The following is a list of possible questions for our quiz on April 4th. Some of the questions will not be asked in the quiz. All the questions that will appear in the quiz will appear exactly as shown below (however, numeric parameters may be changed). The quiz is closed textbook, closed notes and closed neighbors. Note that the questions, which did not appear in this quiz, still may appear in the exams. You will find a solution for these questions during lectures.

#1: What is “secure coding” (answers for this question will be graded based on “how well” you explain its concept)?

#2: How is “secure coding” different from “(just) network application coding” (answers for this question will be graded based on “how well” you explain the difference)?

#3: Mention (show) one example of “sanitization” to prevent OS command injection attacks.

#4: In XSS (Cross Site Script) attacks, who prepare CGI program used for the attack?

#5: In XSS (Cross Site Script) attacks, where malicious scripts are executed?

#6: In XSS, why don’t attackers send malicious CGI forms directly to web clients?

#7: What security weakness in third-party web servers XSS attackers use for performing XSS attacks?

#8: What is the most effective solution for preventing XSS attacks (from the viewpoint of network programming)?

#9: If directory traversal attacks successfully happen, whose faults are they?

#10: If SQL injection attacks successfully happen, whose faults are they?

#11: If OS command injection attacks successfully happen, whose faults are they?

#12: If XSS attacks successfully happen, whose fault are they?

************************ the topics related to WebAssembly ************************

#13: Describe how “Java Script” is used in (web-based) applications? What is the primary purpose of “Java Script” (i.e., why was Java Script introduced)?

#14: What is the primary purpose of “CGI (Common Gateway Interface)” (i.e., why was CGI introduced)?

#15: What are (were) the two major criticisms “Java Script” received from web-based application programmers?
#16: What is “dynamic data-type checks”? Explain it using “static data-type checks”.

#17: Show how “Java Script Engine” processes java scripts (i.e., programs written in Java Script) at each web browser.

#18: Explain why programs written in Java Script is not fast (i.e., not fast enough for some web programmers)?

#19: What does “Java Interpreter” do?

#20: What is “Java byte-code”? Why was “Java byte-code” introduced (as a part of “Java Script”)?

#21: What does “Java Compiler” do?

#22: Show the processes in “WebAssembly”.

#23: What does “WASM compiler” do?

#24: Who use “WASM compiler”? Where is “WASM compiler” used?

#25: Why will “WebAssembly” be faster than “Java Script”? Mention two different reasons.

#26: Some software engineers believe that WebAssembly is for replacing (eliminating) Java Script. What’s wrong in the idea? Explain why it’s wrong.

#27: In addition to the two weaknesses in “Java Script” (those addressed in #15), there is yet another weakness in “Java Script”, which WebAssembly tries to improve. What is it?