K P Uday Krishna

CB.SC.P2CYS23012

SSE Assignment

Assignment 1

Case study: Corporate HRMS System

Define the Scope and Objectives

Scope:

- A corporate HRMS System where employees can log in, view account details, Change the database, Apply Leave.

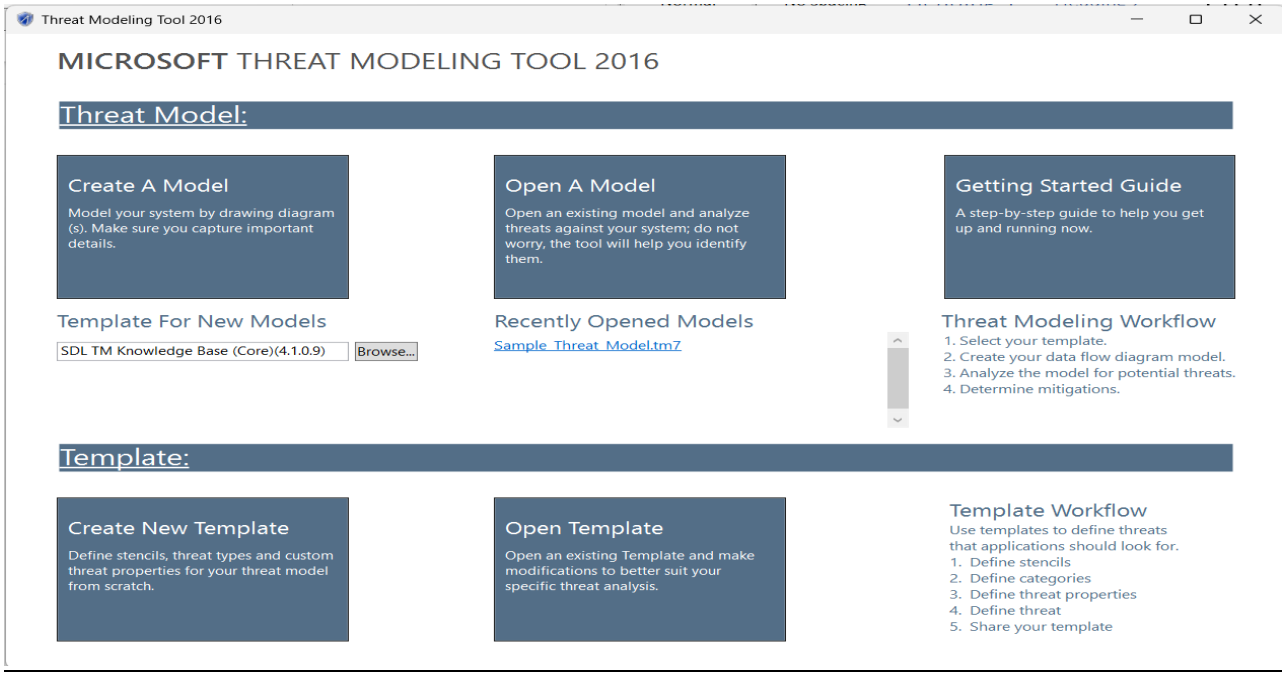
Objectives:

- Identify potential threats.
- Assess the impact and likelihood of threats.
- Develop mitigation strategies.

Entities:

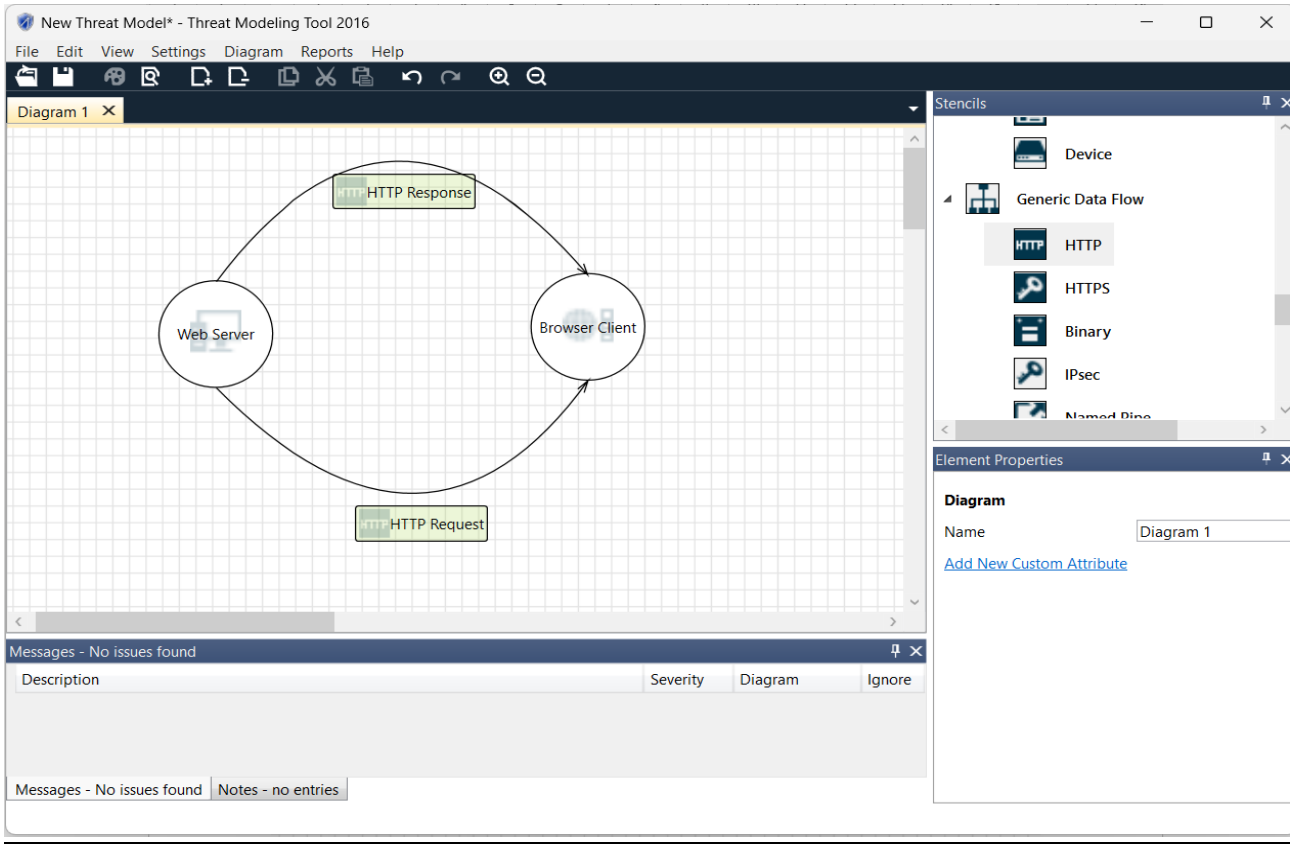
- Employee (External Entity)
- Web Server (Process)
- Database Server (Data Store)
- Authorization Server (Internal Entity)

➢ **Click On <u>Create A Model</u>**



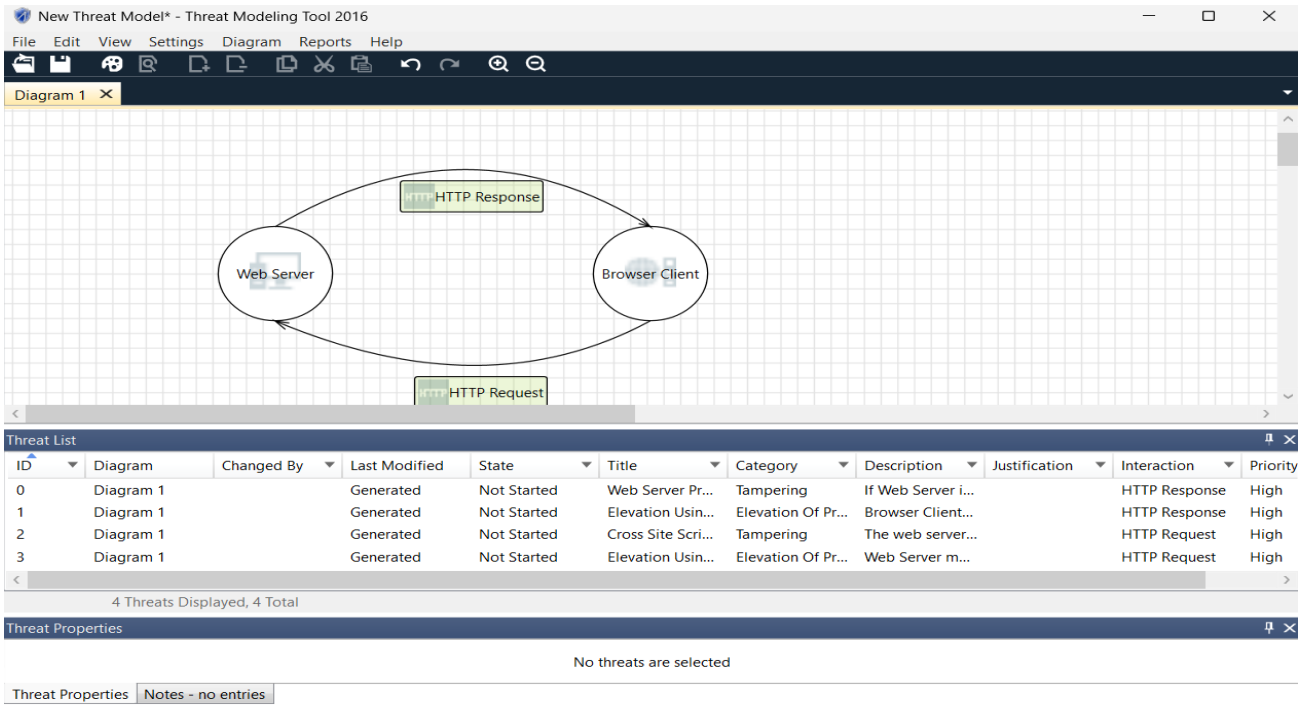
➢ Now the resultant canvas will be:

- Demo of Simple Web Application



➢ Identify and Analyse Threats:

Navigate to ***'View'*** then click ***'analysis view'***



The Data flow sequence will be.

Employee -> Web Application (Submit credentials)

- **Data Flow Type:** HTTP
- Description: Employee submits login credentials to the web application.

Web Application -> Authorization Server (Verify credentials)

- **Data Flow Type:** HTTPS
- Description: The web application sends the credentials to the authorization server for verification.

Authorization Server -> Web Application (Send account details)

- **Data Flow Type:** HTTPS

- Description: The authorization server sends the account details back to the web application.

Web Application -> Employee (Display account details)

- **Data Flow Type:** HTTP
- Description: The web application displays the account details to the customer.

Employee -> Web Application (Request Applying Leave)

- **Data Flow Type:** HTTPS
- Description: The employee requests a applying leave through the web application.

Web Server -> Authorization Server (Update Leave Account)

- **Data Flow Type:** HTTPS
- Description: The web server sends the leave request to the authorization server to update the leaves.

Web Server -> SQL Database Server(Initiate request for Update)

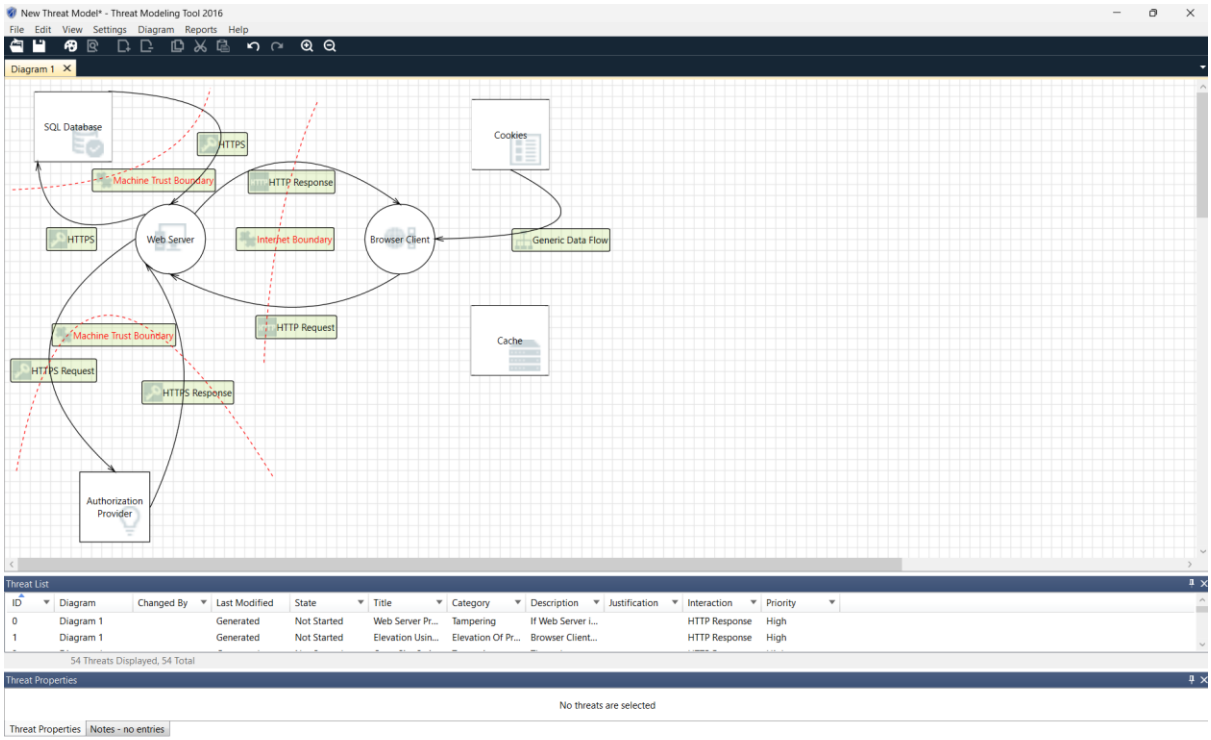
- **Data Flow Type:** HTTPS
- Description: The web server initiates the request with the database server

SQL Database Server -> Web Server (Confirm Update)

- **Data Flow Type:** HTTPS
- Description: The SQL Database Server confirms the update and sends the confirmation back to the web server.

Web Server -> Employee (Display HRMS System)

- **Data Flow Type:** HTTPS
- **Description:** The web server displays the leave status to the employee in HRMS System

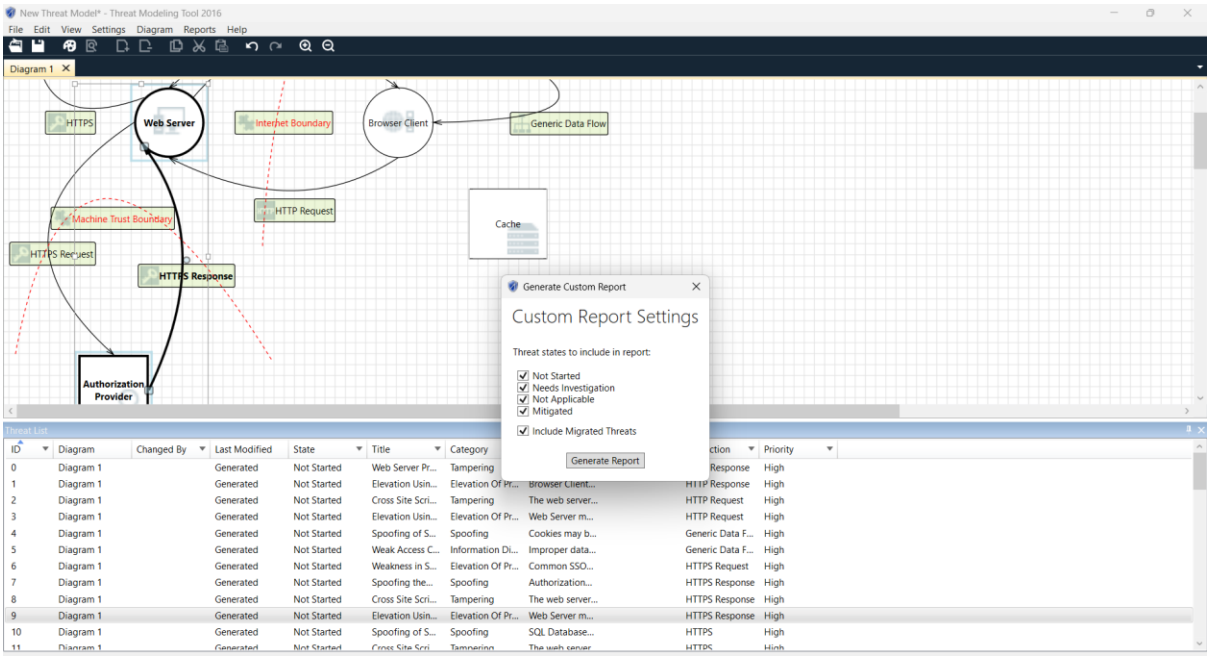


- Analysis View

Threat List

ID	Diagram	Changed By	Last Modified	State	Title	Category	Description	Justification	Interaction	Priority
0	Diagram 1		Generated	Not Started	Web Server Pr...	Tampering	If Web Server i...		HTTP Response	High
1	Diagram 1		Generated	Not Started	Elevation Usin...	Elevation Of Pr...	Browser Client...		HTTP Response	High
2	Diagram 1		Generated	Not Started	Cross Site Scri...	Tampering	The web server...		HTTP Request	High
3	Diagram 1		Generated	Not Started	Elevation Usin...	Elevation Of Pr...	Web Server m...		HTTP Request	High
4	Diagram 1		Generated	Not Started	Spoofing of S...	Spoofing	Cookies may b...		Generic Data F...	High
5	Diagram 1		Generated	Not Started	Weak Access C...	Information Di...	Improper data...		Generic Data F...	High
6	Diagram 1		Generated	Not Started	Weakness in S...	Elevation Of Pr...	Common SSO...		HTTPS Request	High
7	Diagram 1		Generated	Not Started	Spoofing the...	Spoofing	Authorization...		HTTPS Response	High
8	Diagram 1		Generated	Not Started	Cross Site Scri...	Tampering	The web server...		HTTPS Response	High
9	Diagram 1		Generated	Not Started	Elevation Usin...	Elevation Of Pr...	Web Server m...		HTTPS Response	High
10	Diagram 1		Generated	Not Started	Spoofing of S...	Spoofing	SQL Database...		HTTPS	High
11	Diagram 1		Generated	Not Started	Cross Site Scri...	Tampering	The web server...		HTTPS	High
12	Diagram 1		Generated	Not Started	Persistent Cros...	Tampering	The web server...		HTTPS	High
13	Diagram 1		Generated	Not Started	Weak Access C...	Information Di...	Improper data...		HTTPS	High
14	Diagram 1		Generated	Not Started	Spoofing of D...	Spoofing	SQL Database...		HTTPS	High
15	Diagram 1		Generated	Not Started	Potential SQL I...	Tampering	SQL injection i...		HTTPS	High
16	Diagram 1		Generated	Not Started	Potential Exces...	Denial Of Servi...	Does Web Ser...		HTTPS	High
17	Diagram 1		Generated	Not Started	Potential Data...	Repudiation	Web Server cla...		HTTPS	High

- We can choose a specific threat and check its properties



- A report is generated which lists all the threats in our model

Threat Modeling Report

Created on 24-05-2024 21:48:03

Threat Model Name:

Owner:

Reviewer:

Contributors:

Description:

Assumptions:

External Dependencies:

Threat Model Summary:

Not Started	54
Not Applicable	0
Needs Investigation	0
Mitigation Implemented	0
Total	54
Total Migrated	0