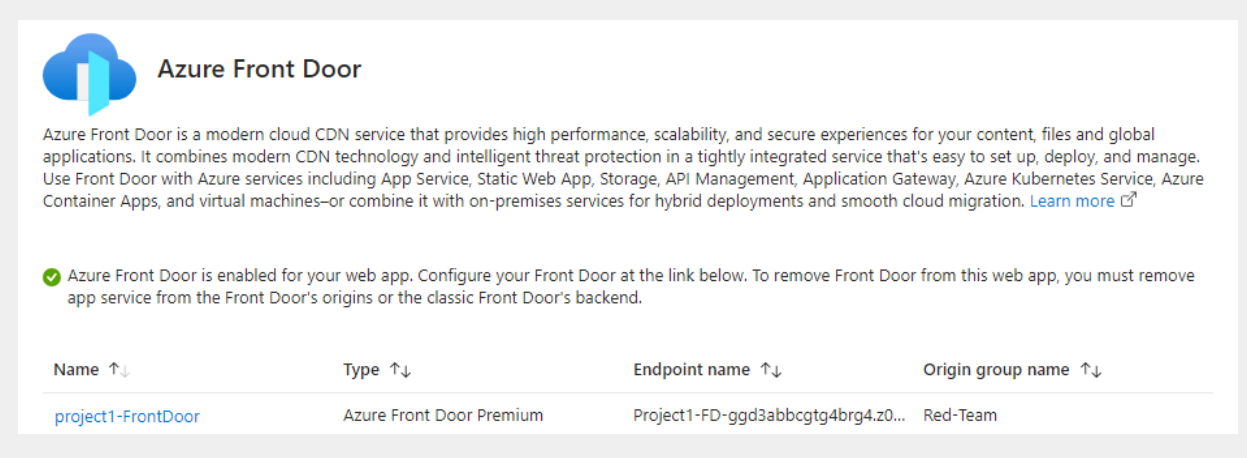
```
Even if Front Door was on/off it wouldn't matter, as my website doesn't accept user input
```

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?

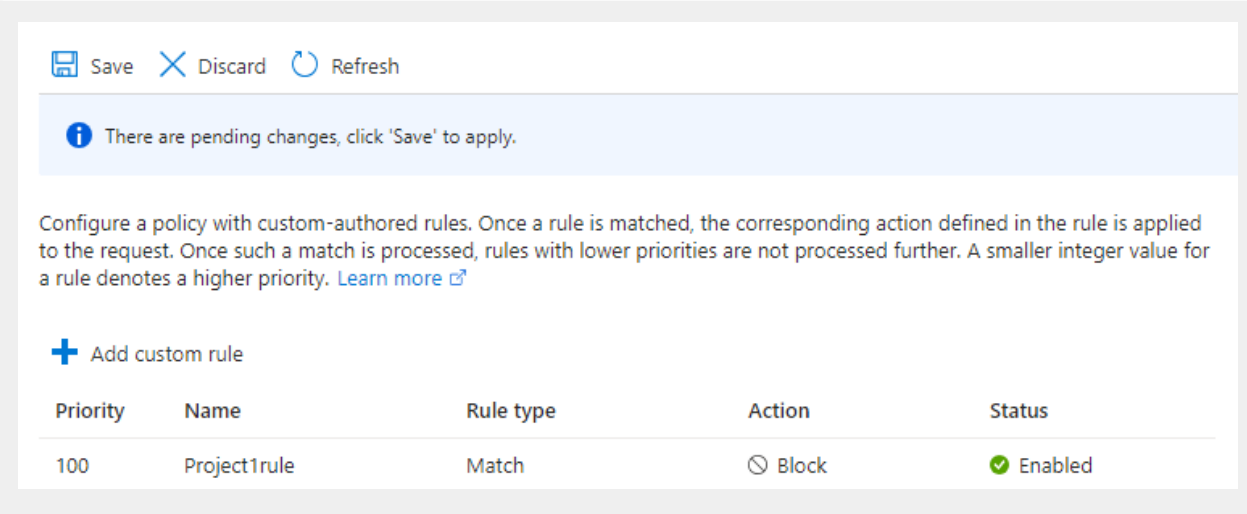
```
No, that does not mean anyone in Canada can't access my website, as they can use a vpn to work around this.
```

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. Yes*

- ***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.*