**Homework 4**

1. a) + b) Associating user’s addresses with balance: mapping from address to value, i.e.

mapping(address => uint) balance;

1. a) + b) How to read balance from contract? Either: Getter method (i.e. getBalance(…)), or make the balance mapping public (i.e. mapping(address => uint) public balance; ).
2. All total supply to owner of contract: balance[owner] = totalSupply;
3. a) Sender’s address not required as function is called by a user whose address is known when the function call is made. When the function is called, msg.sender is a given parameter which can be used without requiring manual input.

b) If sender’s address could be given as a parameter, a third-party user could send an amount from a wallet which is not their own to another wallet, i.e. tokens could be stolen from wallets by using the transfer function.

1. event Transfer(uint \_amount, address \_recipientAddress)
2. struct Payment {

uint amount;

address recipientAddress;

}

1. function getPayments(address \_address) public view returns (Payment[] memory) {

return payments[\_address];

}