UML Diagrams are broken into behavioural, Structural, and overview diagrams. Behavioural diagrams consist of but are not limited to the Use Case Diagram, which captures the function requirements of the system. Activity diagrams, which capture the sequence of events the system performs. Structural diagrams include Class diagrams that help with Object Oriented programming to help identify the relation between classes. [Javatpoint, na]

The above are some of the diagrams which are excellent at representing the overall behaviour and structure of the system. For my example, I will select SQL injection as a weakness identified by OWASP.

The idea of displaying an overall state in figure 1.1 shows how an SQL injection can occur. These range from OS attacks to time and union-based attacks. [imperva.com, na] Providing an overview diagram gives a holistic view of the topic.

Figure 1.2 builds upon this and shows a use-case diagram, which would give a breakdown of the components of the system showing how an attack would occur. [Atefeh Tajpour er al, 2012]

Finally, 1.3 shows the sequence of events and the communication between the attacker and the system components. I have assumed that my fictitious system will use the HTTP request rather than the secure HTTPS. Also, no verification is performed when the requests come from the front to the back end.

Figure 1.1

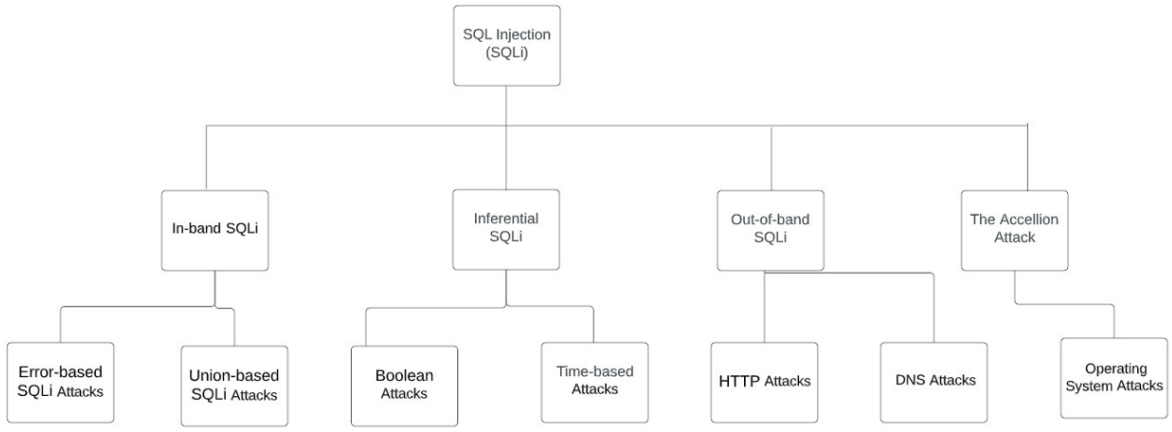

Figure 1.1

Figure 1.2

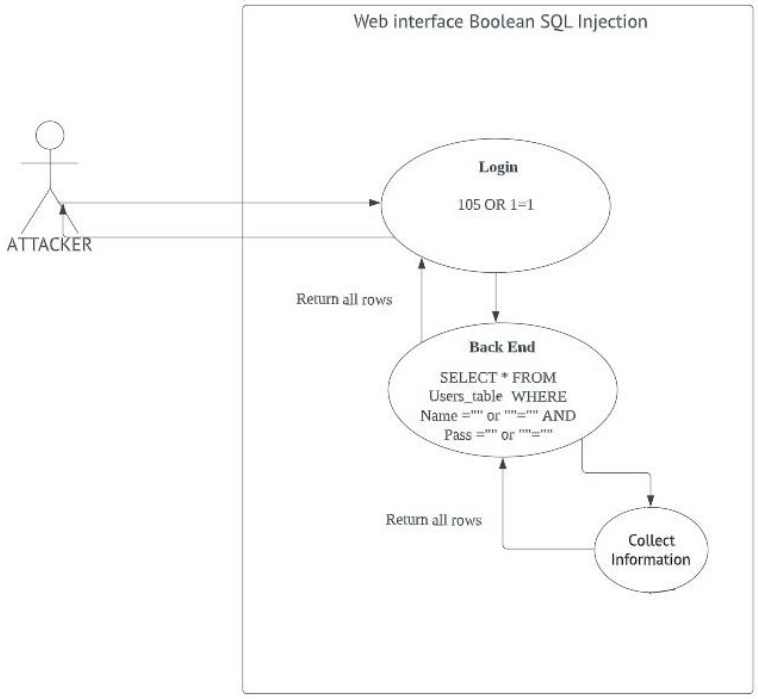

Figure 1.2

Figure 1.3

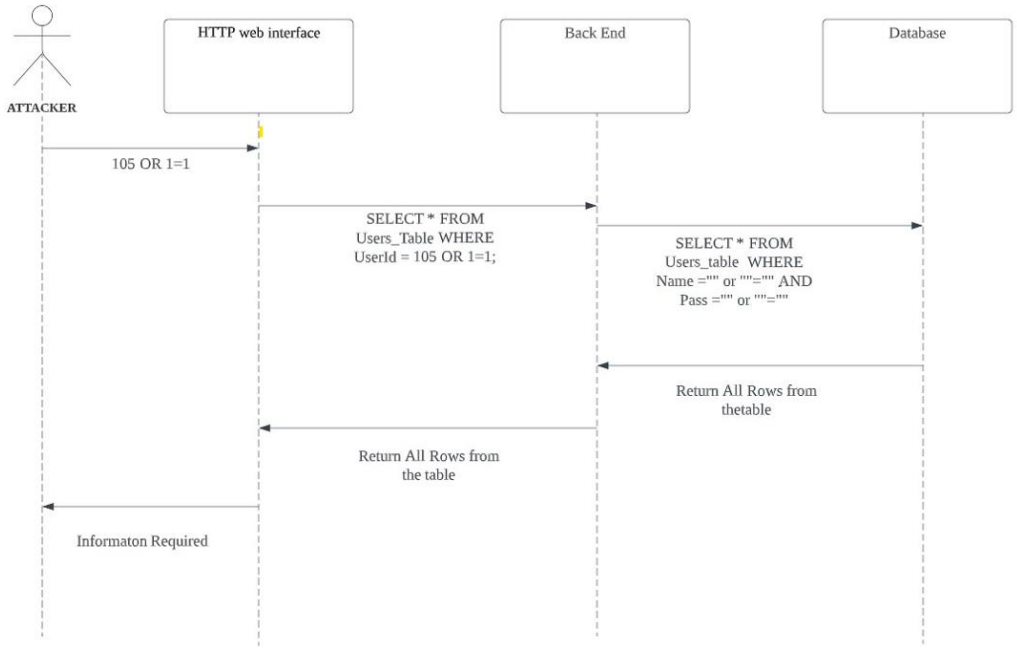

Figure 1.3

References :

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Tajpour, Atefeh & Ibrahim, Suhaimi. (2012). Web Application Security by SQL Injection Detection Tools Available at: **https://www.researchgate.net/publication/265947554_Web_Application_Security_by_SQL_Injection_DetectionTools** (Accessed: 21 November 2022).