

## Excirsise 1

### Set Up:

\$HOME/advanceKDB/common/env.sh

Set Q Location & Port Variables suitable for local machine

### Q1,2,3 & 4

Start System:

```
cd $HOME/advanceKDB/scripts
./ KDBcontrol start all
```

### Q5

**File:** \$HOME/advanceKDB/common/log.q & log4q.q

**TPLog:** \$HOME/advanceKDB/SRC/TP/log

### Q6

**File:** \$HOME/advanceKDB/scripts/KDBcontrol.sh

**usage:**

./KDBcontrol.sh	//Shows Usage & modules
./KDBcontrol.sh start all	// starts all modules
./KDBcontrol.sh stopt all	// Stops all modules
./KDBcontrol.sh start <module>	//Starts Individual module
./KDBcontrol.sh stop <module>	//Stops Individual module
./KDBcontrol.sh test	// Which components are running & details

### Q7

**File:** \$HOME/advanceKDB/scripts/logSeperate.sh

```
./logSeperate.sh $HOME/advanceKDB/log/TP2020.05.25
```

### Q8

**Script:** \$HOME/advanceKDB/scripts/loadCSV.sh

**QFile:** \$HOME/advanceKDB/common/CSVLoad.q

**Sample Files:** \$HOME/advanceKDB/files/trade.csv & quote.csv

**Usage:**

```
./loadCSV.sh // Shows file usage  
./loadCSV.sh $HOME/advanceKDB/files/quote.csv quote 1
```

**Q9**

**Script:** \$HOME/advanceKDB/scripts/EODProc.sh

**Usage:**

```
./$HOME/advanceKDB/scripts/EODProc.sh $HOME/advanceKDB/log/TP2020.05.25
```

**Q10**

1. Update the schema in sym.q file
2. On system start up this new schema will flow downstream to all subscribers.
3. Use DB maint to add the new col to the historical trade and quote tables.
4. Edit logs from prior day to include the additional col to prevent a replay error

**Excirsise 2**

**Q 1**

- A) Due to small size of log it was possible to locate by just looking at the log. Errors spotted:
1. Log[2;9] different type sym
  2. Log[6;7;8] one log line has been separated to 3 values

```
old:`:tplog;  
new:hsym `$/home/cruisea/advanceKDB/Q2/newlog";  
new set ();  
LH: hopen new;  
  
upd:{[t;x] x:(value flip x);  
      x[0]:`$string x[0];  
      LH enlist(`upd;t;x)}  
  
-11!(5;old)  
  
get new
```

**Q 2**

T1: Missing .d.

Solution: create a new .d file/copy from t2

T2: Problem : Price is a value short causing a length error.

Solution: append a null to the price col on disk and reload in again

```
`t2/price set (get` t2/price),0n
```

T3: Problem: Table not enumerated.

Solution: load table3 and resave down using .Q.en

```
`t3/ set .Q.en[`:.;t3]
```

### Q 3

#### Ordering query constraints

Qsql works by whittling down the results constraint by constraint. Thus ordering queries in order to reduce the size of the result set as quick as possible improves speed

E.g. put the date constraint first, this will quickly reduce the results, then place the most expensive operation at the end so that it is running over the smallest set data as possible.

Pre-defined queries can be written and users restricted to them, in order to maximize constraint ordering.

#### Single KDB HDB instance

A single HDB instance causes delays when multiple users are executing queries at the same time as each query is executed sequentially. By starting multiple KDB HDB instances and using a GW with a load balancer as a single entry point the will take the pressure of a single instance and reduce delays for users.

#### Lack of Attributes

The HDB tables may not have attributes applied to relevant cols. By applying attributes to cols it can greatly improve query Performance

### Q 4

```
StringtoDate:{@[x;where (type each x)=10h;"D"$]}
```

## Excirsise 3

### Q1 Python API

**Script:** AdvanceKDB/Q3/python/python\_API.py

**Set Up:**

1. set to correct port/host : `"qconnection.QConnection(host='<HOST>', port=<PORT>)"`
2. set to correct File path : `"read_csv('<YOUR FP>/APIQuote.csv')"`

Run: python3 python\_FH.py

## **Q2 C API**

**Script:** AdvanceKDB/Q3/API/c/publish.c

### **Setup**

1. TP system must be started
2. In publish.c Configure hostname= "<Your host>";
3. In publish.c Configure usernamePassword= "<UNAME>:<PWORD>"

### **Run**

1. gcc -m64 -DKXVER=3 -o pub publish.c c.o -lpthread
2. ./pub
3. Check Quote table in RDB has populated

## **Q3 Web Interface**

**Script:** AdvanceKDB/Q3/Web Interface/html.q & tradeFilter.html

### **Set Up:**

1. In tradeFilter.html configure : WebSocket("ws://<SERVER:PORT>/")

Enter symbol in the prompt box and the filtered trade table will be returned