QUICKEMITAB

**Revision History**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
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| 1.0 | 27/04/2018 | Karim |  | Config APIS |
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**1.Introduction**

This document defines the design of EMI Solution, post successful approved transaction cashier will Login to Innoviti Tab (Android) Application and enter all the Card Holder, EMI Details once submitting all the data will stored in the Innoviti Server.

**2.Scope**

EMI Solution will architecture will be having the following scope

* Client authentication with the token for user login.
* Fetch the Bank list API.
* Fetch the Manufacture list API
* Fetch the Category list API.
* Fetch the Model list API.
* Fetch the EMI Tenure Calculated Details.
* Fetch the Bin List API.
* Capture the EMI, Card transaction Details.

**3.Design System Overview**

EMI-Solution in the present implementation relies on the Tab based Android App.

All Service offers are based on the EMI details.

A typical use case for the EMI Solution is:

* Post successful of the approved transaction, Cashier will login to

Innoviti App, once click on Login button.

* Client App will communicate with EMI solution Server.
* An HTTP Post request sent to EMI solution server with the client

And user login information to server.

* Server will send the authorization details to the client with token details and redirect to EMI Inquiry page.
* Cashier will select the Bank, product, Category, model, tenure details based on the product details purchased by the customer, All the details are fetched from the Innoviti EMI server.
* Cashier will enter the transaction and EMI details will be submitted.
* Server will store the all the detail in to db.

**4. EMI-Solution API**

Following is the proposed API for EMI Solution to be used. API Pass at the minimum as part of Http Header

**4.1.Accessing token from Authorization Server**

**Description :** Responsible for the verification of user identify and providing the

tokens.

**Verb**  : Http Post.

**Headers**: Authorization: Client id & Client Password.

**Body** : grant\_type :password ,

Username: demo,

password: password

**API Endpoint:** /oauth/token

**Snippet of Request**:

POST /auth-api/oauth/token HTTP/1.1  
 Accept: application/json;charset=UTF-8  
 Authorization: Basic dHJ1c3RlZC1hcHA6cGFzc3dvcmQ=  
 Content-Type: application/x-www-form-urlencoded  
 grant\_type=password&username=demo&password=password

[http://l92.168.0.32:9171/oauth/token](about:blank)

**Snippet of Response**:

{

   "access\_token": "fe0a38cf-3114-4bb6-9a1c-3bfec4a05511",

"token\_type": "bearer",

"refresh\_token": "0816dd60-1287-4a2a-ae94-121898ad58cb",

"expires\_in": 44999,

"scope": "read write trust",

"name": "Demo"

}

**4.2. Refresh token from Authorization Server**

**Description:** when access token expires responsible for the verification of user

identify and providing the tokens.

**Verb:** Http Post.

**Headers:** Authorization: Client id & Client Password.

**Body**: grant\_type: refresh\_token,

refresh\_token :0816dd60-1287-4a2a-ae94-121898ad58cb

**API Endpoint:** /oauth/token

**Snippet of Request**:

POST /auth-api/oauth/token HTTP/1.1

Accept: application/json;charset=UTF-8  
 Authorization: Basic dHJ1c3RlZC1hcHA6cGFzc3dvcmQ=  
 Content-Type: application/x-www-form-urlencoded

grant\_type=refresh\_token&refresh\_token=0816dd60-1287-4a2a-ae94-121898ad58cb

[http://l92.168.0.32:9171/oauth/token](about:blank)

**Snippet of Response**:

{

   "access\_token": "fe0a38cf-3114-4bb6-9a1c-3bfec4a05511",

"token\_type": "bearer",

"refresh\_token": "0816dd60-1287-4a2a-ae94-121898ad58cb",

"expires\_in": 44999,

"scope": "read write trust",

"name": "Demo"

}

**4.3. Fetch the Bank List API**

**Description:** Fetch the Bank list based on the user id.

**Verb:** Http Get.

**Headers:**

Authorization: Bearer fe0a38cf-3114-4bb6-9a1c-3bfec4a05511

Content-Type: application/json

**API Endpoint: /**issuerBank/fetchBankList/1

**Request**:

<http://ip:port/issuerBank/fetchBankList/1>

**Response**:

[

{

"issuerBankCode": 5,

"issuerBankDisplayName": "AXIS BANK",

"issuerMinEmiAmount": "5000.00"

},

{

"issuerBankCode": 6,

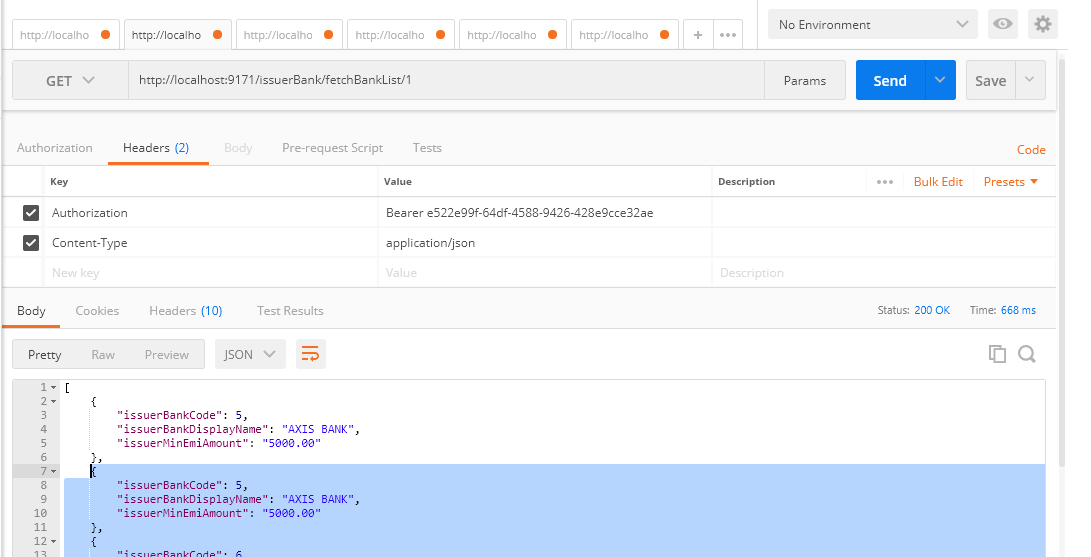
"issuerBankDisplayName": "HSBC BANK",

"issuerMinEmiAmount": "5000.00"

}

]

Screen Shot:



**4.4. Fetch the Manufacture or product List API**

**Description:** Fetch the Manufacture or Product list based on the user id and

bank id.

**Verb:** Http Get.

**Headers:**

Authorization: Bearer fe0a38cf-3114-4bb6-9a1c-3bfec4a05511

Content-Type: application/json

**API Endpoint:** manufacturer/fetchManufacturerList/1/5

**Request**:

http://ip:port/manufacturer/fetchManufacturerList/1/5

**Response**:

[

{

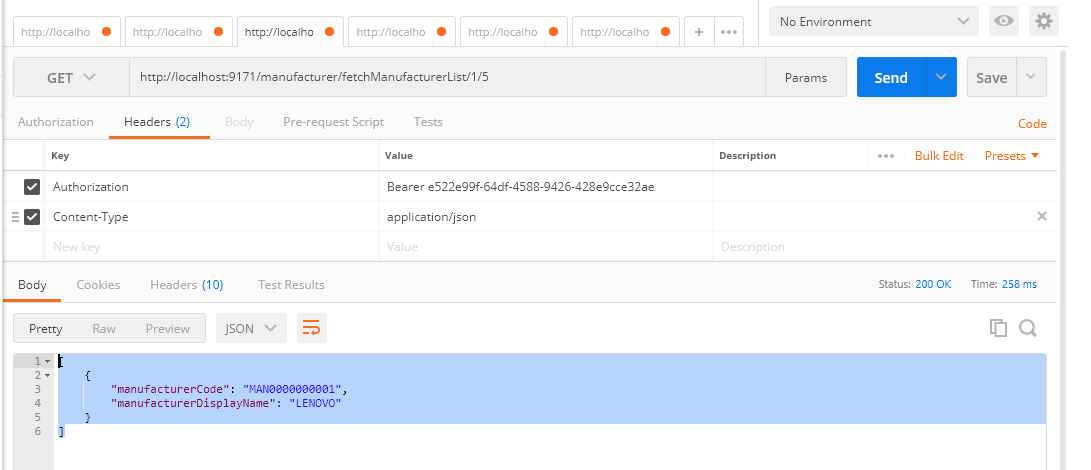
"manufacturerCode": "MAN0000000001",

"manufacturerDisplayName": "LENOVO"

}

]

**Screen Shot:**

****

**4.5. Fetch the Category List API**

**Description:** Fetch the Manufacture or Product list based on the user id,

bank code and Manufacture code.

**Verb:** Http Get.

**Headers:**

Authorization: Bearer fe0a38cf-3114-4bb6-9a1c-3bfec4a05511

Content-Type: application/json

**API Endpoint:** /category/fetchCategoryList/1/5/MAN0000000001

**Request**:

http://ip:port/category/fetchCategoryList/1/5/MAN0000000001

**Response**:

[

{

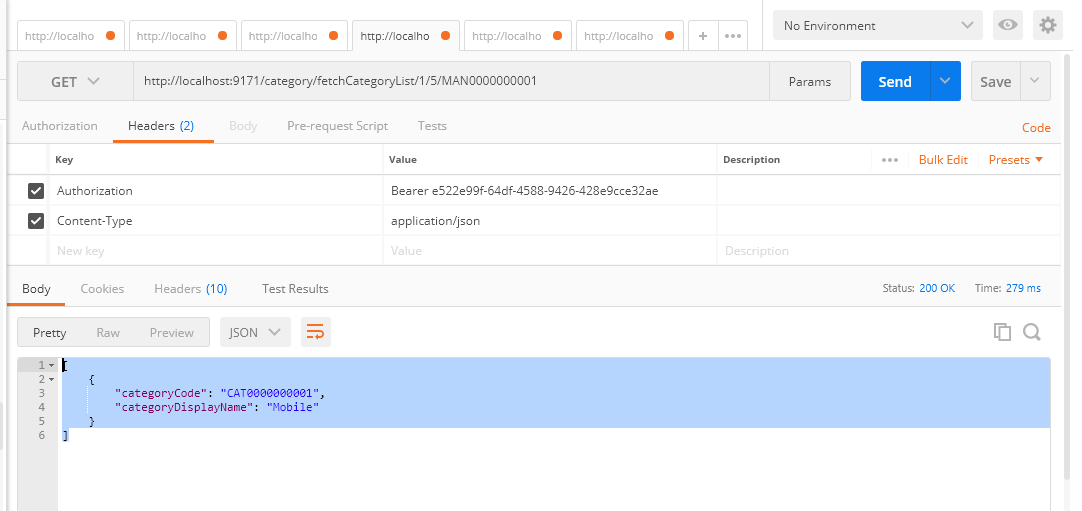
"categoryCode": "CAT0000000001",

"categoryDisplayName": "Mobile"

}

]

**Screen Shot:**

****

**4.6. Fetch the Model List API**

**Description:** Fetch the Manufacture or Product list based on the user id,

bank code, Manufacture code and Category code.

**Verb:** Http Get.

**Headers:**

Authorization: Bearer fe0a38cf-3114-4bb6-9a1c-3bfec4a05511

Content-Type: application/json

**API Endpoint:** model/fetchModelList/1/5/MAN0000000001/CAT0000000001

**Request**:

http://ip:port/model/fetchModelList/1/5/MAN0000000001/CAT0000000001

**Response**:

[

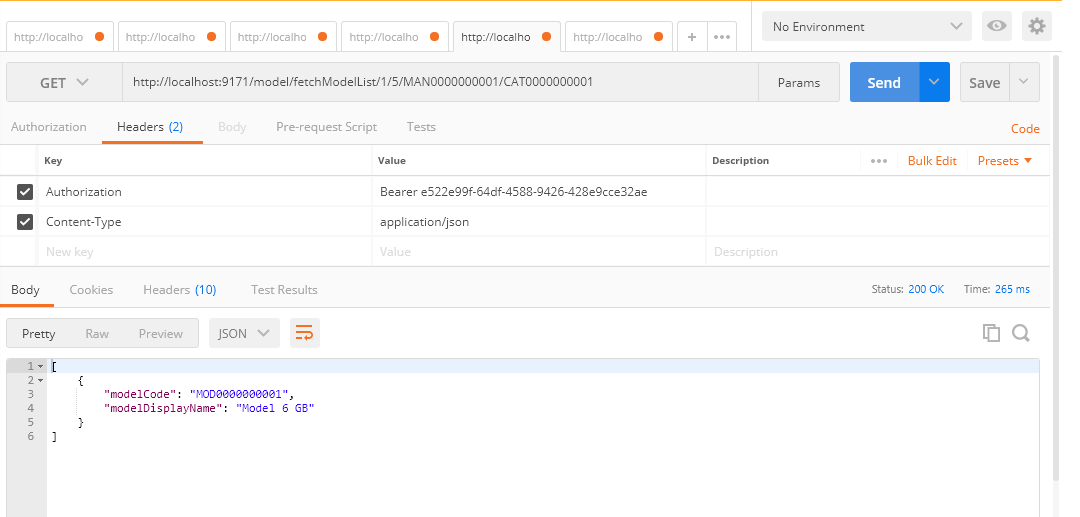
{

"modelCode": "MOD0000000001",

"modelDisplayName": "Model 6 GB"

}

]

****

**4.7. Fetch the EMI Tenure Details List API**

**Description:** Fetch the Manufacture or Product list based on the user id,

bank code, Manufacture code, Category code, Model code and

Amount.

**Verb:** Http Get.

**Headers:**

Authorization: Bearer fe0a38cf-3114-4bb6-9a1c-3bfec4a05511

Content-Type: application/json

**API Endpoint:** emiTenure/fetchEmiTenureList/1/5/MAN0000000001/CAT0000000001/MOD0000000001/000000200000

**Request**:

<http://ip:port/emiTenure/fetchEmiTenureList/1/5/MAN0000000001/CAT0000000001/MOD0000000001/000000200000>

**Response**:

*[*

*{*

*"emiTenureCode": "TR001",*

*"emiTenureDisplayName": "3 Months",*

*"emiTenureMonth": "3",*

*"productPrice": "5000.00",*

*"issuerRateOfInterest": "10.00%",*

*"montlyInstallments": "1694.52",*

*"issuerSchemeProcessingFee": "250.00",*

*"cashBackAmount": "2500.00",*

*"finalPayout": "5333.56",*

*"issuerSchemeCode": "SCH0000000001",*

*"issuerBankCode": 5,*

*"totalInterestAmount": "83.56"*

*}*

*]*

**4.8. Bin Validation API**

**Description:** Validate the bin base on bin and issuer bank code.

**Verb:** Http Get.

**Headers:**

Authorization: Bearer fe0a38cf-3114-4bb6-9a1c-3bfec4a05511

Content-Type: application/json

**API Endpoint:**

issuerBank/fetchBin/486269/5

**Request**:

<http://ip:port/issuerBank/fetchBin/486269/5>

**Response**:

*{*

*"responseCode": "00",*

*"responseMessage": "Success",*

*"issuerBin": null,*

*"schemeType": null,*

*"cardType": null,*

*"isoCountryCode": null*

*}*

**4.9. Capture EMI and Transaction details API**

**Description: S**tore EMI and transaction details in PCI server with supported attachment like Charge slip, Signature etc.

**Verb:** Http POST.

**Headers:**

Authorization: Bearer fe0a38cf-3114-4bb6-9a1c-3bfec4a05511

**Body:**

**Key:** files **value:** list of files like signature & chargeslip

**Key:** jsonEmiTxnProcessRequest **value :** { "primId": "1233241241234321431243389",

"userId": "1", "issuerBankCode": "1", "issuerSchemeCode": "12321141243", "txnAmount": "10000", "txnDateTime": "2018-05-16T17:12:55.444Z", "cardHolderName": "Asdfasdfsa", "mobileNo": "12341241", "maskCardNumber": "xxxxxxxxxxx", "encryptedCardNumber": "A=xdfdfdsgSdfadsf1fdsfsa", "invoiceNumber": "123213", "approvalCode": "12312441", "rrnNumber":"123456789", "emiDetails": { "emiTenureCode": "TR01", "emiTenureDisplayName": "3 Months", "emiTenureMonth": "3", "productPrice": "10000", "issuerRateOfInterest": "10.0", "montlyInstallments": "1234", "issuerSchemeProcessingFee": "0", "totalInterestAmount": "1234", "cashBackAmount": "0", "finalPayout": "11000" } }

**API Endpoint:**

/emiTxnProcess/saveEmiTxnProcessDetails

**Request**:

[http://ip:port/emiTxnProcess/saveEmiTxnProcessDetails](http://ip:port/issuerBank/fetchBin/486269/5)

**Response**:

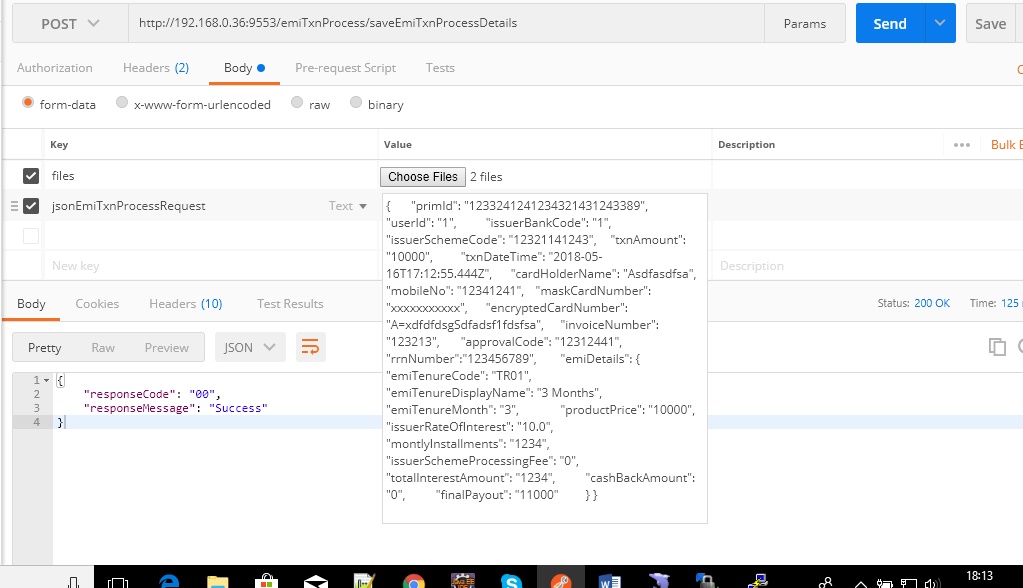
*{*

*"responseCode": "00",*

*"responseMessage": "Success",*

*}*

***Screen Shot:***

*}*****

**5. QuickEMI Data Model**

**5.1. QuickEMI-Configuration Data Model**

Following the database schema:

**CREATE** DATABASE emi\_configuration;

USE emi\_configuration;

**CREATE** **TABLE** oauth\_client\_details (

client\_id **VARCHAR**(255) **PRIMARY** **KEY**,

resource\_ids **VARCHAR**(255),

client\_secret **VARCHAR**(255),

scope **VARCHAR**(255),

authorized\_grant\_types **VARCHAR**(255),

web\_server\_redirect\_uri **VARCHAR**(255),

authorities **VARCHAR**(255),

access\_token\_validity **INTEGER**,

refresh\_token\_validity **INTEGER**,

additional\_information **VARCHAR**(255),

autoapprove **VARCHAR**(255)

);

**CREATE** **TABLE** oauth\_client\_token (

token\_id **VARCHAR**(255),

token BLOB,

authentication\_id **VARCHAR**(255),

user\_name **VARCHAR**(255),

client\_id **VARCHAR**(255)

);

**CREATE** **TABLE** oauth\_access\_token (

token\_id **VARCHAR**(255),

token BLOB,

authentication\_id **VARCHAR**(255),

user\_name **VARCHAR**(255),

client\_id **VARCHAR**(255),

authentication BLOB,

refresh\_token **VARCHAR**(255)

);

**CREATE** **TABLE** oauth\_refresh\_token (

token\_id **VARCHAR**(255),

token BLOB,

authentication BLOB

);

**CREATE** **TABLE** oauth\_code (

code **VARCHAR**(255), authentication BLOB

);

**CREATE** **TABLE** `user\_details` (

`user\_id` **int**(10) unsigned **NOT** **NULL**,

`user\_name` **varchar**(45) **NOT** **NULL**,

`password` **varchar**(255) **NOT** **NULL**,

`secretkey` **varchar**(255) **NOT** **NULL**,

`first\_name` **varchar**(45) **DEFAULT** **NULL**,

`last\_name` **varchar**(45) **DEFAULT** **NULL**,

`email` **varchar**(45) **DEFAULT** **NULL**,

`mobile` **varchar**(15) **DEFAULT** **NULL**,

`country\_name` **varchar**(50) **NOT** **NULL**,

`iso\_country\_code` **varchar**(4) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`user\_id`),

**UNIQUE** **KEY** `UK\_user\_details1` (`user\_name`),

**UNIQUE** **KEY** `UK\_user\_details2` (`email`),

**UNIQUE** **KEY** `UK\_user\_details3` (`mobile`)

);

**CREATE** **TABLE** `user\_roles` (

`user\_role\_id` **smallint**(5) unsigned **NOT** **NULL**,

`user\_role\_name` **varchar**(45) **NOT** **NULL**,

**PRIMARY** **KEY** (`user\_role\_id`),

**UNIQUE** **KEY** `UK\_user\_roles1` (`user\_role\_id`,`user\_role\_name`),

**UNIQUE** **KEY** `UK\_user\_roles2` (`user\_role\_name`)

);

**CREATE** **TABLE** `user\_roles\_mapping` (

`user\_id` **int**(10) unsigned **NOT** **NULL**,

`user\_role\_id` **smallint**(5) unsigned **NOT** **NULL**,

**PRIMARY** **KEY** (`user\_id`,`user\_role\_id`),

**CONSTRAINT** `FK\_user\_roles\_mapping1` **FOREIGN** **KEY** (`user\_role\_id`) **REFERENCES** `user\_roles` (`user\_role\_id`),

**CONSTRAINT** `FK\_user\_roles\_mapping2` **FOREIGN** **KEY** (`user\_id`) **REFERENCES** `user\_details` (`user\_id`)

);

**CREATE** **TABLE** `manufacturers` (

`manufacture\_code` **varchar**(20) **NOT** **NULL**,

`manufacture\_display\_name` **varchar**(50) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`manufacture\_code`)

);

**CREATE** **TABLE** `categories` (

`category\_code` **varchar**(20) **NOT** **NULL**,

`category\_display\_name` **varchar**(50) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`category\_code`)

);

**CREATE** **TABLE** `models` (

`model\_code` **varchar**(20) **NOT** **NULL**,

`manufacture\_code` **varchar**(20) **NOT** **NULL**,

`category\_code` **varchar**(20) **NOT** **NULL**,

`model\_display\_name` **varchar**(50) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`model\_code`),

**CONSTRAINT** `FK\_model1` **FOREIGN** **KEY** (`category\_code`) **REFERENCES** `categories` (`category\_code`),

**CONSTRAINT** `FK\_model2` **FOREIGN** **KEY** (`manufacture\_code`) **REFERENCES** `manufactures` (`manufacture\_code`)

);

**CREATE** **TABLE** `emi\_tenures` (

`emi\_tenure\_code` **varchar**(5) **NOT** **NULL**,

`emi\_tenure\_display\_name` **varchar**(50) **NOT** **NULL**,

`emi\_tenure\_months` **varchar**(5) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`emi\_tenure\_code`)

);

**CREATE** **TABLE** `issuer\_banks` (

`issuer\_bank\_code` **int**(5) **NOT** **NULL**,

`issuer\_bank\_display\_name` **varchar**(50) **NOT** **NULL**,

`issuer\_min\_emi\_amount` **varchar**(12) **DEFAULT** **NULL**,

`issuer\_cashback\_flag` **varchar**(5) **NOT** **NULL** COMMENT 'PRE or POST',

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`issuer\_bank\_code`)

);

**CREATE** **TABLE** `issuing\_bin` (

`issuer\_bin` **int**(10) **NOT** **NULL**,

`issuer\_bank\_code` **int**(5) **NOT** **NULL**,

`scheme\_type` **varchar**(12) **NOT** **NULL**,

`card\_type` **varchar**(12) **NOT** **NULL**,

`iso\_country\_code` **varchar**(12) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`issuer\_bin`),

**CONSTRAINT** `FK\_issuing\_bin` **FOREIGN** **KEY** (`issuer\_bank\_code`) **REFERENCES** `issuer\_banks` (`issuer\_bank\_code`)

);

**CREATE** **TABLE** `issuer\_schemes1` (

`issuer\_scheme\_code` **varchar**(20) **NOT** **NULL**,

`issuer\_bank\_code` **int**(5) **NOT** **NULL**,

`emi\_tenure\_code` **varchar**(5) **NOT** **NULL**,

`issuer\_scheme\_display\_name` **varchar**(50) **NOT** **NULL**,

`advance\_emi` **varchar**(6) **DEFAULT** '0',

`issuer\_scheme\_processing\_fees` **varchar**(10) **DEFAULT** **NULL** COMMENT 'like PRECENTAGE - 5P or FLAT - 50F',

`issuer\_rate\_of\_interest` **varchar**(10) **DEFAULT** **NULL** COMMENT 'like only PRECENTAGE - 5',

`cashback` **varchar**(10) **DEFAULT** **NULL** COMMENT 'like PRECENTAGE - 5P or FLAT - 50F',

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`issuer\_scheme\_code`),

**CONSTRAINT** `FK\_issuer\_schemes1` **FOREIGN** **KEY** (`issuer\_bank\_code`) **REFERENCES** `issuer\_banks` (`issuer\_bank\_code`),

**CONSTRAINT** `FK\_issuer\_schemes2` **FOREIGN** **KEY** (`emi\_tenure\_code`) **REFERENCES** `emi\_tenures` (`emi\_tenure\_code`)

);

**CREATE** **TABLE** `issuer\_scheme\_model` (

`issuer\_scheme\_model\_code` **varchar**(50) **NOT** **NULL**,

`issuer\_scheme\_code` **varchar**(20) **NOT** **NULL**,

`model\_code` **varchar**(20) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** (`issuer\_scheme\_model\_code`),

**CONSTRAINT** `FK\_issuer\_scheme\_model1` **FOREIGN** **KEY** (`issuer\_scheme\_code`) **REFERENCES** `issuer\_schemes` (`issuer\_scheme\_code`),

**CONSTRAINT** `FK\_issuer\_scheme\_model2` **FOREIGN** **KEY** (`model\_code`) **REFERENCES** `models` (`model\_code`)

);

**CREATE** **TABLE** `issuer\_scheme\_model\_user` (

`user\_id` **int**(10) unsigned **NOT** **NULL**,

`issuer\_scheme\_model\_code` **varchar**(50) **NOT** **NULL**,

`is\_active` **varchar**(1) **DEFAULT** 'Y',

`crtupd\_dt` datetime,

`crtupd\_user` **varchar**(32) **DEFAULT** **NULL**,

**PRIMARY** **KEY** `PK\_user\_details1` (`user\_id`,`issuer\_scheme\_model\_code`)

);

**5.2. QuickEMI-Transaction Data Model**

**CREATE** DATABASE emi\_transaction\_process;

USE emi\_transaction\_process;

**CREATE** **TABLE** `emi\_transaction\_process` (

`prim\_id` **varchar**(50) **NOT** **NULL**,

`user\_id` **int**(20) **NOT** **NULL**,

`issuer\_bank\_code` **int**(5) **NOT** **NULL**,

`issuer\_scheme\_code` **varchar**(20) **NOT** **NULL**,

`txn\_amount` **varchar**(12) **NOT** **NULL**,

`txn\_date\_time` **timestamp**,

`card\_holder\_name` **varchar**(50) **NOT** **NULL**,

`mobile\_no` **varchar**(20) **NOT** **NULL**,

`mask\_card\_number` **varchar**(25) **NOT** **NULL**,

`encrypted\_card\_number` **varchar**(255) **NOT** **NULL**,

`invoice\_number` **varchar**(100) **NOT** **NULL**,

`approval\_code` **varchar**(10) **NOT** **NULL**,

`rrn\_number` **varchar**(20) **NOT** **NULL**,

`charge\_slip` mediumblob **NOT** **NULL**,

`signature` mediumblob **NOT** **NULL**,

`emi\_details` **varchar**(1500) **NOT** **NULL**

**PRIMARY** **KEY** (`prim\_id`)

);

**create** **table** `kekkeys` (

`ckey` **varchar** (765),

`hasha` **varchar** (765),

`hashb` **varchar** (765),

`hashc` **varchar** (765),

`hashe` **varchar** (765),

`lastupdated` **varchar** (90),

`is\_active` **varchar** (1),

`crtupd\_dt` datetime ,

`crtupd\_user` **varchar** (96),

**PRIMARY** **KEY** (`ckey`, `hasha`, `lastupdated`)

);

**create** **table** `dekkeys` (

`dekkey` **varchar** (750),

`lastupdated` **varchar** (90),

`is\_active` **varchar** (1),

`crtupd\_dt` datetime ,

`crtupd\_user` **varchar** (96),

**PRIMARY** **KEY** (`dekkey`,`lastupdated`)

);