Cybersecurity

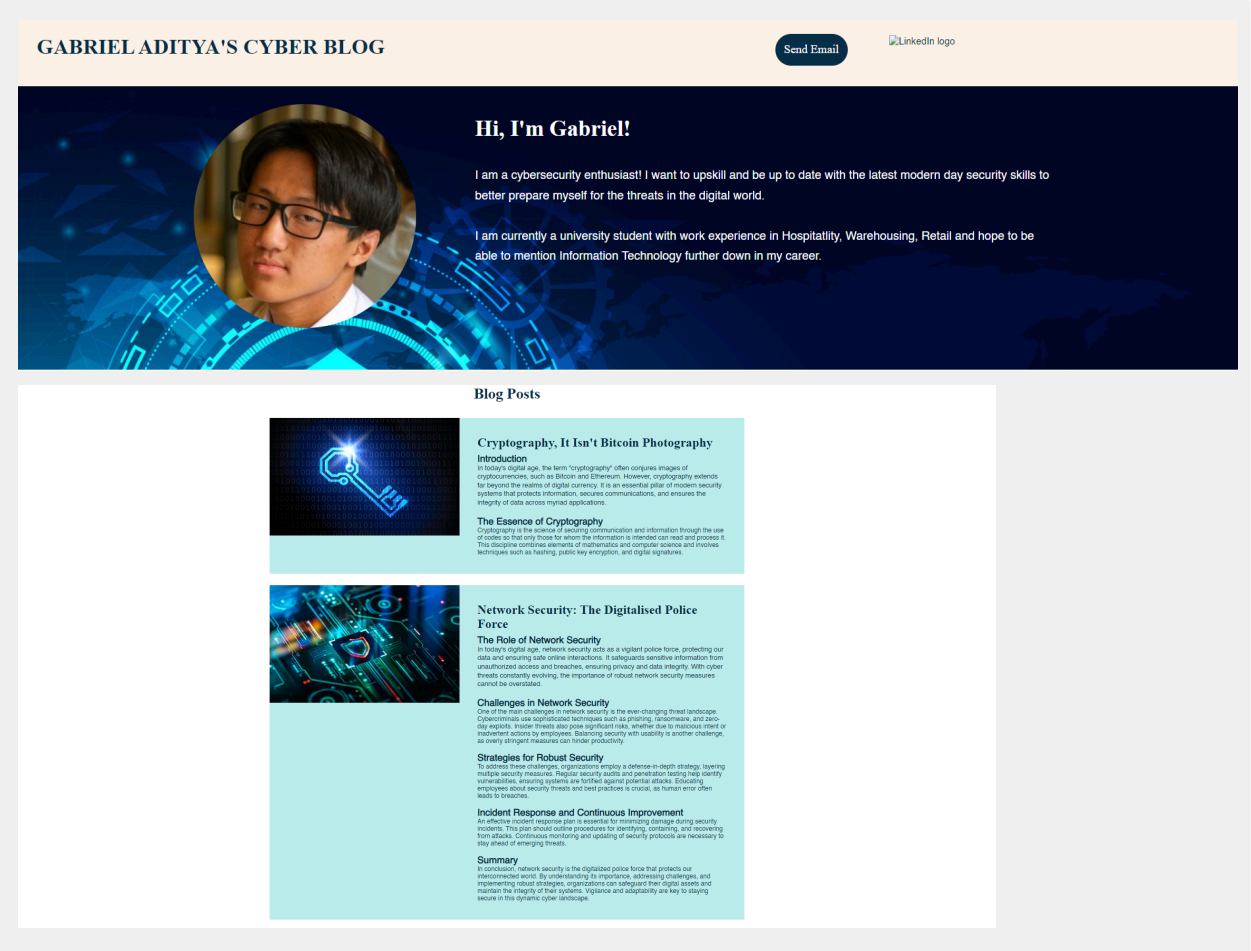
Project 1 Technical Brief

Your Web Application

Enter the URL for the web application that you created:

```
https://gadisecurityresume.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?

```
gadisecurityresume.azurewebsites.net
```

Networking Questions

1. What is the IP address of your webpage?

```
20.211.64.16
```

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

```
Australia East
```

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

```
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?

```
PHP was selected and it is a back-end platform that helps construct what is
seen in the front-end.
```

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

```
Inside the assets directory are ‘css’ and ‘images’ folders respectively
```

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

```
These directories aid with frontend as CSS helps improves the User Interface
of the application and images also are visually presented on the app as well
```

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

```
A cloud tenant is a tenant dedicated instance of cloud services and
resources that belongs to a specific organization or customer.
```

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

```
It defines who has permissions to perform operations on the keys, secrets
and certificates stored within the vault. Only authorized users should be
able to access or manage this sensitive information to protect from
potential security breaches.
```

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

```
Keys are used for encryption, decryption, and signing operations.

Secrets are pivotal pieces of data like passwords, connection strings, or
API keys

Certificates are used to establish secure connections, typically for SSL/TLS
```

Cryptography Questions

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

```
- It is free and means the customer or organization does not have to purchase one from a certificate authority
- The issuer has complete control over the creation of the certificate and customize it to its needs
- They can be generated quickly without the need for third-party involvement
```

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

```
- Self-signed certificates are not trusted by default in web browsers
- They do not provide the same level of assurance as other certificates issued by trusted certificate authority
- They require manual installation on each device or application for an organization or customer
```

3. What is a wildcard certificate?

```
A type of digital certificate that can be used to secure a primary domain and its unlimited subdomains
```

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 considered obsolete and insecure. It is vulnerable to several security flaws, attackers would be able to decrypt secure communications
```

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?

```
Azure has already provided a certificate, I was only able to analyze a mock self-signed certificate.
```

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

```
Wednesday, 13 March 2024 to Saturday, 8 March 2025
```

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

```
Microsoft Azure RSA TLS Issuing CA 07
```

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

```
DigiCert Global Root G2
```

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

```
Root certificate is in its root store which is why the SSL certificate is
trusted and does not produce any errors.
```

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

```
Entrust
```

Day 3 Questions

Cloud Security Questions

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

```
Similarities:
   ● Load Balancing: Both provide a way on distributing traffic efficiently
   ● WAF: Both services offer integrated Web Application Firewall
     capabilities against web vulnerabilities
   ● Traffic Management: Both manage and optimize web traffic
Differences:
   ● Scope and Usage: Azure Web Application Gateway is primarily designed
     for managing and optimizing traffic in the azure region, whereas Azure
     Front Door does this in multiple regions
   ● Optimisation: Azure Front Door offers global routing and further
     capabilities
```

2. What is SSL offloading? What are its benefits?

```
The process of decrypting SSL/TLS traffic on a service instead of the web server hosting the web application
```

3. What OSI layer does a WAF work on?

```
Application
```

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

```
SQL Injection: A vulnerability where attacker executes malicious code from the user's inputs that contains SQL commands to access or manipulate the 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?

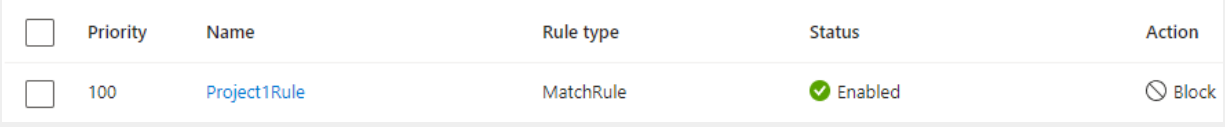
```
My website will not be vulnerable because there are not any input fields on my website so SQL injection is not possible.
```

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?

```
Nope
    • Canadians can use VPNs to bypass this
    • Geolocation accuracy may not always be accurate
```

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

    a. 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.*