

Implementing Software Architecture Model

Architecture:

Client/Server

Programming Languages:

Client: Java

Server: Java

Communication Between Client and Server:

TCP/IP.

Server listens on port 41114 (unless directed otherwise).

Client connects to localhost on port 41114 (unless directed otherwise).

Protocol includes the following messages sent by clients to the server:

dump

Used by ManagerUI to retrieve a list of items from the database

printreports

Used by ManagerUI to prematurely trigger report printing

getitem <itemid: int>

Used by all clients to retrieve item details

sold <itemid: int>

Used by CustomerUI to indicate that an item was sold

incitemqty <itemid: int> <qty: int>

Used by RestockerUI to indicate a certain number of items is being added to the inventory

newitem <itemid: int> <threshold: int> <qty: int> <price: double> <discount: double>

Used by RestockerUI to add a new item to the database

updateitem name <name: String>

Used by ManagerUI to update the name of an item in the database

updateitem price <price: int>

Used by ManagerUI to update the price of an item in the database

updateitem discount <discount: double>

Used by ManagerUI to update the discount of an item in the database

updateitem qty <qty: int>

Used by ManagerUI to update the quantity of an item in the database

updateitem threshold <threshold: int>

Used by ManagerUI to update the threshold of an item in the database

authdebit <cardno: long> <pin: int> <cost: double>

Used by CustomerUI to attempt authorization of debit card transaction

authcredit <cardno: long> <cost: double>

Used by CustomerUI to attempt authorization of credit card transaction

The following responses are sent from the server to the clients:

dump <dbline: String>

In response to «dump» from ManagerUI, provides list of contents in database

item <itemid: int> <name: String> <price: double> <discount: double> <qty: int> <threshold: int>

In response to «getitem» from all clients, provides details of item with ID that was provided

item null

In response to «getitem» from all clients, indicates that no item by given ID number exists

auth bad insuff

In response to «authcredit» and «authdebit» from CustomerUI, indicates insufficient funds on card

auth bad badpin

In response to «authdebit» from CustomerUI, indicates PIN is incorrect

auth bad norecog

In response to «authdebit» and «authcredit» from CustomerUI, indicates card is not recognized.

auth bad deactiv

In response to «authcredit» and «authdebit» from CustomerUI, indicates card is deactivated.

auth ok <authnum: int>

In response to «authcredit» and «authdebit» from CustomerUI, indicates successful transaction.

The following responses are expected from the Authorization Service Center to the server:

-1

Indicates insufficient funds

-2

Indicates wrong PIN

-3

Indicates card number not recognized

-4

Indicates card was deactivated

<authnum: positive int>

Indicates success of transaction

Database:

MySQL/MariaDB