

## **ABSTRACT**

Electronic payment has now become a life style and needs for some community, especially for urban society that expect a practical and fast transaction. Within the development in technology in the computer network, especially with the existence of internet access, an online payment is now become popular. Even people now can use this online service to buy things from other country with only use their personal computer connected on internet access.

The most important thing in computer network is the security in sending data, there are so many cyber crimes we had heard from any media. Criminals use the security fissure to be interrupted and then doing some data manipulations. Those criminals may just want to look at something, or may steal anything like money, secret data, etc.

Secure Socket Layer (SSL) is a protocol that is developed and used to prevent the security problems that could threat transaction process through internet access. SSL is supported also with a good encryption facility and also completed with a secure handshaking and data transfer to solve the existence of internet network crime.

Within the existence of cyber crime in the internet, so this final project will analyze the security system that is provided by the system, including including attack simulation and analysis that is compiled based on the exist references.

The implemented security system is able to provide the security parameters, they are confidentiality, authority, authentication, integrity, and non-repudiation. The SSL protocol is also able to anticipate man-in-the-middle attack simulation and still secure enough from brute-force attack in the next several years. The weakness of the system is the susceptibility from denial of service attack, that could make the network performance of the server is being very busy, and could make 2,31 % transaction failure from 15000 transaction simulation.

Keywords : encryption, electronic payment, network security, SSL