| 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:

| [My Blog (red-web-app.azurewebsites.net)](https://red-web-app.azurewebsites.net/) |
| --- |

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 |
| --- |

1. What is your domain name?

| red-web-app.azurewebsites.net |
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### Networking Questions

1. What is the IP address of your webpage?

| 20.119.8.26 |
| --- |

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

| Washington, Virginia, United States |
| --- |

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

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### 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?

| Back end PHP 8.0 |
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1. Inside the /var/www/html directory, there was another directory called assets. Explain what was inside that directory.

| Image and css folders |
| --- |

1. 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 user or customer who uses the services and resources of a cloud computing provider to meet there computing needs |
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1. Why would an access policy be important on a key vault?

| It limits who has access to the keys and data in the vault |
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1. Within the key vault, what are the differences between keys, secrets, and certificates?

| The key vault contains three types of information, each with a specific function in maintaining and protecting sensitive data: keys are cryptographic secrets used for encryption, secrets are private details like connection strings or passwords, and certificates are digital certificates for secure communication. |
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### Cryptography Questions

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

| One of the benefits of a self-signed certificate is that it may be easily issued without the need for a certificate authority, which makes it appropriate for internal or testing purposes. |
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1. What are the disadvantages of a self-signed certificate?

| The disadvantages of a self-signed certificate are restricted browser and application support and a lack of third-party validation, which may raise security and trust issues. |
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1. What is a wildcard certificate?

| A wildcard certificate covers all of a domain's subdomains with a single certificate that is indicated by an asterisk in the subdomain component, allowing for the safe transfer of data across all of them. |
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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.

| Its vulnerable to attackers to leaking data like authentication cookies |
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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?

| I say no because I see no errors on the website |
| --- |

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

| 11/26/23-11/25/23 |
| --- |

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

| Microsoft Azure TLS Issuing CA 101 |
| --- |

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

| DegiCert Global Root G2 |
| --- |

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

| yes |
| --- |

* 1. List one other root CA in your browser’s root store.

| GlobalSign Root CA |
| --- |

## Day 3 Questions

### Cloud Security Questions

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

| Although they are both Azure services intended for controlling and optimizing online traffic, Azure online Application Gateway and Azure Front Door have different functions. Web Application Gateways, which offer functions like load balancing, SSL termination, and WAF for web applications, are mostly focused on application-level traffic management within a region. Conversely, Azure Front Door is a worldwide service that functions at the edge of the network, providing routing, content acceleration, and global load balancing to maximize the delivery of content worldwide. Web Application Gateway serves applications within a region, whereas Azure Front Door focuses on global content delivery and acceleration with features like anycast routing and edge caching. Although both services improve security and scalability, the main difference between them is in how their used. |
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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 moving the SSL/TLS encryption and decryption responsibilities from web servers to specialized hardware like Azure Web Application Gateway or Azure Front Door is called SSL offloading, sometimes referred to as SSL termination. By decreasing server load, increasing efficiency, and freeing up web servers to focus on application logic, this offloading enhances overall speed. This makes it feasible to manage SSL centrally, which makes updating and renewing certificates easier. Having a single point of contact for SSL termination improves security by making security policy implementation and monitoring easier. SSL offloading also makes optimizations possible, such as content caching and compression, which enhance the performance of content delivery. All things considered, SSL offloading simplifies SSL/TLS processing, resulting in an infrastructure for online applications that is more scalable, high-performance, and safe. |
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1. What OSI layer does a WAF work on?

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

| I’ll choose directory traversal since we have been going over it in the current module, Is a security flaw in which hackers alter user input to move across a web application's intended directory layout without authorization, perhaps exposing private data. |
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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?

| The website would be insecure because none of the rules would be activated but it can still be done even with rules being placed since it really depends on how the website is setup and the way the website is currently set up there can definitely be ways but very minimal due to the fact theres really no input on the blog page for an attacker to store any malicious input or files etc… |
| --- |

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?

| Yes they wouldn't be able to unless they use a VPN |
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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.*
* ***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.*

YES

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