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

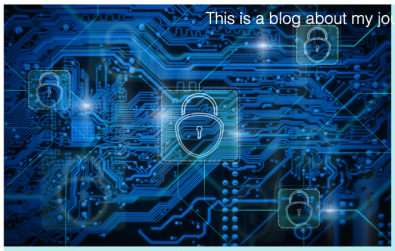
Enter the URL for the web application that you created:

```
https://fardowsasecurityblog.azurewebsites.net/
```

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

fardowsasecurityblog.azurewebsites.net

Blog Posts



Cryptography

Add Keywords

The study of secure communication methods, such as encryption, that keep message contents private to the sender and intended recipient is known as cryptography. It is closely connected to encryption, which is the process of turning plain text in to ciphertext before sending it and then changing it back when it is received. Additionally, employing methods like microdots or merging, cryptography also covers the obscuring of information in photographs. The most common use of cryptography is to encrypt and decrypt email and other plain-text messages while sending electronic data. The symmetric or "secret key" mechanism is the most straightforward approach. All messages sent by users should be encrypted, ideally with a sort of public key encryption. Encrypting important or delicate files is another smart move.

Networking

Add Keywords

Networking, often referred to as computer networking, is the transfer and exchange of data between information system nodes. The management, upkeep, and operation of the network infrastructure, software, and policies are included in addition to the design, building, and use of the network itself. Computer networking allows for the connection of endpoints and devices to one another on LANs as well as to larger networks like the internet or private wide area networks (WAN). For service providers, enterprises, and customers all across the world, this function is

fardowsasecurityblog.azurewebsites.net

Fardowsa Ahmed

Send Email

Blog Posts

Cryptography

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?

Networking Questions

1. What is the IP address of your webpage?

```
20.118.40.5
```

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

```
Central US
```

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

```
waws-prod-dm1-291.sip.azurewebsites.windows.net
(waws-prod-dm1-291-10e4.centralus.cloudapp.azure.com.
```

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?

```
60 seconds
```

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

```
Usernames and passwords
```

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?

```
A tenant is a buyer of cloud computing resources. This could apply to a
single user, a group of users, an entire department, or an entire business.
```

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

```
Depending on the Key Vault access policy, a certain security principal, such
as a user, application, or user group, may or may not be able to carry out
specific activities on Key Vault secrets, keys, and certificates.
```

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

```
Keys allows the usage of software- and HSM-protected keys and supports a
variety of key types and algorithms.
Secrets offers safe storage for sensitive information like passwords and
database connection details. See About secrets for further details.
Certificates offer an automated renewal functionality and are constructed on
top of keys and secrets.
```

Cryptography Questions

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

```
Self-signed certificates are free. They are appropriate for environments
used for development and testing as well as internal network websites. The
```

```
same ciphers used by commercial SSL certificates are utilized for data
encryption and decryption.
```

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

```
The data delivered from a browser to the server using an SSL certificate
that was self-signed is not sufficiently protected. A self-signed SSL's
owner confirms its identity, unlike certificates provided by trustworthy
certifying agencies.
```

3. What is a wildcard certificate?

```
A single certificate that has the wildcard character * in the domain name
field is known as a wildcard certificate. As a result, the certificate can
protect numerous hosts that are part of the same base 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.

```
Azure Websites has disabled SSL 3.0 for all websites by default. To
safeguard their clients from the vulnerability
```

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, SSL certificate is valid
```

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

```
Issued On
Monday, March 14, 2022 at 11:39:55 AM
Expires On
Thursday, March 9, 2023 at 10:39:55 AM
```

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

```
Yes, *.azurewebsites.net
```

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

```
Yes, Microsoft Azure TLS
```

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.

```
DigiCert Global Root G2
```

Day 3 Questions

Cloud Security Questions

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

```
The main difference between Front Door and Application Gateway is that Front Door is a non-regional service, whereas Application Gateway is a regional service. Both Front Door and Application Gateway are layer 7 (HTTP/HTTPS) load balancers.
```

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

```
To relieve a web server of the burden of data decryption, SSL offloading is the process of eliminating the SSL-based encryption from incoming traffic. HTTP requests and transmission on the internet are secure thanks to the Security Socket Layer (SSL) protocol.
```

3. What OSI layer does a WAF work on?

protocol layer 7 defense

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

```
A code injection process called SQL injection has the potential to wipe out your database. One of the most popular web hacking methods is SQL injection. SQL injection is the practice of inserting malicious code through web page input into SQL statements.
```

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?

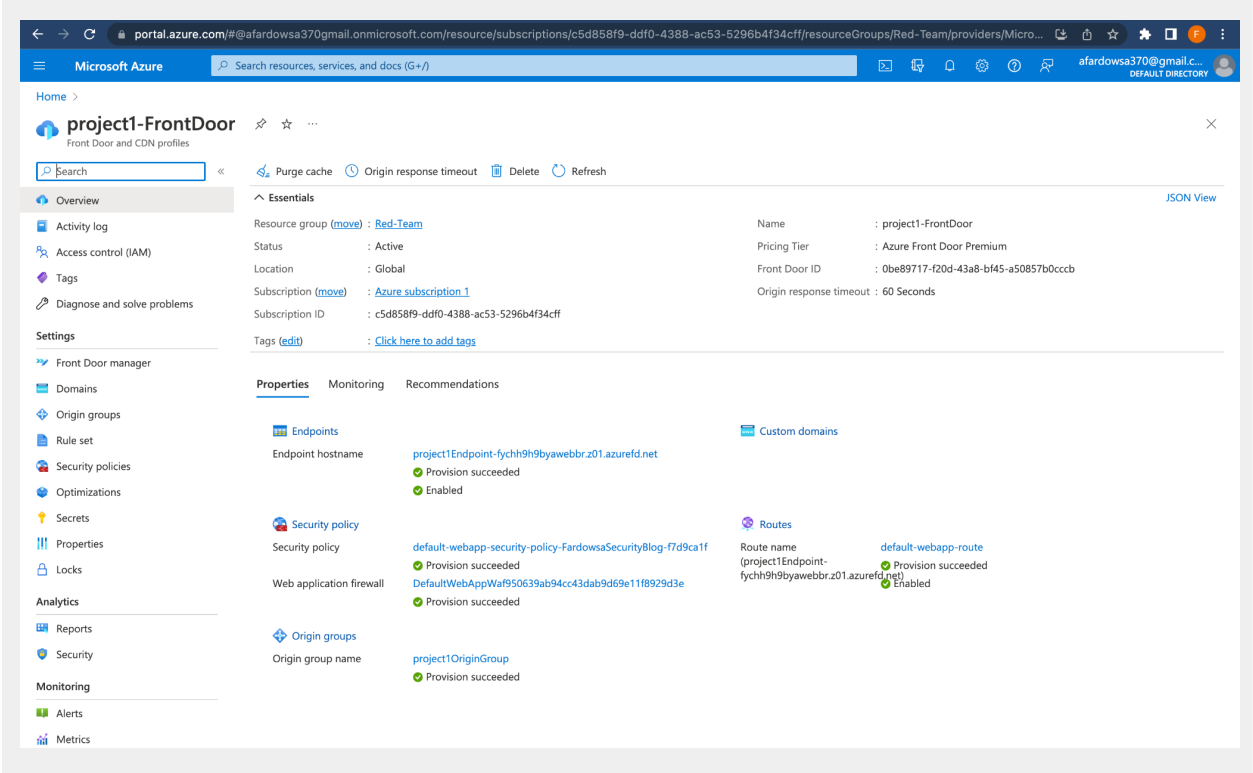
```
Yes because the front door protects it from those vulnerabilities.
```

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?

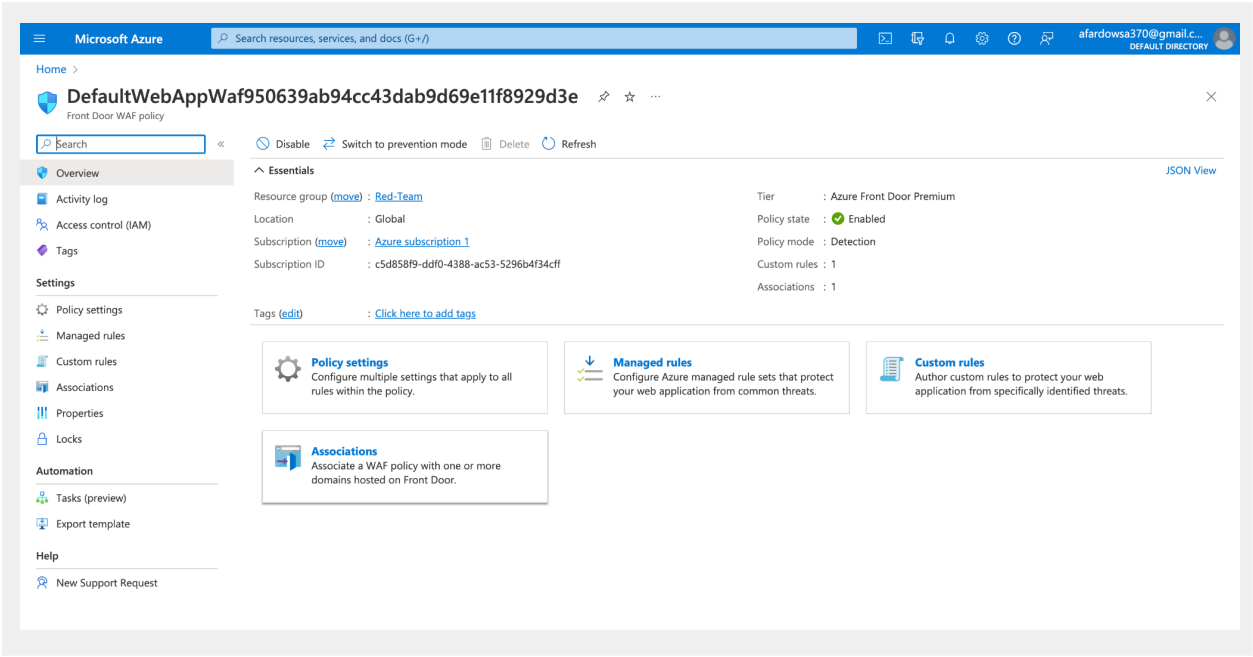
```
No, I would have to put a specific geomatch custom rule to stop anyone from Canada to have access to this website.
```

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.*