REST Exercise

This exercise objective on implementation of REST API including with JDBC connect database and manipulate data with CRUD.

Table schema

```
CREATE TABLE ttransaction (
      transid VARCHAR(50) NOT NULL COMMENT 'UUID',
      userid VARCHAR(50) NOT NULL COMMENT 'tuser.userid',
      transdate DATE NOT NULL,
      journalid VARCHAR(50) NOT NULL COMMENT 'tjournal.journalid',
      transno INT(11) NOT NULL COMMENT 'sequence number',
      amount DECIMAL(20,4) NOT NULL,
      remark VARCHAR(200) NULL DEFAULT NULL,
      transtime DATETIME NULL DEFAULT NULL,
      editdate DATE NULL DEFAULT NULL,
      edittime TIME NULL DEFAULT NULL,
      PRIMARY KEY (transid),
      UNIQUE INDEX userid_trxdate_journalid (userid, transdate, journalid)
);

CREATE TABLE tjournal (
      journalid VARCHAR(50) NOT NULL COMMENT 'UUID',
      journalname VARCHAR(100) NOT NULL,
      journaltype VARCHAR(1) NOT NULL DEFAULT '0' COMMENT
      '0=Payment,1=Receive',
      amount DECIMAL(20,4) NOT NULL DEFAULT '0.0000',
      editdate DATE NULL DEFAULT NULL,
      edittime TIME NULL DEFAULT NULL,
      PRIMARY KEY (journalid)
);
```

Specification

1. Create REST API
   1.1 input format can be query string or json string format
   1.2 output is json format like below

```
{
   "head": {
      "model": "transaction",
      "method": "create",
      "errorflag": "Y",
      "errorcode": "400",
      "errordesc": "Not accept"
   },
  "body": {
   }
}
```

   a. head
      model = class name or model name
      method = method name
      errorflag = Y is error and N if not error
      errorcode = user defined error code
      errordesc = user defined error description
   b. body is user defined data attributes format

2. CRUD
   a. defined resource name = transaction
   b. create : try to insert new record with
      i. path = create
      ii. http method = POST
      iii. transid = UUID if not specified
      iv. transdate = current date if not specified
      v. userid = ‘tester’

vi. journalid = Transaction from parameter
vii. transno = 1
viii. amount = Amount from parameter
ix. remark = Remark from parameter
x. transtime = current timestamp
xi. editdate = current date
xii. edittime = current time

ex. request: json string

{ "journalid":"1001", "amount": 100, "remark":"Noodle" }

Example response

```
{
   "head": {
      "model": "transaction",
      "method": "create",
      "errorflag": "N",
      "errorcode": "0",
      "errordesc": ""
   },
  "body": {
        "transid": "498e18b8-ac0f-11ed-809e-98fa9bd6bd8e"
   }
}
```

c. retrieve : try to retreive record with
   i. path = retrieve
   ii. http method = GET
   iii. using path param = transid
   iv. query statement

select ttransaction.*,tjournal.journalname,tjournal.journaltype

from ttransaction,tjournal

where ttransaction.transid = ?

and ttransaction.journalid = tjournal.journalid

ex. request: with transid = 498e18b8-ac0f-11ed-809e-98fa9bd6bd8e

http://localhost:8080/transaction/retrieve/498e18b8-ac0f-11ed-809e-98fa9bd6bd8e

Example response

```
{
  "head": {
    "model": "transaction",
    "method": "retrieve",
    "errorflag": "N",
    "errorcode": "0",
    "errordesc": ""
  },
  "body": {
      "transid": "498e18b8-ac0f-11ed-809e-98fa9bd6bd8e",
      "transdate": "2023-02-01",
      "journalid": "1001",
      "transno": 1,
      "amount": 120.00,
      "remark": "Noodle + Coffee",
      "journalname": "Breakfast",
      "journaltype": "0"
  }
}
```

d. update : try to update record with

   i. path = update
   ii. http method = PUT
   iii. transid = from parameter
   iv. journalid = from parameter
   v. amount = from input

vi. remark = from input
vii. editdate = current date
viii. edittime = current time
ix. query statement
update ttransaction set journalid=?, amount=?, remark=?
where transid=?

ex. request: json string

{ "transid": " 498e18b8-ac0f-11ed-809e-98fa9bd6bd8e",
"journalid": "1001", "amount": 80, "remark": "Noodle" }

Example response

```
{
   "head": {
      "model": "transaction",
      "method": "update",
      "errorflag": "N",
      "errorcode": "0",
      "errordesc": ""
   },
  "body": {
   }
}
```

e. delete : try to delete record with
i. path = delete
ii. http method = DELETE
iii. using query param = transid
iv. transid = from parameter
v. query statement
delete from ttransaction where transid=?

ex. request: transid = 498e18b8-ac0f-11ed-809e-98fa9bd6bd8e http://localhost:8080/transaction/delete?transid=498e18b8-ac0f-11ed-809e-98fa9bd6bd8e

Example response

```
{
   "head": {
      "model": "transaction",
      "method": "delete",
      "errorflag": "N",
      "errorcode": "0",
      "errordesc": ""
   },
  "body": {
   }
}
```

f. find: try to find out all records specified by transaction date with
   i. path = find
   ii. http method = POST
   iii. query statement
   select
   ttransaction.*,tjournal.journalname,tjournal.journaltype
   from ttransaction,tjournal
   where ttransaction.transdate = ?
   and ttransaction.journalid = tjournal.journalid
   order by transno
   iv. transdate = from parameter with format dd/MM/yyyy or yyyy-MM-dd

ex. request: json string

{ "transdate": "2023-02-01" }

Example response

```
{
   "head": {
      "model": "transaction",
      "method": "find",
      "errorflag": "N",
      "errorcode": "0",
      "errordesc": ""
   },
  "body": {
          "transdate": "2023-02-01",
          "records": [ {
                    "transid": "498e18b8-ac0f-11ed-809e-98fa9bd6bd8e",
                    "transno": 1,
                    "amount": 120.00,
                    "remark": "Noodle + Coffee",
                    "journalid": "1001",
                    "journalname": "Breakfast",
                    "journaltype": "0"
          }, {
                    "transid": "5055f401-ac0f-11ed-809e-98fa9bd6bd8e",
                    "transno": 2,
                    "amount": 100.00,
                    "remark": "Fry Rice" ,
                    "journalid": "1002",
                    "journalname": "Lunch",
                    "journaltype": "0"
          }, {
                    "transid": "57781363-ac0f-11ed-809e-98fa9bd6bd8e",
                    "transno": 3,
                    "amount": 250.00,
                    "remark": "Steak",
                    "journalid": "1003",
                    "journalname": "Dinner",
                    "journaltype": "0"
          }, {
                    "transid": "44d814de-ac10-11ed-809e-98fa9bd6bd8e",
                    "transno": 3,
                    "amount": 1100.00,
                    "remark": null,
                    "journalid": "2002",
                    "journalname": "Commission",
                    "journaltype": "1"
          }]
   }
}
```