Cybersecurity

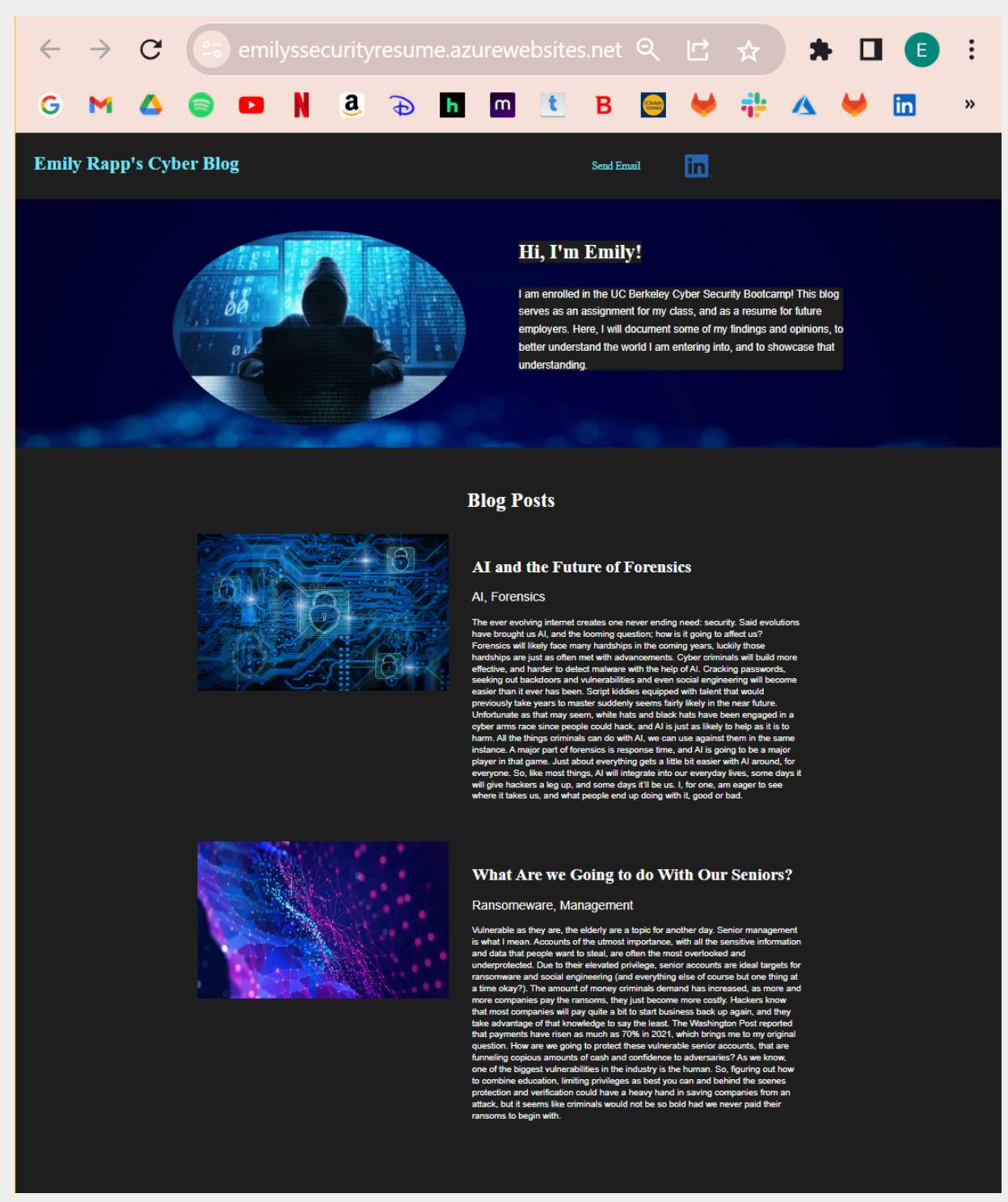
Project 1 Technical Brief

Your Web Application

Enter the URL for the web application that you created:

```
[emilyssecurityresume.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?

```
[emilyssecurityresume]
```

Networking Questions

1. What is the IP address of your webpage?

```
[20.206.176.5]
```

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

```
[Brazil South]
```

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

```
emily@Emily MINGW64 ~
$ nslookup emilyssecurityresume.azurewebsites.net
Server:  cdns01.comcast.net
Address:  2001:558:feed::1

Non-authoritative answer:
Name:    waws-prod-cq1-049-6316.brazilsouth.cloudapp.azure.com
Address:  20.206.176.5
Aliases:  emilyssecurityresume.azurewebsites.net
          waws-prod-cq1-049.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?

```
[PHP 8.2, backend]
```

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

```
[Assets directory contains css and images needed to design the website]
```

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

```
[Frontend, css is the build of the website, fonts, colors, sizes etc, images are the photos used on the website]
```

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

```
[A cloud user/client]
```

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

```
[With any sensitive information, operations should be limited as much as possible to avoid leaked data or backdoor access. Implementing access policy on a key vault limits the amount of users with access to it.]
```

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

```
[Keys: Cryptographic keys used to encrypt information
Secrets: Private information such as passwords, the information being encrypted
```

```
Certificates: Similar to secrets, used to verify an application identity]
```

Cryptography Questions

th

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

```
[Self-signed certs are very easy to customize]
```

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

```
[They are considered medium risk vulnerabilities, and do not provide trust value.]
```

3. What is a wildcard certificate?

```
[Used to secure multiple domains/subdomains, they include a wildcard character]
```

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.

```
[The POODLE attack allows someone to see encrypted information, Microsoft disabled it in order to protect its users.]
```

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, I used the free domain, which comes with an SSL already]
```

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

```
[03/09/2023-03/03/2024]
```

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

```
[Bitdefender Personal CA Net-Defender]
```

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

```
[NA]
```

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?

```
[Both are used to secure a web app, they reside in front of the application to protect it. Web application gateway is best used to protect a web app in a single region, while the front door is better suited to a variety of regions.]
```

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 the weight of encryption and decryption off the processor by sending it to its own separate server. The benefits of this would of course be faster, easier processing.]
```

3. What OSI layer does a WAF work on?

```
[Layer 7]
```

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

```
[SQL Injection: This rule looks for malicious SQL code ]
```

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?

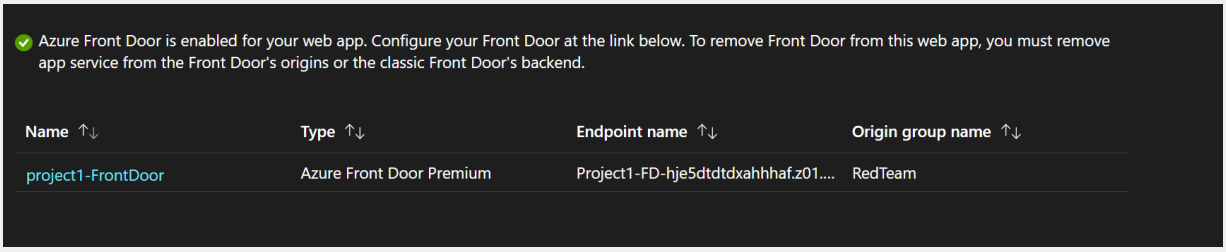
```
[Yes, being a very common hacking technique, often designed to destroy a
website, not having protection from it, in this case via Front Door, could
very well affect the integrity of the website.]
```

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 works by blocking IP addresses, a VPN could be used to bypass
the rule, alternatively, someone in a different country using a VPN with
their location in Canada could not gain access to the website. In theory,
Canadian IP addresses are blocked, but in practice it could hinder people
not in Canada, and is easy enough to get around in you were in Canada.]
```

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

    a. Azure Front Door enabled



    b. A WAF custom rule