CSE 201 Project High Level Design Document

Team Member Names

Team 8:

- Robin Kay
- Scott Van der Weil
- Tae Won
- Jack Schroer

Team Project Title

Testudo

Project Description

Testudo is a signing-only, offline cryptocurrency wallet. Testudo provides cryptocurrency investors and traders with a secure platform to generate private and public keys, hash public keys for transactions, and sign transactions for verification. It implements signing and keygen algorithms using Java, as well as provide users with a graphical interface for ease of use. Users can also elect to move private and public keys to cold storage.

Overall Design Description

Testudo is object oriented and is composed of frontend software and a user interface. The program is heavily reliant on the fluidity and flexibility of the encryption algorithms, so the algorithms will be implemented in standalone classes. User interaction classes include TxSign, PrivateGen, PublicGen, and ColdStorage to connect algorithm implementation to the UI. Our UI uses JFrame as well as utilizes the GridBagLayout to offer us a good level of customizability. A class Key maintains a record of all user keys generated and used, and implements a deletion function to preserve security when using Cold Storage.

UML Diagram 1

These Diagrams show the keygen process of the program. It utilizes three classes, KeyHolder, PrivateKey, and KeyGen. The Use Cases diagrammed are the possible uses for this part of the program, and the sequence diagram is a depiction of processes carried out when adding a key, public or private, to the list of keys.