

Secure Software Development Diploma in ISF/IT/FI Year 2 (2018/2019) Semester 3	Week 11-15
SSD Assignment (40%)	
Last Updated: 22/06/2018	

LEARNING OBJECTIVES

Learning objectives are to:

- Assess students' understanding on secure software development lifecycle (SSDLC).
- Assess students' ability to design and develop a secure software.
- Assess students' effectiveness working as a team.

ASSIGNMENT SCOPE

Students will be required to form teams (minimum of 3 to a maximum of 4) students) and develop a secure web application. The deliverables include:

- A Project Report - 15%
- A working secure website – 15%
- Assignment Demo & Presentation - 10%

(Note: the web application selected must not be similar to the other groups. Upload a brief description of your web application in to MS Teams: SSD-AY1819-xxx-Pxx-Assignment).

Each student of the team must develop at least one major feature of the web application such as registration with login/logout, administrator functions, rating, feedback, notification and/or search features, etc. (relating to the product/services being developed, if deem feasible). Document the Secure Software Requirements, Design, Coding, and Testing for that feature he/she developed. Such documents from each student would be put together to form the final assignment report.

ASSIGNMENT DELIVERABLES & TIMELINE

- **Assignment Outline** – week 11
 - Project Title
 - Project Vision
 - Project Description
 - Project Features (with brief description)
 - List members and the features they would work on
- **Final Report** – Date Due: **27 July 2018 (Friday) @ 2359 hrs** (online submission in Teams) (Week 15)
- **Presentation and Demo** – Week 16 and 17

ASSIGNMENT REPORT REQUIREMENTS & EXPECTATIONS

Team Report Requirements:

Submit a 15-20 page report (excluding appendices) using Arial size font 12 with 1.5 spacing that would include followings:

1. Project Title
2. Project Vision
3. Project Description
4. Project Features (with brief description)
5. List members and the features they worked on
6. Feature 1 (e.g., Registration):
 1. Secure Software Requirements
 1. Surveys (Questionnaires and Interviews)
 2. Data Classification
 3. Data Labeling
 4. Data Ownership
 5. Use Case and Misuse Case Modeling
 6. Subject/Object Matrix
 7. List relevant Confidentiality, Integrity, Availability, Authentication, Authorization, Accountability, Session Management, and Error/Exceptions Management.
 8. Requirements Traceability Matrix (RTM)
 2. Secure Software Design
 1. Secure Software Design Principles
 2. Attack Surface Evaluation
 3. Threat Modeling
 3. Secure Software Coding
 1. Detailed Description of All the Defensive Coding Practices implemented in MVC.
 2. Secure Software Processes
 1. Versioning
 2. Code analysis
 3. Code/Peer review
 4. Secure Software Testing
 1. Test Strategy
 2. Test Plan
 3. Test Cases
 5. Security Conclusion of the Feature
7. Conclusion
8. References
9. Appendix

(Teams are also encouraged to work using Visual Studio Team Services. Extra merits will be awarded to teams that do this)

Report Organization and Report Writing

- Proper Introduction to your report;
- Report Body must show good linkages and transition from one section to the next;
- Good conclusion to your report;
- Language used must be fluent; report contents must be coherent;
- Needs to cite your sources and references

GENERAL ASSESSMENT CRITERIA

Team Report will be assessed based on the following criteria:-

- Neatness and professionalism of report submitted
- Evidence of work put into the project
- Relevance and clear explanation on developing a secure web application/software (eg; secure design, development, testing, etc).

Presentation and demo will be assessed based on the following criteria:-

- Presentation will be assessed individually (as well as a team). Presentation should be done using Powerpoint slides.
- Ability to present confidently and articulate concepts and understanding in a clear and concise manner
- Clear and concise demonstration of the secure features of the web application.
- Submission of the secure web application/software.

[Note: Students are encouraged to conduct thorough checks on their software such that there are no security breaches.]

Team Report Submission Format

- i) Front Page: Report Cover
- ii) Team Report Contents
- iii) Team members' contributions
- iv) Power point Slides
- v) Secure website project solution (Zip)