| 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:

| lauren-ferguson.com |
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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)?

| GoDaddy |
| --- |

1. What is your domain name?

| lauren-ferguson |
| --- |

### Networking Questions

1. What is the IP address of your webpage?

| 20.118.48.4 |
| --- |

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

| Des Moines, Iowa, United States |
| --- |

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

| Server: osync.lan  Address: 192.168.1.1  Non-authoritative answer:  Name: lauren-ferguson.com  Address: 20.118.48.4 |
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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?

| PHP 8.1  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  These are used to style and layout the webpages |
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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 customer who purchases cloud computing resources |
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1. Why would an access policy be important on a key vault?

| A Key Vault access policy determines whether a given security principal can perform different operations on Key Vault secrets, keys, and certificates. |
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1. Within the key vault, what are the differences between keys, secrets, and certificates?

| Keys: cryptographic material that’s imported into the vault (e.g. hashes)  Secrets: stored item (e.g. password)  Certificates: shows authenticity of websites |
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### Cryptography Questions

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

| Free, fast, easy to use  Appropriate for development environments and internal network websites |
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1. What are the disadvantages of a self-signed certificate?

| Browsers won’t display as trusted site  Will be an “Accept Risk” prompt  Risky for transaction or financial websites  Vulnerable to data theft or cyberattacks |
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1. What is a wildcard certificate?

| A public certificate that can be used within multiple subdomains of a domain  Has a \* (wildcard) in domain name portion of certificate |
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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.

| SSL 3.0 has the POODLE vulnerability, caused by a weakness in the CBC encryption algorithm |
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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 because the certificate is from Azure, a trusted CA |
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* 1. What is the validity of your certificate (date range)?

| 7/6/23 |
| --- |

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

| GeoTrust Global TLS |
| --- |

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

| DigiCert, Inc. |
| --- |

* 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.

| Amazon 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?

| Explain the similarities between these two tools:   * Both of these tools reside in *front* of your web application to protect it. * They both work on the Application Layer of the OSI Model (Layer 7). * Their primary solution is a load balancer. * They can incorporate a Web Application Firewall (WAF) to protect against web vulnerabilities attacks (this will be covered in today's project). * They have additional features, such as URL path-based routing and SSL/TLS termination (which will not be covered in today's project).   The differences between the two are:   * The Web Application Gateway is more regional, to protect a web application in a single region in a cloud. * 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?

| SSL Offloading is using a dedicated server for SSL decryption and encryption  It takes the strain off your CPU |
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1. What OSI layer does a WAF work on?

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

| SQL Injection: the placement of malicious code in SQL statements, via web page input |
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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?

| No because there is no user input option for my website |
| --- |

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 it will block users in Canada, unless they are using a technology to change their source IP (e.g. 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.*

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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