CERN School of Computing

*Exercises*

# Software security



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# Exercises

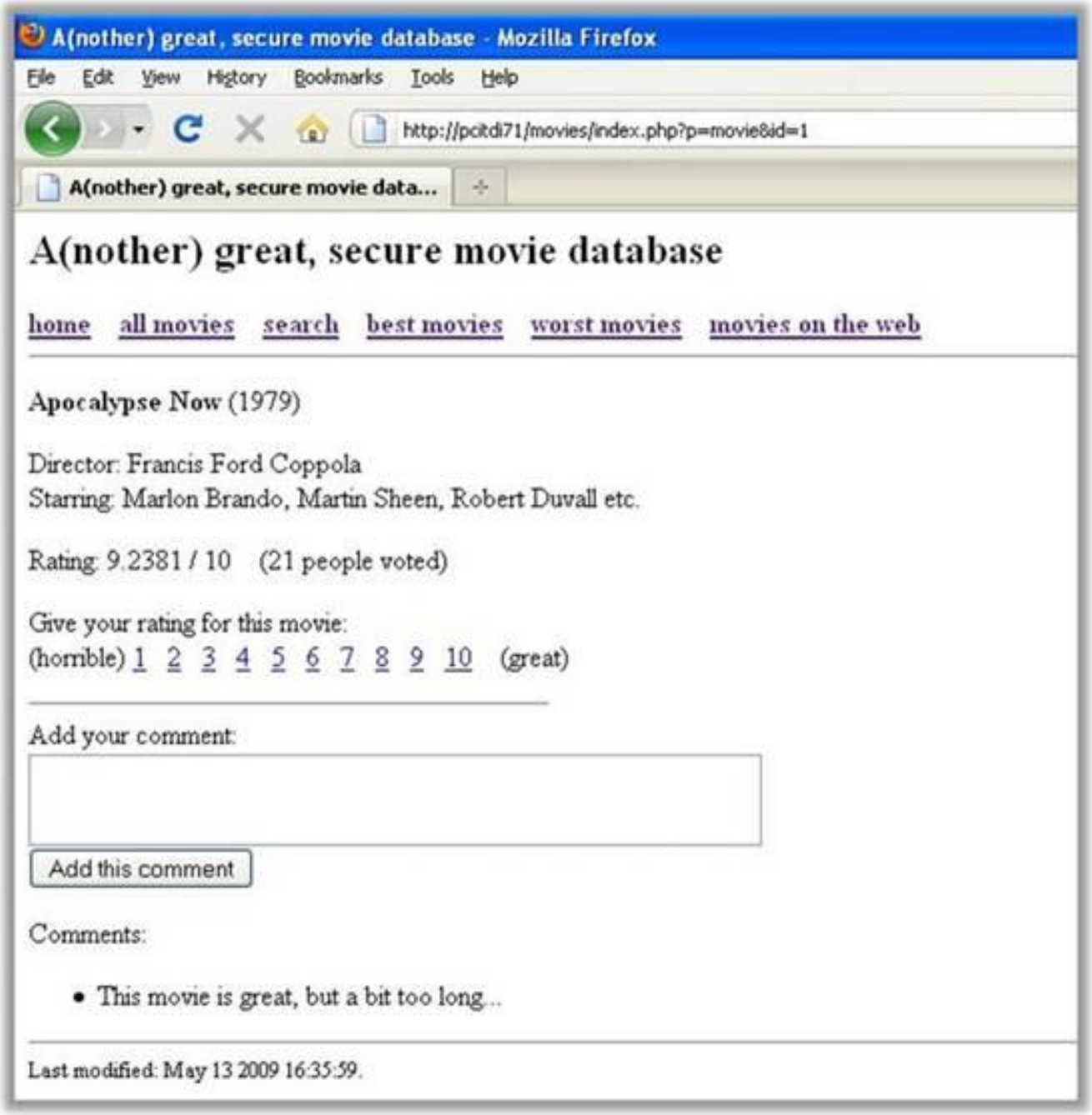
- Small pieces of code in C, Java, shell, PHP, HTML/JS

| sample | C | | bash | Java | PHP | | | | | HTML |
|---|---|---|---|---|---|---|---|---|---|---|
| #1 | #1 | #2 | #1 | #1 | #1 | | | | | #1 |
| | | | | | question 1 | question 2 | question 3 | question 4 | question 5 | |

- Find security vulnerabilities
  - feel free to research online!
- Exploit them
  - as an external attacker, without changing the code
- Think how would you fix them

- Any order – start with your programming language
- HTML exercise is an optional (and difficult) challenge

# PHP


A(nother) great, secure movie database - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://pcitdi71/movies/index.php?p=movie&id=1
A(nother) great, secure movie data...
A(nother) great, secure movie database
home all movies search best movies worst movies movies on the web
Apocalypse Now (1979)
Director: Francis Ford Coppola
Starring: Marlon Brando, Martin Sheen, Robert Duvall etc.
Rating: 9.2381 / 10 (21 people voted)
Give your rating for this movie:
(horrible) 1 2 3 4 5 6 7 8 9 10 (great)
Add your comment:
Add this comment
Comments:
This movie is great, but a bit too long...
Last modified: May 13 2009 16:35:59.

# PHP

PHP exercise is a sample Web application
"Movie database"

- play with it a bit, to see what it can do
- 5 sub-questions about different vulnerabilities
  => because Web applications are often vulnerable
- even if you don't know PHP, try it – it's easy
  (and you may need it one day)

# Hints, solutions, answers

If you don’t know how to proceed, see the hint

If you are still stuck, see the solution

Start with the sample exercise to see how hints and solutions work

When providing answers:

- try different things
- call me if you are sure that you have a good answer, but docs don't accept it

After providing a correct answer => read the solution

(you may still learn something interesting!)

# The goal

- Complete at least 3 exercises
  - displaying hints and even solutions is OK
  - the more exercises completed the better

- Competition: which team solves most (all?) exercises?
  - (without seeing solutions)

- But the main goal is TO LEARN

1. Go to https://cern.ch/csc-security
2. Log in with your **CERN account**
3. Enter vour table number + both names

   Your name(s) is/are [32 - Laura and Hans] [Change]

4. Follow instructions from the “Download” section
   - **Download**
     Download and prepare the exercises
5. Visit the “Movie Database” app:
   https://whitehat.cern.ch/movies?key=xxxxxxx