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://elisecurityresume.azurewebsites.net/
```

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

Blog Posts

Apple GPT

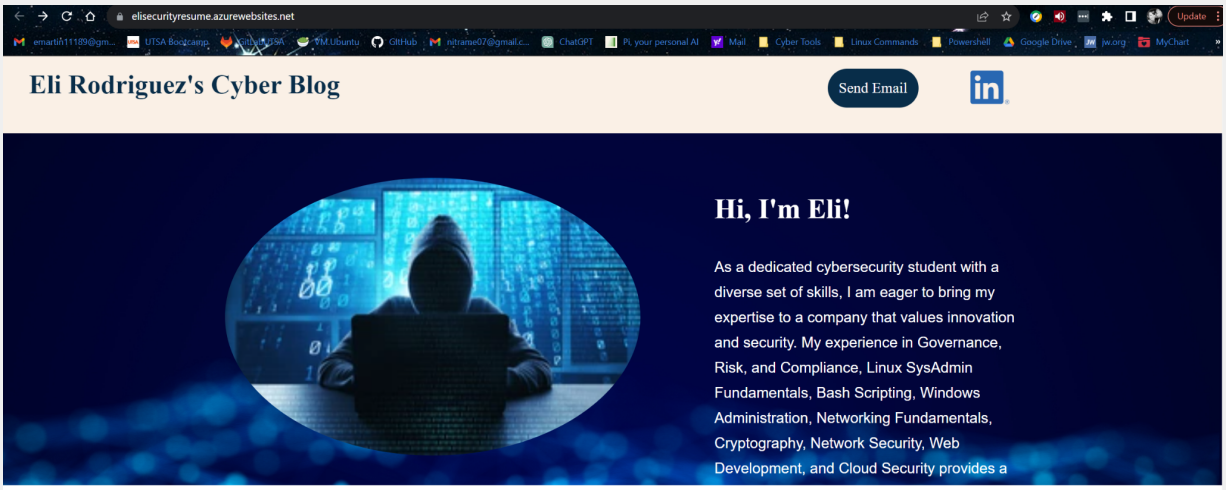
GPT

Rumors that Apple is working on is own AI product, with the popularity that AI tools have gotten. There's is still no launch date but know that its in the works!

The Ray-Ban Meta smart glasses

Smart Glasses

Did Ray-ban nail the look? Meta smart glasses show promesing sleek designs that makes you want to go and grab a pair! Check them out for yourself. They come in 150 style variations accross two two frames styles, seven colors, and multiple lens options. Camera has been upgraded to a 12MP. Photo Resolution is 3024x4032 pixels, and videos are now 1080P at 30frames per second. 5mics will make your calls a lot easier.AI support live stream to Facebook or Instagram. Definately a turning point for smart glasses.



Blog Posts

Apple GPT

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Rumors that Apple is working on is own AI product, with the popularity that AI tools have gotten. There's is still no launch date but know that its in the works!

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?

```
elisecurityresume.azurewebsites.net
```

Networking Questions

1. What is the IP address of your webpage?

```
20.118.138.129
```

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

```
Phoenix, Arizona, United States
```

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

```
$ nslookup -type=NS 20.118.138.129
*** dsldevice.attlocal.net can't find 20.118.138.129: Non-existent domain
Server:  dsldevice.attlocal.net
Address:  192.168.1.254
```

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, Back end
```

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

```
root@69ec5bcfd6fe:/var/www/html/assets# ls
css  images
```

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

```
Back end
```

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

```
the customer or user of the cloud services.
```

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

```
Properly configured access policies are essential for protecting sensitive
data and preventing unauthorized access to cryptographic materials.
```

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

```
Keys are used for cryptographic operations and data protection.
Secrets are used to store arbitrary sensitive data, such as passwords and
connection strings.
Certificates are used to secure communications and verify the identity of
entities in a network.
The choice of whether to use keys, secrets, or certificates depends on the
specific security requirements of your applications and services.
```

Cryptography Questions

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

```
self-signed certificates have their advantages in terms of cost and speed of deployment,providing the same level of encryption as CA-signed certificates, where there is no need to establish trust with external entities.
```

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

```
they are not a replacement for CA-signed certificates when trust, security, and identity verification are critical, particularly in public-facing and production environments. Self-signed certificates are best reserved for internal, development, and testing scenarios where the need for CA verification is minimal.
```

3. What is a wildcard certificate?

```
A wildcard certificate is a type of SSL/TLS certificate that is designed to secure multiple subdomains of a single domain with a single certificate. Wildcard certificates are distinguished by the use of an asterisk (*) as a placeholder in the domain name, which allows them to cover all subdomains under a specified level of the 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.

```
Due to Security Vulnerabilities,its Obsolete and Deprecated, TLS Successor makes them the preferred choice, also due to Regulatory Compliance, and is not considered a best security practice in the modern internet landscape.
```

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 in my browser. The certificate came from a trusted CA.
```

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

```
Not Before 3/9/23, 9:05:55 PM CST Not After 3/3/24, 9:05:55 PM CST
```

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

```
yes
```

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=AffirmTrust Networking,O=AffirmTrust,C=US
```

Day 3 Questions

Cloud Security Questions

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

```
Both reside in front of your web application
in order to protect it. They work on the Application Layer (7)
of the OSI model. Their primary solution is a load balancer.
They can incorporate a web application firewall (WAF) to protect against web
vulnerability attacks. They have additional features such as URL path-based
routing and SSL/TLS termination.
```

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 a process in which the SSL/TLS encryption and decryption tasks are offloaded from a web server or application server and instead handled by a dedicated device or component, such as a Web Application Gateway or Azure Front Door. Some benefits are: Improved Performance by offloading these tasks, Scalability, you can handle a larger number of SSL connections without overloading your web servers. Centralized SSL Management, reducing the complexity of certificate management on individual web servers. Security, the external traffic is decrypted at the offloading device, but internal traffic remains encrypted. Content Inspection, it can help detect and mitigate threats or load balance traffic more efficiently.
```

3. What OSI layer does a WAF work on?

```
the Application Layer, which is Layer 7
```

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

```
SQL Injection Managed Rule:SQL Injection is a type of cyber attack in which an attacker manipulates the input data to a web application in a way that allows them to execute arbitrary SQL queries on the application's database. The goal of this attack is to gain unauthorized access to the database, extract, modify, or delete data, and potentially take control of the application.
```

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?

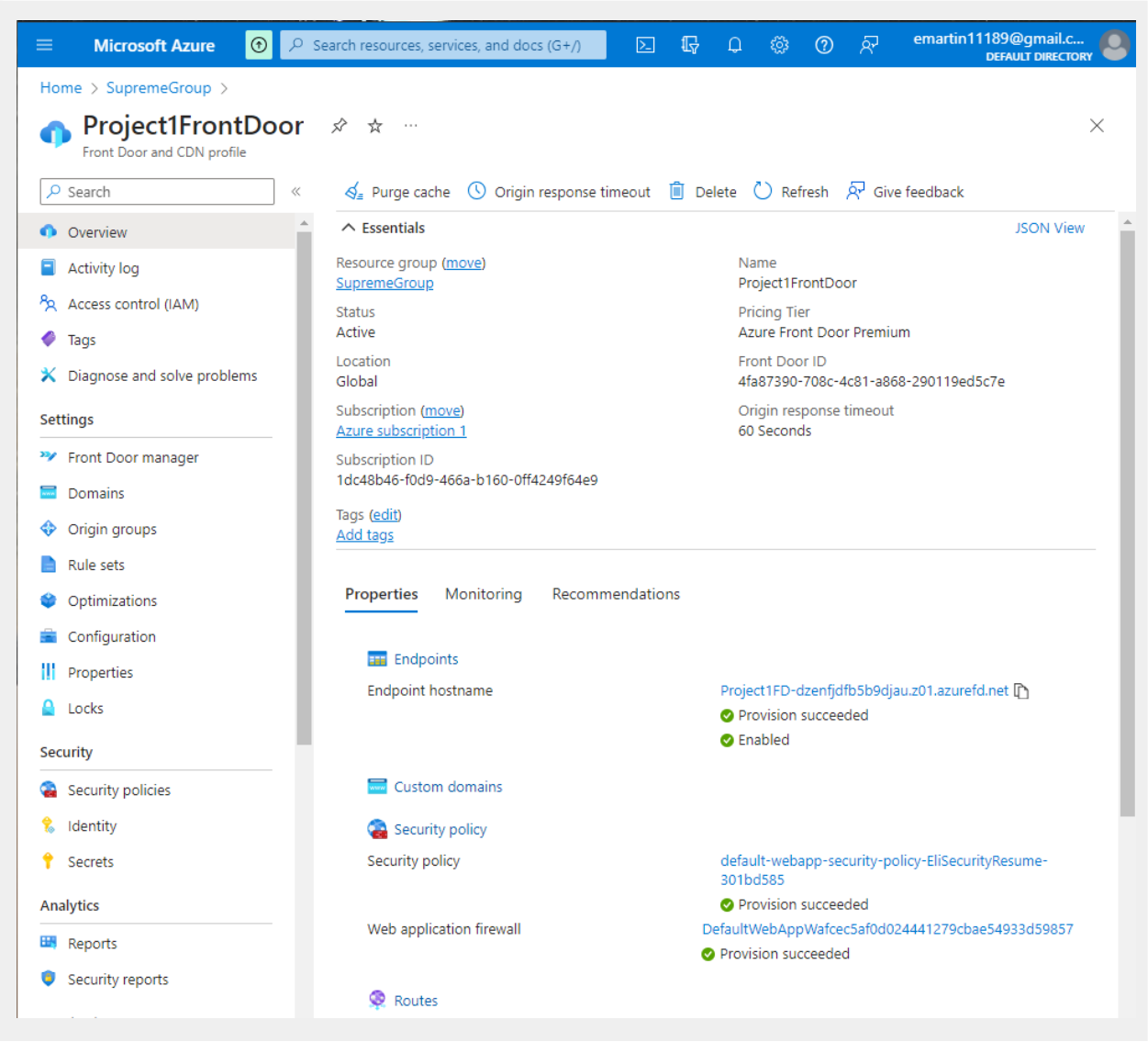
```
No, there's no user input login field.
```

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?

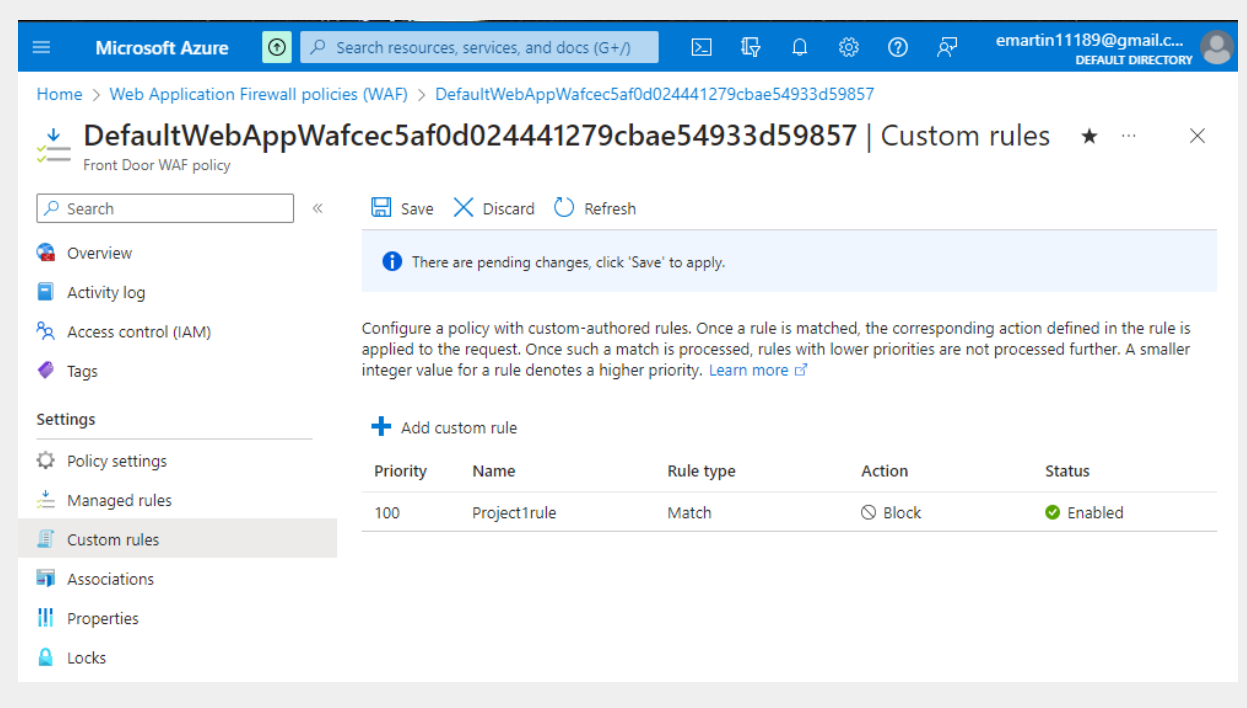
```
Creating a custom Web Application Firewall rule to block all traffic from Canada would indeed prevent most, if not all, visitors located in Canada from accessing your website. Due to: IP Address Filtering, Geolocation Data, and Block Access.
```

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.*