

## **Questions**

Read Larson (2018) and Weidman (n.d.) then answer the questions below, adding them as evidence to your e-portfolio. You may want to complete this activity in conjunction with or after completing Seminar 2 preparation.

1. What is ReDOS and what part do 'Evil Regex' play?
2. What are the common problems associated with the use of regex? How can these be mitigated?
3. How and why could regex be used as part of a security solution?

## **Answers**

1. Regular expression Denial of Service (ReDoS) is a type of cyber attack which exploits the fact that specific types of inputs into certain regex patterns, can cause most regex implementations to run very slowly (Weidman, N.D). 'Evil Regex' is the term ascribed to a Regex pattern if it is vulnerable to a crafted input (Weidman, N.D).
2. One problem with using regex is that a regex pattern may pass the syntax and semantics checks of the interpreter or compiler. However, have errors that appear during runtime (Larson & Kirk, 2016). Furthermore, the patterns used are prone to errors, in terms of how they are implemented by developers (Larson & Kirk, 2016). Certain tools like EGRET and ACRE are used to check regex patterns for common mistakes (Larson & Kirk, 2016; Larson, 2018).
3. Regex can be used during input validation in an application, which is important in ensuring that the correct type of data is inserted into one's program (Larson & Kirk, 2016). Additionally, it is critical to test that data inserted is not of a sort which may leverage the correct type of data input to attack the application or any connected system in any way (Larson & Kirk, 2016).

## **References**

Larson, E., Kirk, A. (2016) 'Generating Evil Test Strings for Regular Expressions', *IEE International Conference on Software Testing, Verification and Validation (ICST)*.

Larson, E. (2018) 'Automatic Checking of Regular Expressions', *18th IEE International Working Conference on Source Code Analysis and Manipulation (SCAM)*.

Weidman, A. (N.D) Regular Expression Denial of Service – ReDoS. Available from: [https://owasp.org/www-community/attacks/Regular\\_expression\\_Denial\\_of\\_Service\\_-\\_ReDoS](https://owasp.org/www-community/attacks/Regular_expression_Denial_of_Service_-_ReDoS) [Accessed 4 December 2021].