# Assignment 1:

You need to create vulnerable web application includes all of the OWASP top 10 vulnerabilities.

The vulnerable application business should be as simple banking system contains the following functions:

1. Assume that there are already 4 users, with two accounts per user
2. The users shall have amount of money in the two accounts
3. Should have transfer function
4. Should have view statement
5. Upload files for complaints page
6. Messaging to admin
7. Should have logging page for actions in the admin dashboard.

Provide pen test report for the vulnerable application including the exploitation scenario for each of the finding.

# Assignment 2:

Fix the findings in Assignment 1

Provide retest report to validate the findings

Provide a comparison between vulnerable and non-vulnerable code with description of the implemented fix.

# Assignment 3:

Perform gray box penetration testing on the following application.

You must use tools to scan the application in authenticated and non-authenticated mode.

<https://demo.testfire.net/login.jsp>

# Assignment 4:

Building on Assignment 1 Application. Perform an automated brute force attack to gain successful login.

Fix the login form to be protected against this attack.

# Assignment 5

Provide Low level Technical Report on one of Ransomware Attack, elaborate the exploitation used, the encryption mechanism, propagation, later movement and mitigation (except WannaCry).