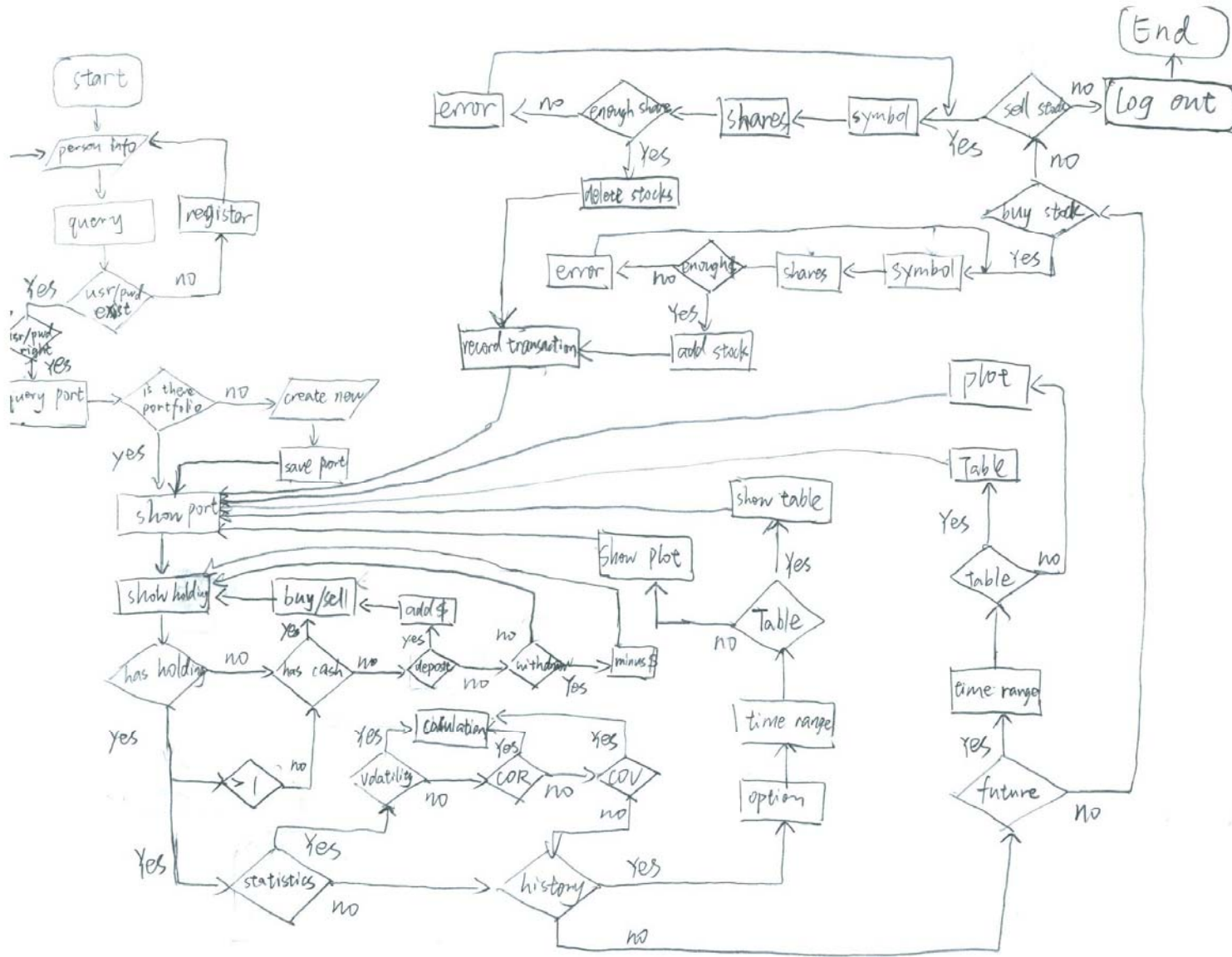


1.



login

usr

pwd

input info/writing info

portfolio sys

manage portfolio

create portfolio

manage cash

function display

manage portfolios

A

B

C

query user portfolio list

create portfolio

name

cash ☒

input/save name/

cash

portfolio

dep ☒ with ☒

do back

choose portfolio/operation

portfolio A

AAPL	1	3	5	110
IBM	2	4	6	110
G	5	6	7	990

history

future

statistic

buy stock

sell stock

query daily info of holdings,
listing holdings.

buy stock

symbol

shares

☒ return

record transaction
change shares.cash

sell stock

symbol

shares

☒ return

record transaction
change shares.cash

statistics

holdings A ☒ B ☒ C ☒

options a ☐ b ☐ c ☐

time to

low high Beta

return

A B C

opt - - -

opt - - -

return

choose time range
to calculate

history

holding. A ☒ B ☒ C ☒

options high ☒ low ☒ close ☐

open ☐ volume ☐

time. to

reset ☒

1 month

1 year

5 day

Table ☒

plot ☒

query

return

display option and do query

Table

opt1. opt2

return



Future

holdings A ☒ B ☒ C ☒

Table ☒ Plot ☒

now to

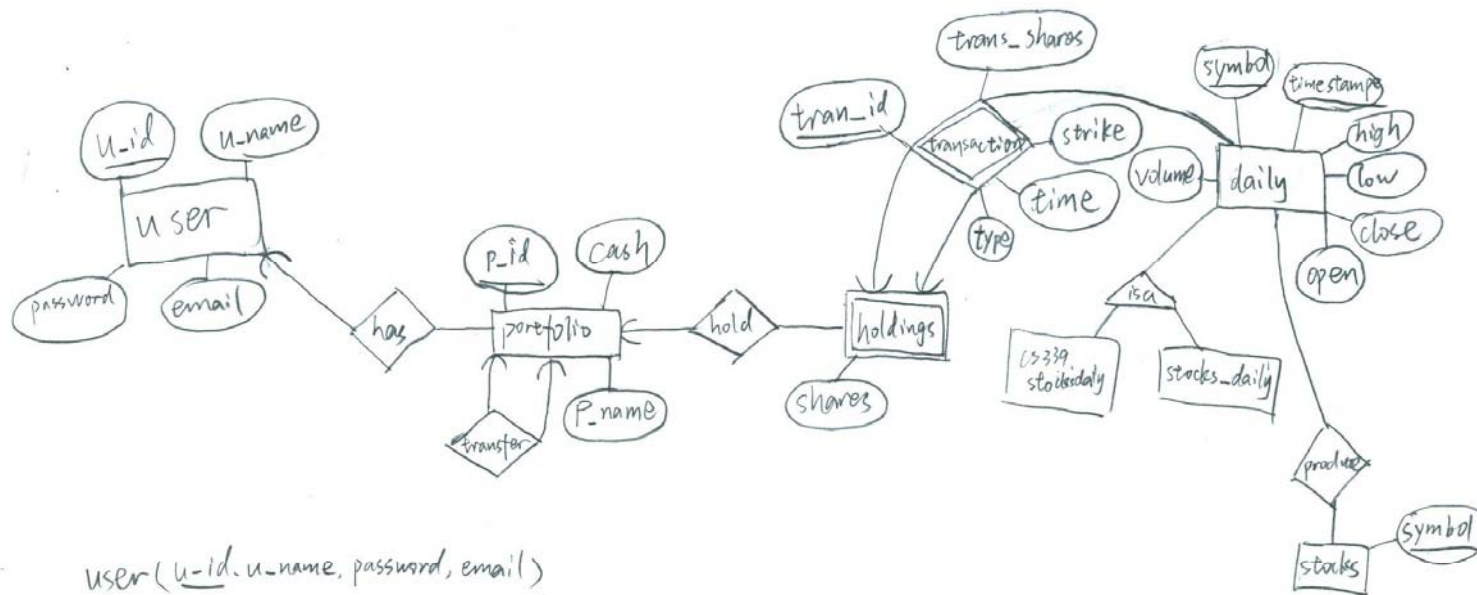
5 day ☒

10 day

1 month

See

return



4.

create table portfolio_users (

name varchar(64) not null primary key,

password VARCHAR(64) NOT NULL,

```
constraints pwd_work CHECK (password LIKE '_____%'),
email  varchar(256) not null UNIQUE,
constraint email_work CHECK (email LIKE '%@%')
);
```

```
create table portfolio_accounts (
    id number not null primary key,
    --user name
    owner varchar(64) not null references portfolio_users(name) on delete cascade,
    --portfolio name
    p_name varchar(64) not null,
    cash number not null, constraint cash_positive CHECK(cash >=0)
);
```

```
CREATE SEQUENCE portfolio_accounts_id
MINVALUE 1
START WITH 1
INCREMENT BY 1
CACHE 1024;
```

```
create table stocks (
    symbol  varchar(10) not null primary key
);
```

```
create table stocks_daily (
    symbol  varchar(64) not null,
    timestamp number not null,
    open number not null,
    high number not null,
    low number not null,
    close number not null,
    volume number not null,
    constraint sd_pk primary key(symbol,timestamp)
```

);

```
create table stock_holdings (  
    portfolio_id number not null references portfolio_accounts(id) on delete cascade,  
    symbol varchar(10) not null references stocks(symbol) on delete cascade,  
    share_amount number not null,  
    constraint amount_positive CHECK(share_amount >=0),  
    constraint sh_pk primary key(portfolio_id, symbol)  
);
```

```
create table stock_transactions (  
    id number not null primary key,  
    portfolio_id number not null references portfolio_accounts(id) on delete cascade,  
    symbol varchar(10) not null references stocks(symbol) on delete cascade,  
    share_amount number not null,  
    transaction_type number not null,  
    strike_price number not null,  
    transaction_time timestamp not null  
);
```

```
CREATE SEQUENCE stock_transactions_id  
MINVALUE 1  
START WITH 1  
INCREMENT BY 1  
CACHE 1024;
```

```
CREATE view stocks_view1 as select * from cs339.stocksdaily union all select * from stocks_daily;
```

```
INSERT INTO stocks (symbol) select distinct symbol from cs339.stockssymbols;  
quit;
```

5.

```
select symbol,share_amount,strike_price,share_amount*strike_price,transaction_type,transaction_time from stock_transactions where portfolio_id =$p_id and symbol='$symbol'
```

select avg((l.close - 12.79434381270903010033444816053511705686)*(r.close - 1528.879796942188246536072623029144768275)) from Stocks_view1 l join Stocks_view1 r on l.timestamp=r.timestamp where l.symbol='INTL' and r.symbol='^IXIC'choose at least two stocks.

"select sum(share_amount * strike_price) from stock_transactions where portfolio_id = ? and transaction_type =2"

select sum(share_amount * strike_price) from stock_transactions where portfolio_id = ? and transaction_type =1

select * from (select timestamp,close from cs339.stocksdaily where symbol='G' and timestamp >= 1383851804 and timestamp <= 1384456604 union all select timestamp,close from stocks_daily where symbol = 'G' and timestamp >= 1383851804 and timestamp <= 1384456604) order by timestamp

insert into stocks_daily (symbol,timestamp,open,high,low,close,volume) VALUES (?, ?, ?, ?, ?, ?, ?)

select cash from portfolio_accounts where id=?

select avg((l.open - 14.04524438986267723568158981801942614715)*(r.open - 14.04524438986267723568158981801942614715)) from cs339.StocksDaily l join cs339.StocksDaily r on l.timestamp=r.timestamp where l.symbol='G' and r.symbol='G'

select symbol,share_amount from stock_holdings where portfolio_id=? and share_amount > 0"

update portfolio_accounts set cash = cash +? where owner=? and id=?

select * from portfolio_accounts where owner=?

select p_name,cash from portfolio_accounts where owner=?

insert into portfolio_accounts (id,owner,p_name,cash) values (portfolio_accounts_id.nextval,?, ?, ?)

select count(*) from portfolio_users where name=? and password=?

my @query_list = (

"insert into stock_transactions

```
(id,portfolio_id,symbol,share_amount,transaction_type,strike_price,transaction_time)
```

```
values(stock_transactions_id.nextval,$p_id,$symbol,$amount,1,$price,current_timestamp)",
```

```
"merge into stock_holdings using dual on (symbol='$symbol' and portfolio_id=$p_id)
```

```
when matched then update set share_amount=share_amount+$amount
```

```
when not matched then insert (portfolio_id,symbol,share_amount)
```

```
values ($p_id,$symbol,$amount)",
```

```
"update portfolio_accounts set cash=cash-$total where id=$p_id"
```

```
);
```

```
my @query_list = (
```

```
"insert into stock_transactions
```

```
(id,portfolio_id,symbol,share_amount,transaction_type,strike_price,transaction_time)
```

```
values(stock_transactions_id.nextval,$p_id,$symbol,$amount,2,$price,current_timestamp)",
```

```
"merge into stock_holdings using dual on (symbol='$symbol')
```

```
when matched then update set share_amount=share_amount-$amount
```

when not matched then insert (portfolio_id,symbol,share_amount)

values (\$p_id,\$symbol,\$amount)",

"update portfolio_accounts set cash=cash+\$total where id=\$p_id"

);