| Cybersecurity |
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| 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:

| alexhigginscyberblog.azurewebsites.net |
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Paste screenshots of your website created (Be sure to include your blog posts):

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## Day 1 Questions

### General Questions

1. What option did you select for your domain (Azure free domain, GoDaddy domain)?

| Azure free domain |
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1. What is your domain name?

| alexhigginscyberblog.azurewebsites.net |
| --- |

### Networking Questions

1. What is the IP address of your webpage?

| 20.119.16.24 |
| --- |

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

| Virginia, Washington, USA |
| --- |

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

| Non-authoritative answer:  Name: waws-prod-blu-379-f4e5.eastus.cloudapp.azure.com  Address: 20.119.16.24  Aliases: alexhigginscyberblog.azurewebsites.net  waws-prod-blu-379.sip.azurewebsites.windows.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?

| Linux PHP 8.2. Back end |
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1. Inside the /var/www/html directory, there was another directory called assets. Explain what was inside that directory.

| css and images directories |
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1. Consider your response to the above question. Does this work with the front end or back end?

| Front end |
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## Day 2 Questions

### Cloud Questions

1. What is a cloud tenant?

| Someone or group that shares computer resources but are also kept private from the other groups or users. |
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1. Why would an access policy be important on a key vault?

| So you can designate who can see and work on what. |
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1. Within the key vault, what are the differences between keys, secrets, and certificates?

| Keys are two keys: public and private that are asymmetric algorithms, certificates are the X.509 v3 certificates and associated private keys, and secrets are everything else (an 256-bit AES symmetric key, a database connection string, a Kubernetes secret, an Application token, etc) |
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### Cryptography Questions

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

| No cost, easily generated, self-validated, and efficient for a small number of trading partners. |
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1. What are the disadvantages of a self-signed certificate?

| They do not provide any trust value of any kind, and there will likely be an error or security warning when visiting the site which will inherently affect the traffic to your site. |
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1. What is a wildcard certificate?

| The certificate has a wildcard (\*) in the domain field so that it can secure more than one subdomain as long as the base domain is the same. |
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1. 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.

| There is currently an industry wide vulnerability for that protocol |
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1. After completing the Day 2 activities, view your SSL certificate and answer the following questions:
   1. Is your browser returning an error for your SSL certificate? Why or why not?

| No it is not. It is a valid certificate. |
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* 1. What is the validity of your certificate (date range)?

| Issued On  Thursday, March 9, 2023 at 9:05:55 PM  Expires On  Sunday, March 3, 2024 at 9:05:55 PM |
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* 1. Do you have an intermediate certificate? If so, what is it?

| Yes. It is DigiCert Global Root G2 to Microsoft Azure. |
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* 1. Do you have a root certificate? If so, what is it?

| No. |
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* 1. Does your browser have the root certificate in its root store?

| No it does not. |
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* 1. List one other root CA in your browser’s root store.

| DigiCert Global Root CA |
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## Day 3 Questions

### Cloud Security Questions

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

| Similarities:  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.   Differences:  The Web Application Gateway is more regional and is best suited to protect a web application in a single region in your cloud.   * The Azure Front Door is more global and is better suited when you have a variety of regions in a cloud environment. |
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1. A feature of the Web Application Gateway and Front Door is “SSL Offloading.” What is SSL offloading? What are its benefits?

| The process of removing the SSL based encryption from incoming traffic that a web server receives to relieve it from decryption of data. It helps with smoother loading and faster processing of the website. |
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1. What OSI layer does a WAF work on?

| Layer 7 |
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1. Select one of the WAF managed rules (e.g., directory traversal, SQL injection, etc.), and define it.

| SQL injection uses malicious SQL code for backend database manipulation to access information that was not intended to be displayed |
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1. 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 it would be. The rules within the Front Door are what prevents this injection from occurring. |
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1. 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?

| They would not be able to directly access my website from any Canadian IP. There are other ways around this, like if they use VPN and my website thinks they are coming from a US IP. |
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1. Include screenshots below to demonstrate that your web app has the following:
   1. Azure Front Door enabled

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* 1. A WAF custom rule

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## 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*](https://docs.google.com/document/d/1ZzC4oTJFdlkkeWuzuJAyVSqtDFbuAWilmwXg8PZgzMs/edit) *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.*

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