AMITY SCHOOL OF ENGINEERING & TECHNOLOGY
Information Security Lab (ETCS-451)

1. Write a program to implement an encryption algorithm for WiFi.
2. Implement RSA algorithm.
3. Implement DES algorithm
4. Implement Diffie-Hellman algorithm
5. Make a study of anyone simulation tool based on parameters of information security
6. Implement VPN through Packet-Tracer or any other network simulator tool.
7. Make an experiment to implement WEP/WPA2 PSK, 802.1x EAP security protocol.
8. Implement firewall through App to login into bank-site to implement E-commerce, debit card transaction through payment gateway
9. Implement bio-metric system to have physical security through different access control permissions.
10. Write a program to secure your laptop to avoid unauthorized access.
11. Security - Case 1

    Challenge Help build data security in an organization, while taken seriously, has been as-needed and just-in-time. We have reached a stage where we recognize the need to be more proactive and formal, while still managing to preserve our agility. Your mission is to write a brief (or proposal) for a security, privacy and compliance plan that will take us to this next stage. As the InfoSec person, you would present this document to make a case for the team to put into place coordinated and prioritized your recommended measures. The brief will not be assessed on "correctness" or intuition, as that would not be fair because a lot of the context you would typically have is missing.

    What we are assessing is the following:
    - Written/async communication skills
    - Your creativity and clarity of thought
    - Your ability to identify strategic priorities
    - Your ability to balance by-the-book security with the realities of a start-up A few details that may help:
    - Compliance is important to many of our customers — GDPR, HIPAA, PCI and so on
    - As we have grown, some of our prospects are now larger, more security-conscious organizations
    - We have some practices in place, such as regular pen testing, but have not yet been fully satisfied with them
    - We have a security guild of interested engineers who handle vulnerabilities
    - We are a remote first company and we are hosted in AWS Deliverables feel free to use the tool you are most comfortable with. Since there is no pressure to be right, you can feel free to get into solutions/ideas. Our goal is to evaluate your thought process, and solutions are helpful in doing that. Other things you might want to cover include:
    - Framing the problem in your own words
    - Based on your limited knowledge how would you solve the challenge?
    - What would be the Minimally Viable Plan?
    - What would be good follow-on projects to consider?
    - What assumptions did you make?
    - What are the risks you have identified and how might we mitigate them?
    - How you would measure success?
12. Security – Case 2

    Setting the scene: HungryPanda is one of the fastest-growing companies that is on a mission to deliver on-time, delicious, and customized food to its hungry customers. HungryPanda has partnered with University Students to deliver food to its Corporate Customers across the United States. Fortune 500 is the largest source of revenue for the company and to enrich their experience, HungryPanda collects range of data related including **PII**. This information is used to know their preferences such as tastes, health requirements, specifics, etc. HungryPanda employees are spread across the US and often work from their home office and/or public places. The existing Employee strength is close to 300 and contingent workers are around 2000. These employees are heavy Mac users and have 100 plus SaaS applications such as GSuite, Slack, Confluence, Jira, GitHub, AWS, Salesforce, Workday, Office 365, Box, and HighSpot. The majority of these SaaS applications either use free or the lowest level of subscription. The Engineering and

Product teams have their own tooling and orchestration in place. The challenge: ABC thinks through or design a robust security strategy and framework that leverages shared responsibility model to deploy various risk management strategies at the company ABC. Define your approach to controls assessment for **Secure Development Lifecycle (SDL)** in a 100% **SaaS** environment for an engineering organization that fully uses **CI/CD.**

INFORMATION SECURITY LAB

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Paper Code: ETCS-451			
Paper: Information Security Lab	**0**	**2**	**1**

List of Experiments:

1. Make an experiment to implement WEP/WPA2 PSK, 802.1x EAP security protocol.
2. Implement firewall through App to login into bank-site,; to implement E-commerce, debit card transaction through payment gateway
3. Implement bio-metric system to have physical security through different access control permissions.
4. Implement RSA algorithm.
5. Implement DES algorithm
6. Implement Diffie-Hellman algorithm
7. Make a study of anyone simulation tool based on parameters of information security
8. Implement VPN through Packet-Tracer or any other network simulator tool.

NOTE: At least 8 Experiments from the syllabus must be done in the semester.