DEVELOPMENT BROWSER EXTENSION FOR DETECTING XSS VULNERABILITIES BASED WEBSITE USING LONG SHORT TERM MEMORY ATTENTION (LSTM-ATTENTION) ALGORITHM

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OUTLINE

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BACKGROUND

- The level of internet usage is getting higher every year which triggers a large number of cybercrimes [1]
- According to OWASP, Cybercrime has many types of attacks, one of which is XSS [2]
- XSS is a type of attack that allows an attacker to execute a script in the victim's browser that can hijack user sessions, steal cookies, and leak users' personal information [2]
- In 2020, it was found that as many as 25% of the web had vulnerabilities to XSS, it shows that web application security has not been addressed effectively so efforts are needed to address the vulnerability [3]

PURPOSE

Building a browser extension that is used to detect XSS (XSS reflected type) using LSTM-Attention (Long Short Term Memory Attention).

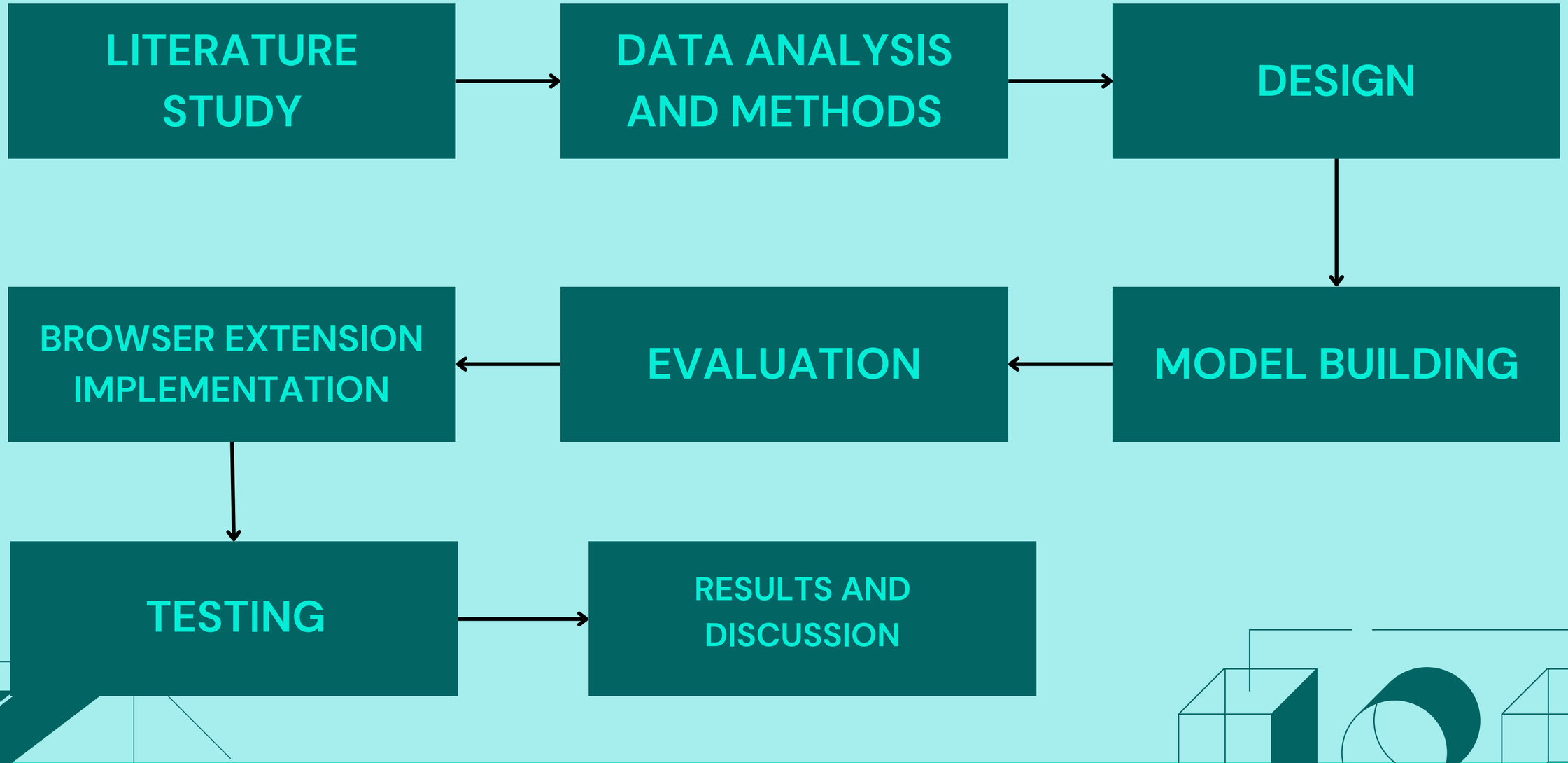
RESEARCH QUESTIONS

- How to build a browser extension in detecting XSS attacks using the LSTM-Attention algorithm?
- How does LSTM-Attention work in XSS detection on the web?
- What is the accuracy level of browser extension in detecting XSS attacks?

EXPECTED RESULT

The expected result of this Final Project is a browser extension used in the detection of URLs containing XSS

METHODOLOGY



RISK

Non-conformity of the results obtained, the implementation carried out did not give satisfactory results and did not correspond to the purpose.

WORK PLAN

W2 - W7 (TA1)	Literature Study
W5 - W6 (TA1)	Data analysis and methods
W5 - W6 (TA1)	Design
W11 - W15 (TA1)	Model Building
W14 - W15 (TA1)	Evaluation
W4 - W7 (TA2)	Browser extension implementation
W10 - W12 (TA2)	Testing
W13 - W14 (TA2)	Result and Discussion

REFERENCES

[1] “Pengguna internet di dunia capai 4,95 miliar orang per januari 2022.” https://databoks.katadata.co.id/datapublish/2022/02/07/pengguna-internet-di-dunia-capai-495-miliar-orang-per-januari-2022 (accessed Oct. 05, 2022)

[2] OWASP, “OWASP top 10 - 2017 the ten most critical web application security risks,” OWASP Found., pp. 1–24, 2017, [Online]. Available: https://owasp.org/www-project-top-ten/2017/Top_10

[3] A. Report, “The invicti appsec indicator spring 2021 edition : acunetix web vulnerability report introducing the invicti appsec indicator,” p. 45, 2021, [Online]. Available: https://www.acunetix.com/wp-content/uploads/2021/04/Invicti-AppSec-Indicator-Spring-2021-Edition-Acunetix-Web-Vulnerability-Report.pdf