Cybersecurity

Project 1 Technical Brief

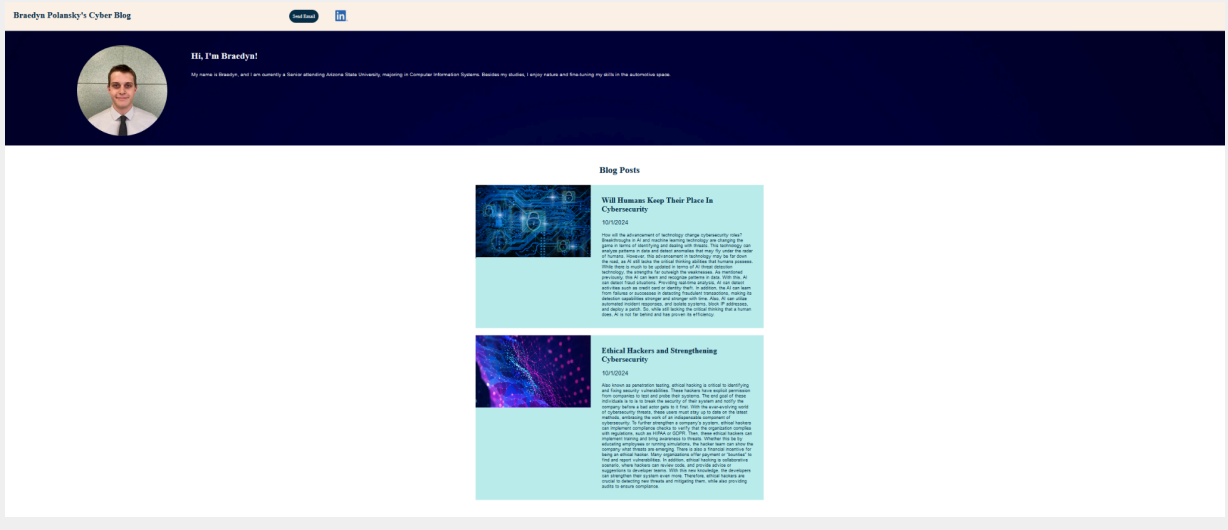
Make a copy of this document before you begin. Place your answers below each question. This completed document will be your deliverable for Project 1. Submit it through Canvas when you're finished with the project at the end of the week.

Your Web Application

Enter the URL for the web application that you created:

```
https://braedynpolanskyproject1.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
```

2. What is your domain name?

```
braedynpolanskyproject1.azurewebsites.net
```

Networking Questions

1. What is the IP address of your webpage?

```
20.211.64.27
```

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

```
Sydney, Australia
```

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

```
This shows the server and the server address of the domain.
```

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. This works on the back end.
```

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

```
There is a css folder and an images folder.
```

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

```
Front-End.
```

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

```
A cloud tenant is a user that subscribes to use a service in cloud
computing.
```

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

```
An access policy can control what actions certain users or organizations can
perform.
```

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

```
Keys are cryptographic keys that encrypt data for a service.

Secrets are used for sensitive information, such as connection strings.

Certificates certify that a web application is secure.
```

Cryptography Questions

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

```
  1. Savings in cost, as SSCs are free.
```

```
   2. Can be deployed immediately without waiting for CA verification.
   3. Full control over the certificate and its keys.
   4. Testing and development opportunities.
```

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

```
   1. SSCs are not verified by a CA, and web browsers won't trust them.
   2. SSCs are manually sent and trusted by each client, instead of
      automatically distributed by a CA.
   3. Using self-signed certificates can lead to non-compliance.
```

3. What is a wildcard certificate?

```
A wildcard certificate secures multiple subdomains.This allows you to use
one certificate for all the subdomains under a domain. This simplifies the
deployment of certificates.
```

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 a few reasons:
   1. The POODLE attack, where SSL 3.0 was exploited to decrypt secure
      messages.
   2. TLS provides better and more advanced security.
   3. Regulatory entities deemed SSL 3.0 unworthy of continuation, and
      favored TLS
```

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, because it has been secured with an app service certificate.
```

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

```
The certificate lasts from 9/23/2024 @ 7:17:12PM until 9/23/2025 @ 7:17:12PM
```

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

```
No.
```

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

```
Yes, my self-signed certificate is the root.
```

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.

```
Microsoft Azure RSA TLS Issuing CA 08
```

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
-Security, such as SSL/TLS, WAF, and DDoS protection.
-Routing

Differences:
-Gateway is only designed to work with a single region, while Front Door is
global.
```

```
-Gateway provides autoscaling for internet traffic load.
-Gateway provides deeper integration of Azure services.
```

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

```
SSL offloading is when tasks are moved from the web server to load balancer.
This reduces the processing burden.

Benefits:
-Offloading frees up resources, increasing efficiency.
-Reduced latency
-Scalability
-Optimization
```

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 detects and blocks malicious code that can be injected into
sections of an 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?

```
Yes. Front Door provides services, such as pattern matching, input
validation, and custom rules. If disabled, these services are not available,
and the website is vulnerable.
```

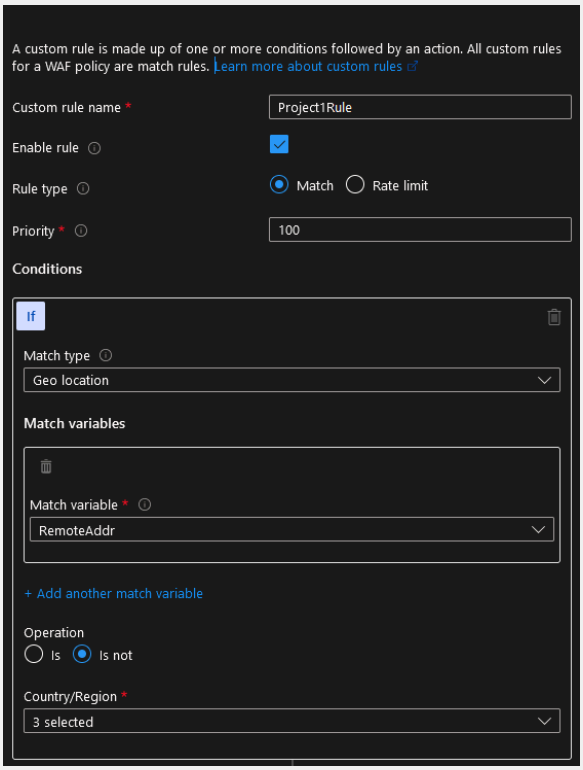
6. Hypothetically, say that you create a custom WAF rule to block all traffic from Canada. Does that mean that anyone who resides in Canada would not be able to access your website? Why or why not?

```
For the most part, blocking Canadian traffic would block ALL Canadian users
```

```
UNLESS the user utilizes a VPN or proxy.
```

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.*

- ***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.*