

Function: Search Item

Inputs: @NAME, @DESCRIPTION, @CONDITION, @PRICE, @TYPE

Outputs: NAME, DESCRIPTION, CONDITION, PRICE, TYPE

Pseudocode:

Connect to the database

Query = SELECT I.NAME, I.DESCRPTION, I.CONDITION, I.PRICE, I.TYPE FROM ITEM AS I WHERE
I.NAME = @NAME, I.DESCRPTION = @DESCRIPTION, I.CONDITION = @CONDITION, I.PRICE =
@PRICE, I.TYPE = @TYPE;

Parse Query

Execute Query

Close connection to the database

Function: View Item

Inputs: @ID

Outputs: NAME, DESCRIPTION, CONDITION, PRICE, TYPE, PICTURE, USERNAME, POST_DATE,
CONTENT

Pseudocode:

Connect to the database

Query1 = SELECT I.NAME, I.DESCRPTION, I.CONDITION, I.PRICE, I.TYPE, I.PICTURE FROM ITEM AS I
WHERE I.NAME = @NAME, I.DESCRPTION = @DESCRIPTION, I.CONDITION = @CONDITION, I.PRICE =
@PRICE, I.TYPE = @TYPE, I.ID = @ID;

Parse Query1

Execute Query1

Query2 = SELECT C.USERNAME, C.POST_DATE, C.CONTENT FROM COMMENT AS C WHERE
C.ITEM_ID = @ID;

Parse Query2

Execute Query2

Query3 = UPDATE ITEM SET PAGE_VISIT_COUNTER = PAGE_VISIT_COUNTER + 1 WHERE ID = @ID;

Parse Query3

Execute Query3

Close connection to the database

Notice: From our understanding, when a visitor or a client or an administrator views the page of an item, the

URL of the page he or she clicks actually is binding to the item's ID, and the server will process the request by searching the ID in the database, thus in this function **ID** will be given as input.

Function: Register

Inputs: @UCID, @CAMPUS_EMAIL_ADDRESS, @USERNAME, @PASSWORD,
@PASSWORD_QUESTION, @ANSWER_OF_PASSWORD_QUESTION, @ADDRESS, @PHONE_NUMBER

Outputs: None

Pseudocode:

Connect to the database

Query = INSERT INTO CLIENT

(ID, UCID, PASSWORD, PASSWORD_QUESTION, ANSWER_OF_PASSWORD_QUESTION, ADDRESS,
PHONE_NUMBER, USERNAME)

VALUES

(UUID_TO_BIN(UUID()), (SELECT UCALGARY_MEMBER.UCID FROM UCALGARY_MEMBER WHERE
UCALGARY_MEMBER.UCID = @UCID AND UCALGARY_MEMBER.CAMPUS_EMAIL_ADDRESS =
@CAMPUS_EMAIL_ADDRESS), @PASSWORD, @PASSWORD_QUESTION,
@ANSWER_OF_PASSWORD_QUESTION, @ADDRESS, @PHONE_NUMBER, @USERNAME);

Parse Query

Execute Query

Close connection to the database

Notice: Other attributes of CLIENT will be assigned by setting default values or using triggers in MySQL.

UUID_TO_BIN(UUID()) indicates a Universal Unique Identifier will be created in MySQL and will be returned in binary form as CLIENT.ID.

Function: Post Comments

Inputs: @ITEM_ID, @CLIENT_ID @CONTENT

Outputs: None

Pseudocode:

Connect to the database

Query = INSERT INTO COMMENT (ID, ITEM_ID, CLIENT_ID, CONTENT) VALUES (UUID_TO_BIN(UUID()),
@ITEM_ID, @CLIENT_ID, @CONTENT);

Parse Query

Execute Query

Close connection to the database

Function: Login

Inputs: @USERNAME, @PASSWORD

Outputs: ID, ADDRESS, ACCOUNT_STATUS, PHONE_NUMBER, DATE_OF_REGISTRATION

Pseudocode:

Connect to the database

Query1 = SELECT ID, ADDRESS, ACCOUNT_STATUS, PHONE_NUMBER, DATE_OF_REGISTRATION
FROM CLIENT WHERE PASSWORD = @PASSWORD AND USERNAME = @USERNAME;

Parse Query1

Execute Query1

Query2 = UPDATE CLIENT SET ACCOUNT_STATUS = 'ACTIVE' WHERE USERNAME = @USERNAME;

Parse Query2

Execute Query2

Close connection to the database

Function: Logout

Inputs: @USERNAME

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE CLIENT SET ACCOUNT_STATUS = 'OFFLINE' WHERE USERNAME = @USERNAME;

Parse Query

Execute Query

Close connection to the database

Function: Order Item

Inputs: @CLIENT_ID_OF_BUYER, @ITEM_ID, @ADDRESS_OF_RECEIVER,
@FIRST_NAME_OF_RECEIVER, @MIDDLE_INITIAL_OF_RECEIVER, @LAST_NAME_OF_RECEIVER,
@PHONE_NUMBER_OF_RECEIVER

Outputs: None

Pseudocode:

Connect to the database

Query1 = INSERT INTO BUYER (CLIENT_ID) VALUES (@CLIENT_ID_OF_BUYER);

Parse Query1

Execute Query1

Query2 = INSERT INTO ORDER (ID, ITEM_ID, TOTAL_PRICE, ADDRESS_OF_RECEIVER,

FIRST_NAME_OF_RECEIVER, MIDDLE_INITIAL_OF_RECEIVER, LAST_NAME_OF_RECEIVER,
PHONE_NUMBER_OF_RECEIVER, CLIENT_ID_OF_SELLER, CLIENT_ID_OF_BUYER)
VALUES
(UUID_TO_BIN(UUID()), @ITEM_ID, (SELECT PRICE FROM ITEM WHERE ITEM.ID = @ITEM_ID),
@ADDRESS_OF_RECEIVER, @FIRST_NAME_OF_RECEIVER, @MIDDLE_INITIAL_OF_RECEIVER,
@LAST_NAME_OF_RECEIVER, @PHONE_NUMBER_OF_RECEIVER, (SELECT
ITEM.CLIENT_ID_OF_SELLER FROM ITEM WHERE ITEM.ID = @ITEM_ID), @CLIENT_ID_OF_BUYER);
Parse Query2
Execute Query2

Close connection to the database

Function: Cancel Order

Inputs: @ORDER_ID, @ITEM_ID

Outputs: None

Pseudocode:

Connect to the database

Query1 = DELETE FROM ORDER WHERE ID = @ORDER_ID;

Parse Query1

Execute Query1

Query2 = UPDATE ITEM SET CLIENT_ID_OF_BUYER = NULL WHERE ID = @ITEM_ID;

Parse Query2

Execute Query2

Query3 = DELETE FROM BUYER WHERE CLIENT_ID NOT IN (SELECT CLIENT_ID_OF_BUYER FROM
ITEM);

Close connection to the database

Function: Edit Order

Inputs: @ORDER_ID

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE ORDER SET "attribute" WHERE ID = @ORDER_ID;

Parse Query

Execute Query

Close connection to the database

Function: Order Completed

Inputs: @ORDER_ID, @ITEM_ID

Outputs: None

Pseudocode:

Connect to the database

Query1 = DELETE FROM ORDER WHERE ID = @ORDER_ID;

Parse Query1

Execute Query1

Query2 = DELETE FROM ITEM WHERE ID = @ITEM_ID;

Parse Query2

Execute Query2

Query3 = DELETE FROM BUYER WHERE CLIENT_ID NOT IN (SELECT CLIENT_ID_OF_BUYER FROM ITEM);

Parse Query3

Execute Query3

Query4 = DELETE FROM SELLER WHERE CLIENT_ID NOT IN (SELECT CLIENT_ID_OF_SELLER FROM ITEM);

Parse Query4

Execute Query4

Close connection to the database

Function: Publish Item

Inputs: @CLIENT_ID, @ITEM_ID, @NAME, @DESCRIPTION, @CONDITION, @PRICE, @TYPE, @PICTURE

Outputs: None

Pseudocode:

Connect to the database

Query1 = INSERT INTO SELLER (CLIENT_ID) VALUES (@CLIENT_ID);

Parse Query1

Execute Query1

Query2 = INSERT INTO ITEM (ID, NAME, DESCRIPTION, CONDITION, PRICE, TYPE, PICTURE, CLIENT_ID_OF_SELLER)

VALUES

(UUID_TO_BIN(UUID()), @NAME, @DESCRIPTION, @CONDITION, @PRICE, @TYPE, @PICTURE,

@CLIENT_ID);
Parse Query2
Execute Query2

Close connection to the database

Function: Selected Published Item

Inputs: @CLIENT_ID

Outputs: BIN_TO_UUID(ID), NAME, DAYS_TO_EXPIRE, USERNAME_OF_BUYER

Pseudocode:

Connect to the database

Query = SELECT BIN_TO_UUID(ID), NAME, DAYSTOEXPIRE, (SELECT USERNAME FROM CLIENT WHERE CLIENT.ID = ITEM.CLIENT_ID_OF_BUYER) FROM ITEM WHERE ITEM.CLIENT_ID_OF_SELLER = @CLIENT_ID;

Parse Query
Execute Query

Close connection to the database

Notice: When the seller select his published items, he can only see its ID(will be highlighted and redirected to the URL of the item if he clicks), name, days to expire and buyer's username(if exists). The binary UUID of Item will be converted to string for better readalibity.

Function: Edit Item

Inputs: @ITEM_ID

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE ITEM SET "attribute" WHERE ID = @ITEM_ID;

Parse Query
Execute Query

Close connection to the database

Function: Unpublish Item

Inputs: @ITEM_ID

Outputs: None

Pseudocode:

Connect to the database

Query1 = DELETE FROM ITEM WHERE ID = @ITEM_ID;

Parse Query1

Execute Query1

Query2 = DELETE FROM SELLER WHERE CLIENT_ID NOT IN (SELECT CLIENT_ID_OF_SELLER FROM ITEM);

Parse Query2

Execute Query2

Close connection to the database

Function: Edit Account

Inputs: @CLIENT_ID

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE CLIENT SET "attribute" WHERE ID = @CLIENT_ID;

Parse Query

Execute Query

Close connection to the database

Function: View All Idea Lists

Inputs: @CLIENT_ID

Outputs: LIST_NUMBER, NAME, KEYWORD, DESCRIPTION

Pseudocode:

Connect to the database

Query = SELECT LIST_NUMBER, NAME, KEYWORD, DESCRIPTION FROM IDEA_LIST WHERE CLIENT_ID = @CLIENT_ID;

Parse Query

Execute Query

Close connection to the database

Function: Select Idea List

Inputs: @CLIENT_ID, @LIST_NUMBER

Outputs: LIST_NUMBER, NAME, KEYWORD, DESCRIPTION

Pseudocode:

Connect to the database

Query = SELECT LIST_NUMBER, NAME, KEYWORD, DESCRIPTION FROM IDEA_LIST WHERE
CLIENT_ID = @CLIENT_ID AND LIST_NUMBER = @LIST_NUMBER;

Parse Query

Execute Query

Close connection to the database

Function: Edit Idea List

Inputs: @CLIENT_ID, @LIST_NUMBER

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE IDEA_LIST SET "attribute" WHERE ID = @CLIENT_ID AND LIST_NUMBER =
@LIST_NUMBER;

Parse Query

Execute Query

Close connection to the database

Function: Delete Idea List

Inputs: @CLIENT_ID, @LIST_NUMBER

Outputs: None

Pseudocode:

Connect to the database

Query = DELETE FROM IDEA_LIST WHERE ID = @CLIENT_ID AND LIST_NUMBER = @LIST_NUMBER;

Parse Query

Execute Query

Close connection to the database

Function: Add Idea List

Inputs: @CLIENT_ID, @LIST_NUMBER, @NAME, @KEYWORD, @DESCRIPTION

Outputs: None

Pseudocode:

Connect to the database

Query1 = INSERT INTO IDEA_LIST (CLIENT_ID, LIST_NUMBER, NAME, DESCRIPTION) VALUES
(@CLIENT_ID, @LIST_NUMBER, @NAME, @DESCRIPTION);

Parse Query1

Execute Query1


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Query2 = UPDATE IDEA_LIST SET KEYWORD = JSON_ARRAY_APPEND(KEYWORD, '$', @KEYWORD)
WHERE CLIENT_ID = @CLIENT_ID AND LIST_NUMBER = @LIST_NUMBER;
```

Parse Query2

Execute Query2

Close connection to the database

Function: Delete Comments

Inputs: @COMMENT_ID

Outputs: None

Pseudocode:

Connect to the database

```
Query = DELETE FROM COMMENTS WHERE ID = @COMMENT_ID;
```

Parse Query

Execute Query

Close connection to the database

Function: Post Announcement

Inputs: @CONTENT, @TITLE

Outputs: None

Pseudocode:

Connect to the database

```
Query = INSERT INTO ANNOUNCEMENT (ID, CONTENT, TITLE) VALUES (UUID_TO_BIN(UUID()),
@CONTENT, @TITLE);
```

Parse Query

Execute Query

Close connection to the database

Function: Select Announcement

Inputs: @ID

Outputs: BIN_TO_UUID(ID), CONTENT, POST_DATE, TITLE,

Pseudocode:

Connect to the database

```
Query = SELECT BIN_TO_UUID(ID), CONTENT, POST_DATE, TITLE WHERE ID = @ID;
```

Parse Query

Execute Query

Close connection to the database

Function: Edit Announcement

Inputs: @ID

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE ANNOUNCEMENT SET "attribute" WHERE ID = @ID;

Parse Query

Execute Query

Close connection to the database

Function: Select Order

Inputs: @ID

Outputs: BIN_TO_UUID(ID), BIN_TO_UUID(ITEM_ID), TOTAL_PRICE, ADDRESS_OF_RECEIVER, STATUS, SHIPPING_METHOD, FIRST_NAME_OF_RECEIVER, MIDDLE_INITIAL_OF_RECEIVER, LAST_NAME_OF_RECEIVER, PHONE_NUMBER_OF_RECEIVER, DATE_OF_ORDER, BIN_TO_UUID(CLIENT_ID_OF_SELLER), BIN_TO_UUID(CLIENT_ID_OF_BUYER)

Pseudocode:

Connect to the database

Query = SELECT BIN_TO_UUID(ID), BIN_TO_UUID(ITEM_ID), TOTAL_PRICE, ADDRESS_OF_RECEIVER, STATUS, SHIPPING_METHOD, FIRST_NAME_OF_RECEIVER, MIDDLE_INITIAL_OF_RECEIVER, LAST_NAME_OF_RECEIVER, PHONE_NUMBER_OF_RECEIVER, DATE_OF_ORDER, BIN_TO_UUID(CLIENT_ID_OF_SELLER), BIN_TO_UUID(CLIENT_ID_OF_BUYER) WHERE ID = @ID;

Parse Query

Execute Query

Close connection to the database

Function: Edit Personal Account

Inputs: @ID

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE ADMINISTRATOR SET "attribute" WHERE ID = @ID;

Parse Query

Execute Query

Close connection to the database

Function: Add UCalgary_Member

Inputs: @UCID, @CAMPUS_EMAIL_ADDRESS, @DATE_OF_BIRTH, @GENDER, @BALANCE, @FIRST_NAME, @MIDDLE_INITIAL, @LAST_NAME

Outputs: None

Pseudocode:

Connect to the database

Query = INSERT INTO UCALGARY_MEMBER (UCID, CAMPUS_EMAIL_ADDRESS, DATE_OF_BIRTH, GENDER, BALANCE, FIRST_NAME, MIDDLE_INITIAL, LAST_NAME) VALUES (@UCID, @CAMPUS_EMAIL_ADDRESS, @DATE_OF_BIRTH, @GENDER, @BALANCE, @FIRST_NAME, @MIDDLE_INITIAL, @LAST_NAME);

Parse Query

Execute Query

Close connection to the database

Function: Select UCalgary_Member

Inputs: @UCID

Outputs: UCID, CAMPUS_EMAIL_ADDRESS, DATE_OF_BIRTH, GENDER, BALANCE, FIRST_NAME, MIDDLE_INITIAL, LAST_NAME

Pseudocode:

Connect to the database

Query = SELECT UCID, CAMPUS_EMAIL_ADDRESS, DATE_OF_BIRTH, GENDER, BALANCE, FIRST_NAME, MIDDLE_INITIAL, LAST_NAME FROM UCALGARY_MEMBER WHERE UCID = @UCID;

Parse Query

Execute Query

Close connection to the database

Function: Edit UCalgary_Member

Inputs: @UCID

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE UCALGARY_MEMBER SET "attribute" WHERE UCID = @UCID;

Parse Query

Execute Query

Close connection to the database

Function: Delete UCalgary_Member

Inputs: @UCID

Outputs: None

Pseudocode:

Connect to the database

Query = DELETE FROM UCALGARY_MEMBER WHERE UCID = @UCID;

Parse Query

Execute Query

Close connection to the database

Function: Select Client Account

Inputs: @CLIENT_ID

Outputs: BIN_TO_UUID(ID), UCID, PASSWORD, PASSWORD_QUESTION,
ANSWER_OF_PASSWORD_QUESTION, ADDRESS, ACCOUNT_STATUS, PHONE_NUMBER,
DATE_OF_REGISTRATION, USERNAME

Pseudocode:

Connect to the database

Query = SELECT BIN_TO_UUID(ID), UCID, PASSWORD, PASSWORD_QUESTION,
ANSWER_OF_PASSWORD_QUESTION, ADDRESS, ACCOUNT_STATUS, PHONE_NUMBER,
DATE_OF_REGISTRATION, USERNAME FROM CLIENT WHERE ID = @CLIENT_ID;

Parse Query

Execute Query

Close connection to the database

Function: Edit Client Account

Inputs: @CLIENT_ID

Outputs: None

Pseudocode:

Connect to the database

Query = UPDATE CLIENT SET "attribute" WHERE ID = @CLIENT_ID;

Parse Query

Execute Query

Close connection to the database

Function: Delete Client Account

Inputs: @CLIENT_ID

Outputs: None

Pseudocode:

Connect to the database

Query = DELETE FROM CLIENT WHERE CLIENT_ID = @CLIENT_ID;

Parse Query

Execute Query

Close connection to the database

Function: Login as an administrator

Inputs: @USERNAME, @PASSWORD

Outputs: None

Pseudocode:

Connect to the database

Query = DELETE FROM CLIENT WHERE CLIENT_ID = @CLIENT_ID;

Parse Query

Execute Query

Close connection to the database

Function: Login

Inputs: @USERNAME, @PASSWORD

Outputs: ID, ADDRESS, PHONE_NUMBER, DATE_OF_REGISTRATION, DATE_OF_BIRTH, USERNAME, FIRST_NAME, MIDDLE_INITIAL, LAST_NAME

Pseudocode:

Connect to the database

Query = SELECT ID, ADDRESS, PHONE_NUMBER, DATE_OF_REGISTRATION, DATE_OF_BIRTH, USERNAME, FIRST_NAME, MIDDLE_INITIAL, LAST_NAME FROM ADMINISTRATOR WHERE PASSWORD = @PASSWORD AND USERNAME = @USERNAME;

Parse Query

Execute Query

Close connection to the database