[DEVS' TOOLKIT PART 2]

HOMEWORK 2

API Design for NUSmoney App

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QN 1: DOCUMENT API

<table>
<tr><th colspan="5">API SPECIFICATIONS</th></tr>
<tr><td>NAME</td><td colspan="4">Users</td></tr>
<tr><td>DESCRIPTION</td><td colspan="4">For exposing information on the users table.</td></tr>
<tr><td>URI</td><td colspan="4">/users</td></tr>
<tr><td>METHODS</td><td>.get</td><td>.post</td><td>.put</td><td>.delete</td></tr>
<tr><td>REQUEST
This format allows the MySQL command to be customized for all columns within the same URI. This makes the API more compact and scalable with varying table sizes.</td><td>Body
sel_col: columns to be selected. can be specific column(s) or simply ‘*’.
ref_col: reference column for the ‘where’ clause.
ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
ref_val: nominated value in reference column to filter the table.
Sample
{
"sel_col" : "name, nric, dependants",
"ref_col" : "nric",
"ref_cond" : "like",
"ref_val" : "S9%"
}</td><td>Body
Column names and the corresponding data types to be passed through the API are exactly as found in the table.
Sample
{
"nric" : "S1234567A",
"name" : "John Mone",
"email" : "jmoney@mfam.com",
"password" : "jomone",
"mobile" : 97845578,
"gender" : "Male",
"age_group" : "25-45",
"monthly_income" : "5-10k",
"marital_status" : "M",
"dependants" : 4,
"debts_os" : ">12 x monthly pay"
}</td><td>Body
chg_col: column to be changed.
chg_val: new value of column.
ref_col: reference column for the ‘where’ clause.
ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
ref_val: nominated value in reference column to filter the table.
Sample
{
"chg_col" : "password",
"chg_val" : "ezpz",
"ref_col" : "nric",
"ref_cond" : “=",
"ref_val" : "S1234567A"
}</td><td>Body
ref_col: reference column for the ‘where’ clause.
ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
ref_val: nominated value in reference column to filter the table.
Sample
{
"ref_col" : "nric",
"ref_cond" : "=",
"ref_val" : "S1234567A"
}</td></tr>
<tr><td>RESPONSE</td><td>User information is read from the users table as per the input request.</td><td>A new user is created in the users table with details as per the input values.</td><td>A value in the users table is updated.
- Password of the user with NRIC S1234567A is changed to ‘ezpz’.</td><td>A row is deleted from the users table.
- The user with NRIC S1234567A is removed completely.</td></tr>
</table>

QN 1: DOCUMENT API

API SPECIFICATIONS				
NAME	**Accounts**			
DESCRIPTION	For exposing information on the accounts table.			
URI	/accounts			
METHODS	.get	.post	.put	.delete

REQUEST	Body
	sel_col: columns to be selected. can be specific column(s) or simply ‘*’.
	ref_col: reference column for the ‘where’ clause.
	ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
	ref_val: nominated value in reference column to filter the table.
	
	Sample
	{
	"sel_col" : "name, nric, dependants",
	"ref_col" : "nric",
	"ref_cond" : "like",
	"ref_val" : "S9%"
	}
		Body
		Column names and the corresponding data types to be passed through the API are exactly as found in the table.
		
		Sample
		{
		"account_number" : "999991101-8",
		"nric" : "S1234567A",
		"account_type" : "savings",
		"balance" : 50000,
		"max_limit" : 1000000,
		"date_created" : "2018-01-01",
		"last_activity" : "2018-03-26"
		}
			Body
			chg_col: column to be changed.
			chg_val: new value of column.
			ref_col: reference column for the ‘where’ clause.
			ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
			ref_val: nominated value in reference column to filter the table.
			
			Sample
			{
			"chg_col" : "max_limit",
			"chg_val" : 500000,
			"ref_col" : "nric",
			"ref_cond" : "=",
			"ref_val" : "S1234567A"
			}
				Body
				ref_col: reference column for the ‘where’ clause.
				ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
				ref_val: nominated value in reference column to filter the table.
				
				Sample
				{
				"ref_col" : "nric",
				"ref_cond" : "=",
				"ref_val" : "S1234567A"
				}

RESPONSE	User account information is read from the accounts table as per the input request.	A new account for a user with NRIC S1234567A is created in the accounts table with the given details.	A value in the accounts table is updated. - Max limit of the account is changed to 500000 for user with NRIC S1234567A.	A row is deleted from the accounts table. - The account of user with NRIC S1234567A is removed completely.

QN 1: DOCUMENT API

API SPECIFICATIONS				
NAME	Transactions			
DESCRIPTION	For exposing information on the transactions table.			
URI	/transactions			
METHODS	.get	.post	.put	.delete

REQUEST	Body
	sel_col: columns to be selected. can be specific column(s) or simply ‘*’.
	ref_col: reference column for the ‘where’ clause.
	ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
	ref_val: nominated value in reference column to filter the table.
	
	Sample
	{
	"sel_col" : "account_number, transaction_id, amount",
	"ref_col" : "account_number",
	"ref_cond" : "=",
	"ref_val" : "989210982-1"
	}
		Body
		Column names and the corresponding data types to be passed through the API are exactly as found in the table.
		
		Sample
		{
		"transaction_id" : "4571-9967",
		"account_number" : "999991101-8",
		"transaction_date" : "2018-12-31",
		"amount" : 50,
		"transaction_type" : "paywave",
		"expense_category" : "food",
		"recipient" : "Spizza"
		}
			Body
			chg_col: column to be changed.
			chg_val: new value of column.
			ref_col: reference column for the ‘where’ clause.
			ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
			ref_val: nominated value in reference column to filter the table.
			
			Sample
			{
			"chg_col" : "amount",
			"chg_val" : 40,
			"ref_col" : "transaction_id",
			"ref_cond" : "=",
			"ref_val" : "4571-9967"
			}
				Body
				ref_col: reference column for the ‘where’ clause.
				ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
				ref_val: nominated value in reference column to filter the table.
				
				Sample
				{
				"ref_col" : "transaction_id",
				"ref_cond" : "=",
				"ref_val" : "4571-9967"
				}

RESPONSE	Transaction information is read from the transactions table as per the input request.	A new transaction is created with details as per the input values.	A value in the transactions table is updated. - Amount of a transaction with ID 4571-9967 is changed to 40.	A row is deleted from the transactions table. - The transaction with ID 4571-9967 is removed completely.

QN 1: DOCUMENT API

API SPECIFICATIONS				
NAME	**Messages**			
DESCRIPTION	For exposing information on the messages table.			
URI	/messages			
METHODS	.get	.post	.put	.delete

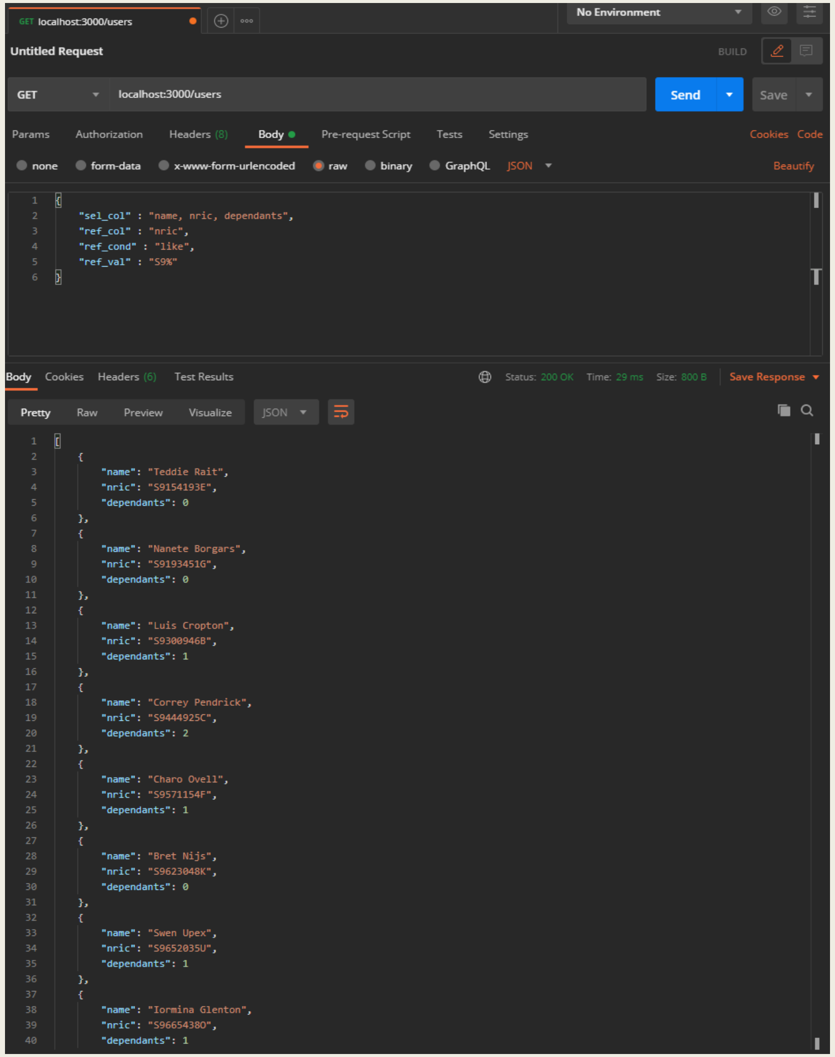
REQUEST	Body
	sel_col: columns to be selected. can be specific column(s) or simply ‘*’.
	ref_col: reference column for the ‘where’ clause.
	ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
	ref_val: nominated value in reference column to filter the table.
	
	Sample
	{
	"sel_col" : "account_number, message_id, remarks",
	"ref_col" : "account_number",
	"ref_cond" : "=",
	"ref_val" : "989210982-1"
	}
		Body
		Column names and the corresponding data types to be passed through the API are exactly as found in the table.
		
		Sample
		{
		"message_id" : "99-893-3459",
		"account_number" : "999991101-8",
		"nric" : "S1234567A",
		"remarks" : "expense_summary",
		"message_date" : "2018-12-31"
		}
			Body
			chg_col: column to be changed.
			chg_val: new value of column.
			ref_col: reference column for the ‘where’ clause.
			ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
			ref_val: nominated value in reference column to filter the table.
			
			Sample
			{
			"chg_col" : "remarks",
			"chg_val" : "promotions",
			"ref_col" : "message_id",
			"ref_cond" : "=",
			"ref_val" : "99-893-3459"
			}
				Body
				ref_col: reference column for the ‘where’ clause.
				ref_cond: conditional operator for the ‘where’ clause. can be ‘=‘, ‘like’ etc.
				ref_val: nominated value in reference column to filter the table.
				
				Sample
				{
				"ref_col" : "message_id",
				"ref_cond" : "=",
				"ref_val" : "99-893-3459"
				}

RESPONSE	Message information is read from the messages table as per the input request.	A new message is created in the messages table with details as per the input values.	A value in the messages table is updated. - Remarks of the message with ID 99-893-3459 is changed to ‘promotions’.	A row is deleted from the messages table. - The message with ID 99-893-3459 is removed completely.

QN 2: IMPLEMENT API

- Please use the 4 .js files attached in the folder to test the sample json codes given in the previous slides.
- The 4 .sql files for my database are also attached for your convenience.

Sample of get request on users table ---->



GET localhost:3000/users

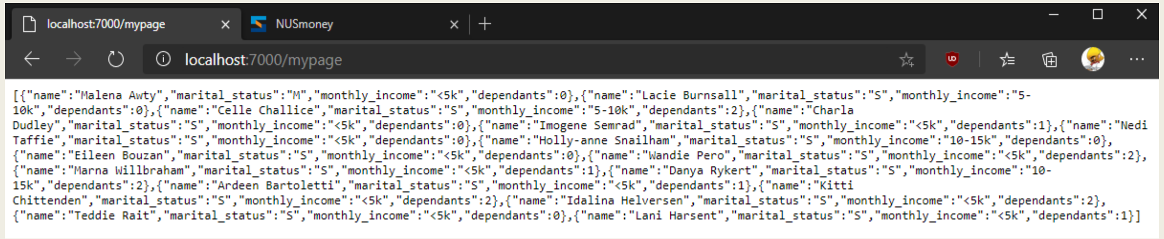
```
{
    "sel_col" : "name, nric, dependants",
    "ref_col" : "nric",
    "ref_cond" : "like",
    "ref_val" : "S9%"
}
```

Status: 200 OK Time: 29 ms Size: 800 B

```
[
    {
        "name": "Teddie Rait",
        "nric": "S9154193E",
        "dependants": 0
    },
    {
        "name": "Nanete Borgars",
        "nric": "S9193451G",
        "dependants": 0
    },
    {
        "name": "Luis Cropton",
        "nric": "S9300946B",
        "dependants": 1
    },
    {
        "name": "Correy Pendrick",
        "nric": "S9444925C",
        "dependants": 2
    },
    {
        "name": "Charo Ovell",
        "nric": "S9571154F",
        "dependants": 1
    },
    {
        "name": "Bret Nijs",
        "nric": "S9623048K",
        "dependants": 0
    },
    {
        "name": "Swen Upex",
        "nric": "S9652035U",
        "dependants": 1
    },
    {
        "name": "Iormina Glenton",
        "nric": "S9665438O",
        "dependants": 1
```

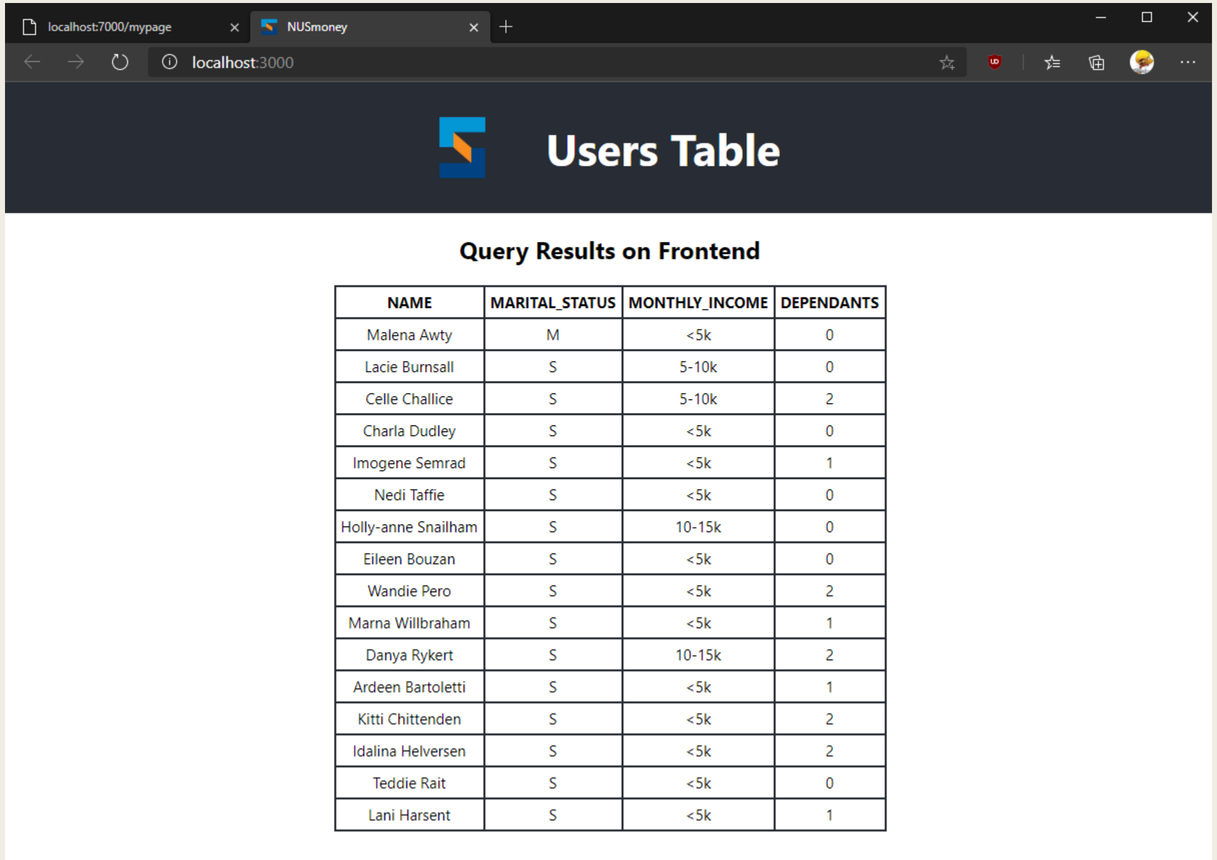
QN 3: CONNECT FRONTEND

Backend



```
[{"name":"Malena Awty","marital_status":"M","monthly_income":"<5k","dependants":0},{"name":"Lacie Burnsall","marital_status":"S","monthly_income":"5-
10k","dependants":0},{"name":"Celle Challice","marital_status":"S","monthly_income":"5-10k","dependants":2},{"name":"Charla
Dudley","marital_status":"S","monthly_income":"<5k","dependants":0},{"name":"Imogene Semrad","marital_status":"S","monthly_income":"<5k","dependants":1},{"name":"Nedi
Taffie","marital_status":"S","monthly_income":"<5k","dependants":0},{"name":"Holly-anne Snailham","marital_status":"S","monthly_income":"10-15k","dependants":0},
{"name":"Eileen Bouzan","marital_status":"S","monthly_income":"<5k","dependants":0},{"name":"Wandie Pero","marital_status":"S","monthly_income":"<5k","dependants":2},
{"name":"Marna Willbraham","marital_status":"S","monthly_income":"<5k","dependants":1},{"name":"Danya Rykert","marital_status":"S","monthly_income":"10-
15k","dependants":2},{"name":"Ardeen Bartoletti","marital_status":"S","monthly_income":"<5k","dependants":1},{"name":"Kitti
Chittenden","marital_status":"S","monthly_income":"<5k","dependants":2},{"name":"Idalina Helversen","marital_status":"S","monthly_income":"<5k","dependants":2},
{"name":"Teddie Rait","marital_status":"S","monthly_income":"<5k","dependants":0},{"name":"Lani Harsent","marital_status":"S","monthly_income":"<5k","dependants":1}]
```

Frontend



Users Table

Query Results on Frontend

NAME	MARITAL_STATUS	MONTHLY_INCOME	DEPENDANTS
Malena Awty	M	<5k	0
Lacie Burnsall	S	5-10k	0
Celle Challice	S	5-10k	2
Charla Dudley	S	<5k	0
Imogene Semrad	S	<5k	1
Nedi Taffie	S	<5k	0
Holly-anne Snailham	S	10-15k	0
Eileen Bouzan	S	<5k	0
Wandie Pero	S	<5k	2
Marna Willbraham	S	<5k	1
Danya Rykert	S	10-15k	2
Ardeen Bartoletti	S	<5k	1
Kitti Chittenden	S	<5k	2
Idalina Helversen	S	<5k	2
Teddie Rait	S	<5k	0
Lani Harsent	S	<5k	1

Files Modified

../backend/routes/mypage.js

../frontend/public/index.html

../frontend/src/App.js

../frontend/src/App.css

Modified files are attached in the folder

END