

# Homework 7

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## Adding more functionality to the Volcano Coin contract

1. We made a payment mapping, but we haven't added all the functionality for it yet. Write a function to view the payment records, specifying the user as an input. What is the difference between doing this and making the mapping public?

```
//If we set the mapping to public and call the default getter fn we will
have to specify both the mapping key
//and the array position. This will return a single a tuple of a single
Payment struct/entry

//Writing our own function we can return the whole array for a given
address.

function getPayments(address index) public view returns (Payment[] memory)
{
    Payment[] memory arr = payments[index];
    return arr;
}
```

2. For the payments record mapping, create a function called `recordPayment` that takes
  1. the sender's address,
  2. the receiver's address and
  3. the amount as an input, then creates a new payment record and adds the new record to the user's payment record.

```
function _recordPayment(address from, address to, uint256 amount) private {
    payments[from].push(Payment(amount, to));
}
```

3. Each time we make a transfer of tokens, we should call the this `recordPayment` function to record the transfer.

```
function transfer(uint256 amount, address to) public {
    ...
    _recordPayment(msg.sender, to, amount);
    ...
}
```