Threat Modelling and Management:

This unit helped to enhance threat modelling techniques to anticipate and mitigate risks during system architecture design. STRIDE, DREAD, Attack Trees, and PASTA are structured approaches to identify and rank threats.

Tools/Models Used”

- STRIDE for categorises threats
- DREAD for scoring threats by risk impact
- Attack Trees for visualising attack paths
- PASTA for aligning technical threats with business impact

Learning Outcomes:

STRIDE helped me systematically identify threats, and DREAD supported prioritisation. I found PASTA better for business-driven assessments as it connects technical and organisational risks.

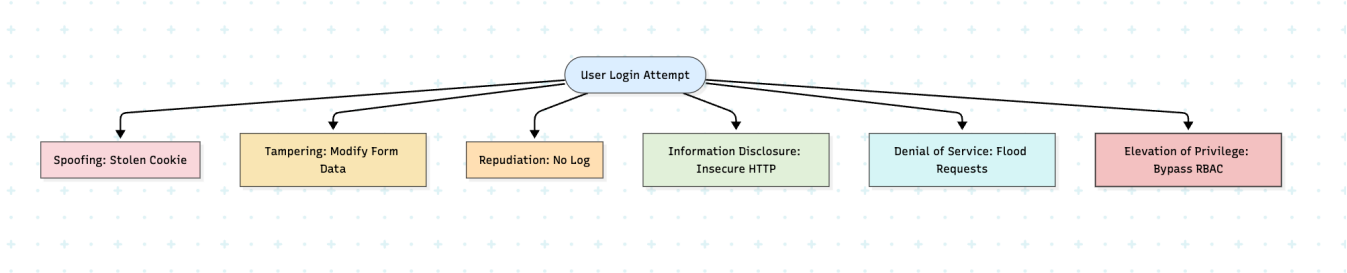

Figure 1: STRIDE Threat Diagram for Login System

Sample Table: STRIDE Mapping for Login System:

Below table shows how threats branch from a typical user login attempt according to STRIDE

STRIDE Category	Example Threat
Spoofing	User impersonation via stolen cookie
Tampering	Manipulated request data
Repudiation	No audit logging for account actions
Information Disclosure	Unencrypted HTTP login
Denial of Service	Login endpoint flooded
Elevation of Privilege	Bypassing RBAC to gain admin access

References:

Aven, T. and Thekdi, S. (2025) *Risk Science: Concepts and Applications*. Routledge.

Carnegie Mellon University. (2018) *Threat Modeling: A Summary of Available Methods*. [Online] Available at: https://resources.sei.cmu.edu/library/asset-view.cfm?assetid=518130 [Accessed 18 Oct. 2025].

NIST. (2022) *Computer Security Resource Center*. [Online] Available at: https://csrc.nist.gov [Accessed 18 Oct. 2025].

Tarandach, I. and Coles, M. (2020) *Threat Modeling: A Practical Guide for Development Teams*. O'Reilly Media.

Popov, G., Lyon, B. and Hollcroft, B. (2022) *Risk Assessment: A Practical Guide to*