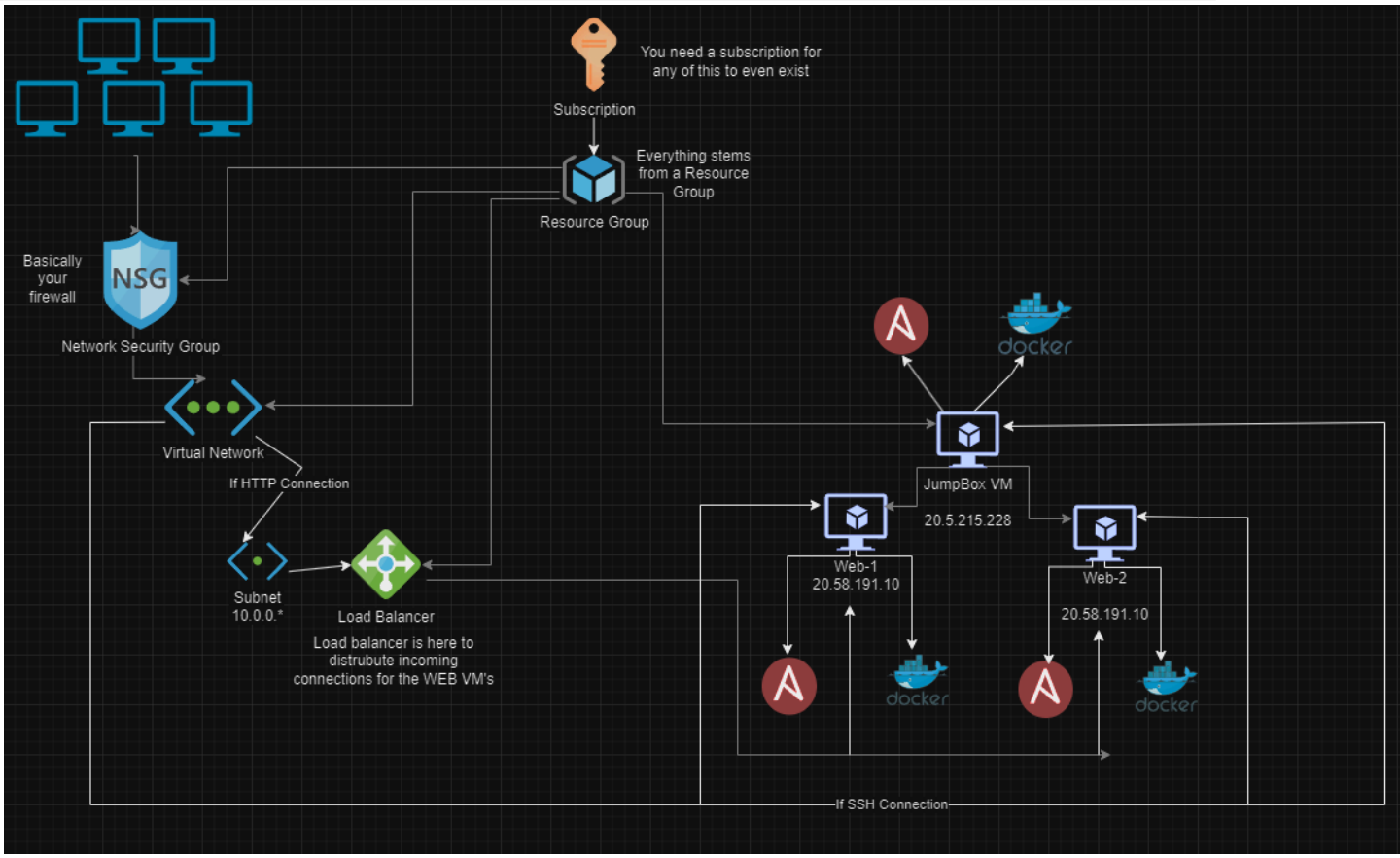
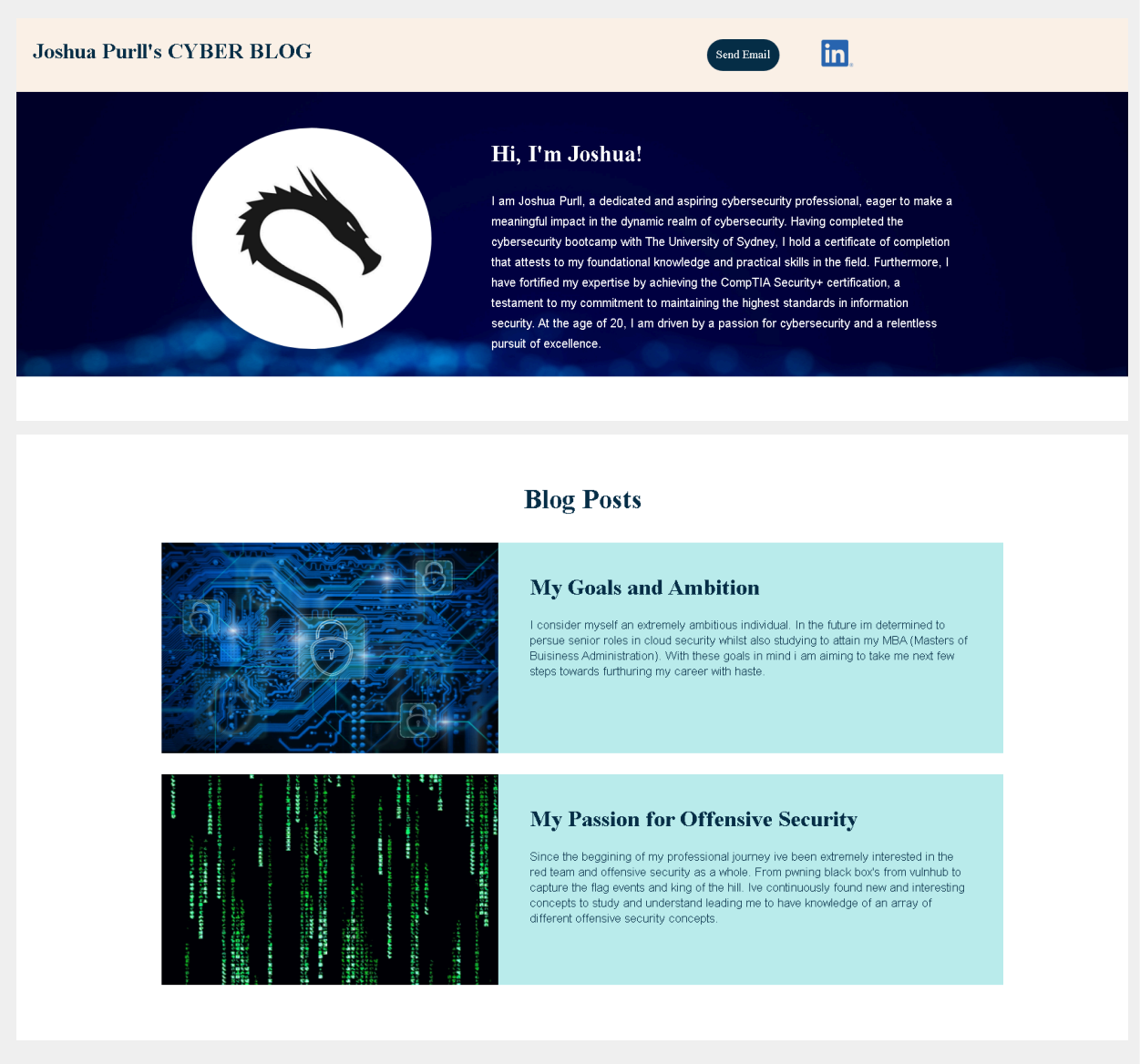
Cybersecurity

Project 1

Web Application

```
https://joshsec.azurewebsites.net
```





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?

```
joshsec.azurewebsites.net
```

Networking Questions

1. What is the IP address of your webpage?

```
20.211.64.22
```

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

```
Sydney, NSW, Australia
```

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

```
Dns Timeout
```

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?

```
A runtime stack typically refers to the combination of technologies and
frameworks used to run a web application. This includes both the front end
(client-side) and the back end (server-side) components
```

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

```
Contains the Styles and .css files that are used for specifying things such
as font size.
```

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?

```
Cloud tenants are usually an individual or organization that makes use of
cloud services to run their applications services off of instead of hosting
themselves in order to make use of cloud services advantages such as ease of
access, control, storage, monitoring ect.
```

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

```
Access policy is crucial in managing certificates, cryptographic keys and
other secrets within the key vault.
```

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

```
Keys give access and act in similar sense to a password. Secrets are
sensitive information and can be a number of things such as passwords, api
keys, and connection strings. certificates are proof of authentication and
or legitimacy.
```

Cryptography Questions

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

```
Self signed certificates provide proof that traffic will be encrypted.
```

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

```
The safety of the site is not guaranteed by an authority.
```

3. What is a wildcard certificate?

```
A wildcard certificate can be used for multiple subdomains and does not
confine to a singular address.
```

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 has significant vulnerabilities and can lead to a compromise of
sensitive information as a result azure provides more modern solutions such
as TLS 1.0, 1.1, 1.2
```

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 is returned. The web application used is attached to the free azure
wildcard SSL certificate. If it were a self signed certificate or had no
certificate at all it would return an error.
```

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

```
1st of August - June 28th
```

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

```
No root certificate
```

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

```
Yes the website does have a root certificate. A root certificate is the
highest level of certificate it represents the trust anchor for the entire
certificate chain.
```

    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
```

Day 3 Questions

Cloud Security Questions

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

```
The two main similarities are SSL termination and global load balancing.
```

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 runs encryption and decryption tasks
from a dedicated hardware device.
```

3. What OSI layer does a WAF work on?

```
Application layer 7. WAF is used in order to protect web applications
therefore placing it on this level.
```

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

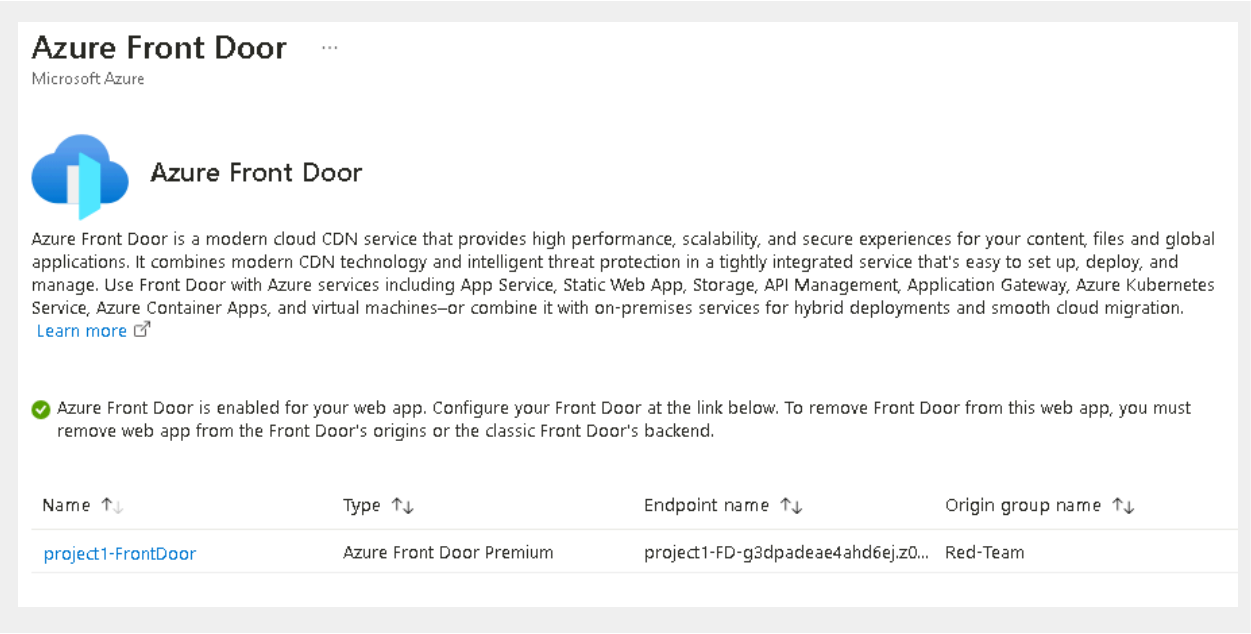
```
SQL injections are a certain web application vulnerability where the
attacker uses malicious code in the format of SQL to attack a database and
to query and return information that shouldnt be accessible.
```

5. 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?

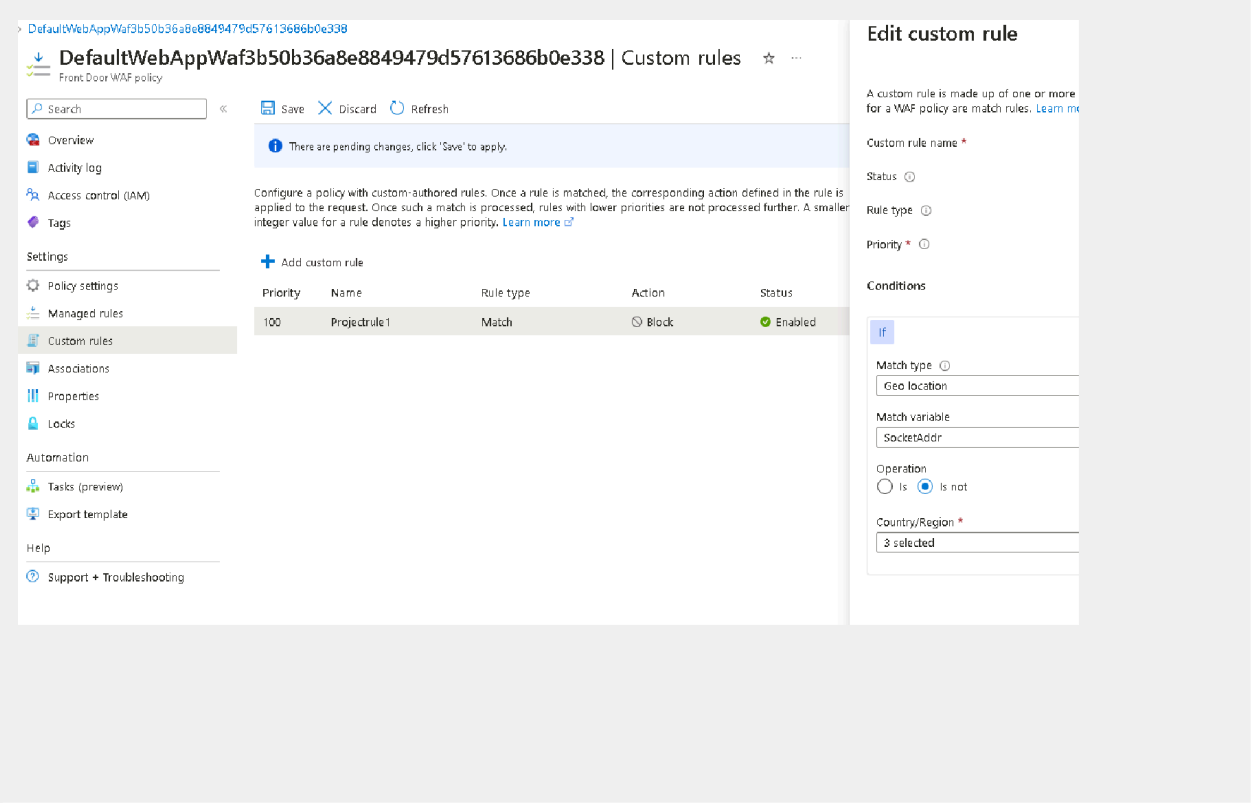
```
All regular traffic will be blocked however users using vpn’s (virtual
private networks) will be able to access the website due to the rule
blocking connection only to ip’s that identify with the blocked country.
```

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

    a. Azure Front Door enabled



    b. A WAF custom rule


DefaultWebAppWaf3b50b36a8e8849479d57613686b0e338
DefaultWebAppWaf3b50b36a8e8849479d57613686b0e338 | Custom rules
Front Door WAF policy
Search
Overview
Activity log
Access control (IAM)
Tags
Settings
Policy settings
Managed rules
Custom rules
Associations
Properties
Locks
Automation
Tasks (preview)
Export template
Help
Support + Troubleshooting
Save
Discard
Refresh
There are pending changes, click 'Save' to apply.
Configure a policy with custom-authored rules. Once a rule is matched, the corresponding action defined in the rule is applied to the request. Once such a match is processed, rules with lower priorities are not processed further. A smaller integer value for a rule denotes a higher priority. Learn more
Add custom rule
Priority
Name
Rule type
Action
Status
100
Projectrule1
Match
Block
Enabled
Edit custom rule
A custom rule is made up of one or more
for a WAF policy are match rules. Learn mo
Custom rule name *
Status
Rule type
Priority *
Conditions
If
Match type
Geo location
Match variable
SocketAddr
Operation
Is
Is not
Country/Region *
3 selected