Security Knowledge Framework

OWASP

Making the web secure by design

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Agenda

- Why SKF
- What you will get/learn
- Stages of development
- Intro & how to
- Hands on - testing
- ASVS
- Getting involved
- Questions?

Why S.K.F.

- Missing security at design
- Missing defensive coding approach
- Missing security guidance
- Missing security requirements
- Security is hard
- Security information should be available for everybody

What you will get/learn

- Guide to secure programming
  Do security by design, not implementing security afterwards.

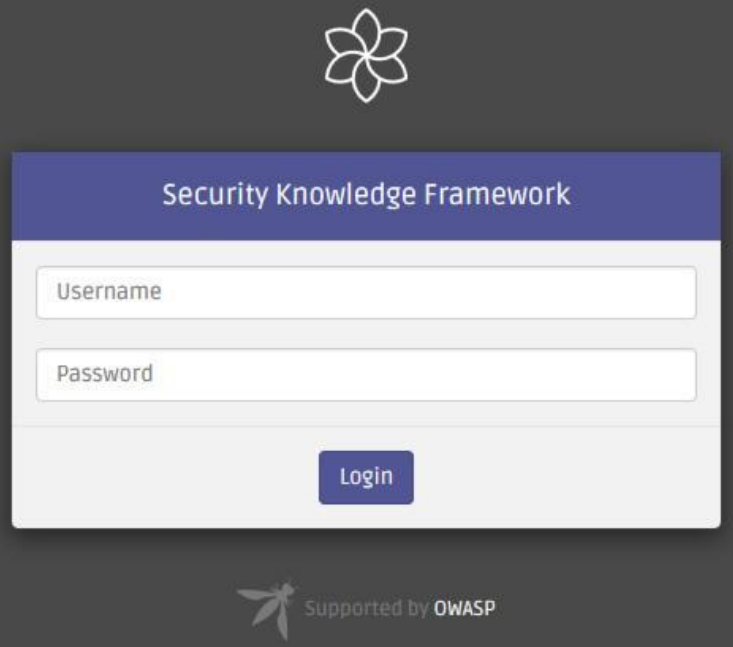
- Security awareness
  It'll inform you about threats even before you wrote a single line of code.

- Central place for security reference
  Provides information applicable for your specific needs on the spot.

Stages of development

- Pre development stage
  Here we detect threats before hand and we provide developers with secure development patterns as well as providing feedback and solutions on how to handle their threats.

- Post development stage
  By means of checklists we guide developers through a process where we harden their application infrastructure and functions by providing feedback and solutions



Demo:
https://securityknowledgeframework.org/demo.php

Hands on - testing

- Visit the web application
  Check out this new web application developed by SloppyCode INC.
  Visit the website on http://192.168.8.133

- Source of SloppyCode INC available at: https://github.com/blabla1337/skf-workshop

- Learn the hackers mindset
  In order to defend we first must think like an attacker.

Some hacking exercises

- Cross site scripting
- Reflective file download
- Directory/path traversal
- Identifier injection

Cross site scripting

- Attack vector:
  If you can imagine it, you can do it. Under the right conditions XSS can do almost anything. For example: http://beefproject.com/

- Objective
  Due to the variety of attacks and encodings there are a lot of different possible attack strings to execute an XSS attack. For this exercise though you will only need a simple : <script>alert(1337);</script>. Now find the XSS injection in the application.

Reflective file download

- Attack vector:
  Reflective file download occurs whenever an attacker can "forge" a download through misconfigurations in your "disposition" and "content type" headers. This attack can lead to compromising the victim’s entire workstation.

- Objective
  Try tamerping with the filenames and see if you can forge your own download on the web application. Try to make your attack access a local file on your machine.

Directory/path traversal

- Attack vector:
  A Path Traversal attack aims to access files and directories that are stored outside the web root folder. By browsing the application, the attacker looks for absolute links to files stored on the web server. By manipulating variables that reference files with dot-dot-slash (../); sequences and its variations, it may be possible to access arbitrary files and directories stored on file system.

- Objective
  Try to read the “secrets.txt” from the webserver by doing a path traversal attack.

Identifier injection

- Attack vector:
  An application uses parameters in order to process data. These parameters can also be used to assign certain roles and retrieve content corresponding with those parameters. Whenever these parameters are tampered with an attacker might gain access to other users data.

- Objective
  Watch the applications operation and look out for identifiers like user= or id= when you are searching for identifier injection. Let's see if we can read some user data not intended for our eyes.

OWASP ASVS

- ASVS lvl1 Opportunistic
  It adequately defends against application security vulnerabilities that are easy to discover.

- ASVS lvl2 Standard
  It adequately defends against prevalent application security vulnerabilities whose existence poses moderate-to-serious risk.

- ASVS lvl3 Advanced
  It adequately defends against all advanced application security vulnerabilities, and also demonstrates principles of good security design.

Getting involved?

- Website
  secureby.design

Together we can make it big, strong and helpful!

Questions?

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