SINGAPORE POLYTECHNIC | SP

SCHOOL OF COMPUTING (SoC)

ST0503 Back-end Web Development

2021/2022 SEMESTER 2

ASSIGNMENT 1

Admission Number: P2100803

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Class: DAAA/FT/1B/01

Course: Diploma in Applied AI and Analytics

Content Page:

1. Instructions on how to setup the project on the lecturer's laptop
2. MYSQL database tables created and their linkage (including foreign keys)
3. Screenshots as proof of all 12 successful APIs in chronogical order as well as the remaining 5 APIs for the advanced features

1. **Instructions on how to set up the project:**

   1. Open MYSql Workbench and open the .sql script file from the downloaded project folder in the workbench. Run the file by clicking the first lightning symbol in the workspace area and refresh the schemas on the left to see the new database
   2. Double click on the database 'sp_it' and then double click on 'Tables' to see the various table names. To view the actual tables double click on the table names and click the first lightning icon in the workspace on the left again
   3. Open Postman and go to import to import the postman path collection file from the downloaded project folder. You can test all APIs from here more conveniently
   4. Open VScode and right click on the main folder which was download and click integrated terminal
   5. Once terminal is open type 'npm start' and press enter. The server will start running in the terminal.
   6. From here you can test all the endpoints. I recommend that you have postman and mysql workbench open side by side so you can see the changes happening in real time for POST, PUT, GET and DELETE.

2. **Tables in the SQL Workbench to support functionalities such as user registration, publication of product info, insertion of products and user reviews**.

Context:

Background

SP IT! is considering setting up an online e-store to allow the public to purchase IT products it is selling. Before it launches its online e-store, it requires a web application to computerize its inventory management module and also allow the public to view the product details online.

As such, SP IT! has tasked you to design the backend API Specs the website. The API specs would support functionalities such as user registration, publication of product info, insertion of products and user reviews

SP IT! is considering setting up

ER Diagram:
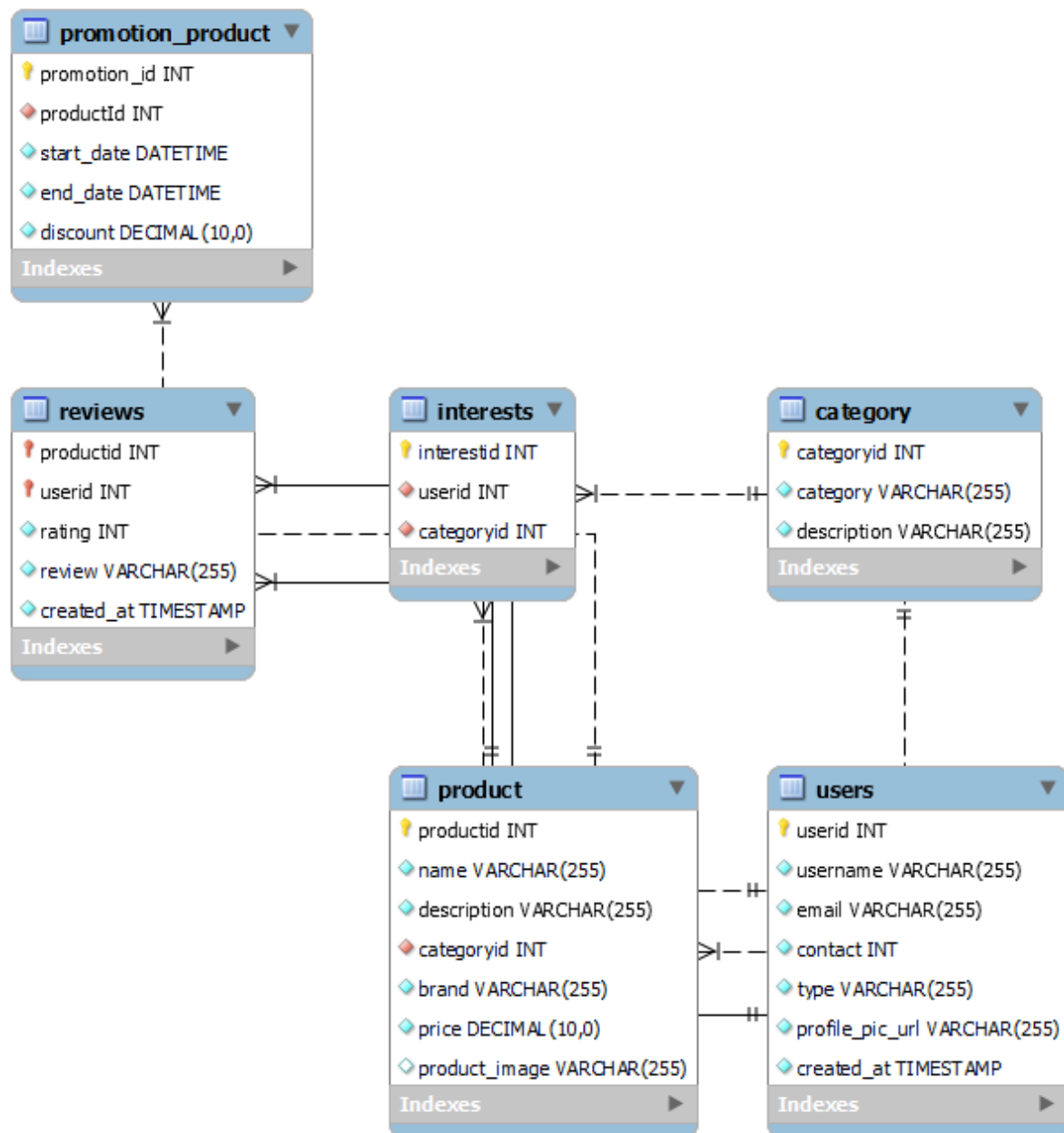
User Table for user registration:

	userid	username	email	contact	type	profile_pic_url	created_at
▶	1	Terry Tan	terry@gmail.com	98765432	Customer	https://www.abc.com/terry.jpg	2021-12-15 20:27:21
	2	Amir Rahman	amirramen@gmail.com	96209012	Customer	https://www.abc.com/amirramen.jpg	2021-12-15 20:58:33
	3	Percy Jackson	percyjackson@gmail.com	98765432	Customer	https://www.abc.com/percyj.jpg	2021-12-16 18:00:06
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Product Table for publication of product:

	productid	name	description	categoryid	brand	price
▶	10	SP AMD Ryzen 3600 Laptop	Best Laptop	1	SP IT!	1858
	11	Oppo Find X Pro 3	Best Phone	1	SP IT!	2000
*	NULL	NULL	NULL	NULL	NULL	NULL

Foreign Key for categoryid to category table:

Category Table for category of devices:

	categoryid	category	description
▶	1	Laptops	Light and high performance laptops for school
	2	Smartphones	Portable, high performance and easy for differe...
*	NULL	NULL	NULL

Reviews Table for reviews from users on the various products:

	productid	userid	rating	review	created_at
▶	10	1	5	Good Laptop, super fast and can play game in class!	2021-12-19 15:08:34
	10	2	10	Good Laptop, super fast and can play game in cla...	2021-12-19 16:49:46
*	NULL	NULL	NULL	NULL	NULL

Foreign Key for productid to product table:

Foreign Key for userid to user table:

Interests Table for users who are interested in multiple categories:

Foreign key for userid to user table:

Foreign key for categoryid to category table:

Advanced Feature:

Promotion_product Table for the promotion period and discount for the respective products:

promotion_id	productId	start_date	end_date	discount
4	10	2021-12-25 10:00:00	2021-12-31 11:59:00	15
NULL	NULL	NULL	NULL	NULL

Foreign Key for productid to product table:

3. Proof that the endpoints work with the sql database when tested on postman.

Endpoint 1

Endpoint 2

Endpoint 3

CA1 / **localhost:8081/users/:id/**   Save   ⌄   ⚬⚬⚬   ✏ 💬

| PUT ⌄ | localhost:8081/users/:id/ | **Send** ⌄ |

Params ●   Authorization   Headers (9)   Body ●   Pre-request Script   Tests   Settings   **Cookies**

⚪ none   ⚪ form-data   ⚪ x-www-form-urlencoded   🔴 raw   ⚪ binary   ⚪ GraphQL   JSON ⌄   **Beautify**

```
1  {
2      "username": "Percy Jackson",
3      "email": "percyjackson@gmail.com",
4      "contact": 98765432,
5      "type": "Customer",
6      "profile_pic_url": "https://www.abc.com/percyj.jpg"
7  }
```

Body   Cookies   Headers (4)   Test Results   🌐 Status: 204 No Content   Time: 32 ms   Size: 134 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   Text ⌄   ⇥

```
1
```

🎓 Bootcamp   ▶ Runner   🗑 Trash

Endpoint 4

CA1 / **localhost:8081/category**   Save   ⌄   ⚬⚬⚬   ✏ 💬

| POST ⌄ | localhost:8081/category | **Send** ⌄ |

Params   Authorization   Headers (9)   Body ●   Pre-request Script   Tests   Settings   **Cookies**

⚪ none   ⚪ form-data   ⚪ x-www-form-urlencoded   🔴 raw   ⚪ binary   ⚪ GraphQL   JSON ⌄   **Beautify**

```
1  {
2      "category": "Smartphones",
3      "description": "Portable, high performance and easy for different modes of communication"
4  }
5
```

Body   Cookies   Headers (7)   Test Results   🌐 Status: 201 Created   Time: 15 ms   Size: 253 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   JSON ⌄   ⇥

```
1  {
2      "category": 2
3  }
```

Endpoint 5


```
GET        localhost:8081/category                                    Send

Params   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings
Query Params

KEY                          VALUE                    DESCRIPTION
Key                          Value                    Description


Body  Cookies  Headers (7)  Test Results          Status: 200 OK  Time: 9 ms  Size: 468 B

Pretty  Raw  Preview  Visualize  JSON

 1  [
 2      {
 3          "categoryid": 1,
 4          "category": "Laptops",
 5          "description": "Light and high performance laptops for school"
 6      },
 7      {
 8          "categoryid": 2,
 9          "category": "Smartphones",
10          "description": "Portable, high performance and easy for different modes of communication"
11      }
```

Endpoint 6


```
GET        localhost:8081/category                                    Send

Params   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings
Query Params

KEY                          VALUE                    DESCRIPTION
Key                          Value                    Description


Body  Cookies  Headers (7)  Test Results          Status: 200 OK  Time: 9 ms  Size: 468 B

Pretty  Raw  Preview  Visualize  JSON

 1  [
 2      {
 3          "categoryid": 1,
 4          "category": "Laptops",
 5          "description": "Light and high performance laptops for school"
 6      },
 7      {
 8          "categoryid": 2,
 9          "category": "Smartphones",
10          "description": "Portable, high performance and easy for different modes of communication"
11      }
```

Endpoint 7

CA1 / localhost:8081/product/

| POST ∨ | localhost:8081/product/ | | Send ∨ |

Params   Authorization   Headers (9)   Body ●   Pre-request Script   Tests   Settings   Cookies

○ none   ○ form-data   ○ x-www-form-urlencoded   ● raw   ○ binary   ○ GraphQL   JSON ∨   Beautify

```
1  {
2      "name": "Oppo Find X Pro 3",
3      "description": "Best Phone",
4      "categoryid": 1,
5      "brand": "SP IT!",
6      "price": "2000.00"
7  }
8
```

Body   Cookies   Headers (7)   Test Results   Status: 201 Created   Time: 21 ms   Size: 256 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```
1  {
2      "productid": 11
3  }
```

Endpoint 8

CA1 / localhost:8081/product/:id

| GET ∨ | localhost:8081/product/:id | | Send ∨ |

Params ●   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings   Cookies

Query Params

KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
Key	Value	Description		

Path Variables

KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
id	10	Description		

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 11 ms   Size: 422 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```
1  {
2      "productid": 10,
3      "name": "SP AMD Ryzen 3600 Laptop",
4      "description": "Best Laptop",
5      "categoryid": 1,
6      "brand": "SP IT!",
7      "price": 1858,
8      "product_image": "1641102108853-product-design-phone-blue.jpeg"
9  }
```

Endpoint 9

Endpoint 10

Endpoint 11

GET   localhost:8081/product/:id/reviews   **Send**

Params ●   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings   Cookies

Query Params

KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
Key	Value	Description		

Path Variables

KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
id	10	Description		

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 14 ms   Size: 372 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   JSON ⌄

```
1  {
2      "productid": 10,
3      "userid": 1,
4      "rating": 5,
5      "review": "Good Laptop, super fast and can play game in class!",
6      "created_at": "2021-12-19 15:08:34"
7  }
```

Endpoint 12

CA1 / **localhost:8081/interest/:userid**   🖫 Save ⌄   ooo

POST   localhost:8081/interest/:userid   **Send** ⌄

Params ●   Authorization   Headers (9)   Body ●   Pre-request Script   Tests   Settings   Cookies

● none   ● form-data   ● x-www-form-urlencoded   ● raw   ● binary   ● GraphQL   JSON ⌄   Beautify

```
1  {
2      "categoryids": "1,2"
3  }
```

Body   Cookies   Headers (7)   Test Results   Status: 201 Created   Time: 54 ms   Size: 253 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   JSON ⌄

```
1  {
2      "interest": 1
3  }
```

ADVANCECD FEATURE APIs:

Endpoint 13

Endpoint 14

Endpoint 15

CA1 / localhost:8081/promotion/:productid   Save ⌄   ooo   ✎ ▭

DELETE ⌄	localhost:8081/promotion/:productid		**Send** ⌄

Params ●   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings   Cookies

Query Params

	KEY	VALUE	DESCRIPTION	ooo	**Bulk Edit**
	Key	Value	Description		

ath Variables

	KEY	VALUE	DESCRIPTION	ooo	**Bulk Edit**
	productid	10	Description		

Body   Cookies   Headers (4)   Test Results   Status: 204 No Content   Time: 77 ms   Size: 134 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   Text ⌄

```
1
```

Endpoint 16

CA1 / http://localhost:8081/upload   Save ⌄   ooo   ✎ ▭

POST ⌄	http://localhost:8081/upload/11		**Send** ⌄

Params   Authorization   Headers (9)   Body ●   Pre-request Script   Tests   Settings   Cookies

◯ none   ⬤ form-data   ◯ x-www-form-urlencoded   ◯ raw   ◯ binary   ◯ GraphQL

	KEY	VALUE	DESCRIPTION	ooo	**Bulk Edit**
☑	productImage	product-design-phone-blue.jpg ✕			
	Key	Value	Description		

Body   Cookies   Headers (7)   Test Results   Status: 201 Created   Time: 141 ms   Size: 259 B   Save Response ⌄

Pretty   Raw   Preview   Visualize   HTML ⌄

```
1  file uploaded successfully
```

17

Endpoint 17

CA1 / **http://localhost:8081/uploads**

| GET ∨ | http://localhost:8081/upload/:productid | | **Send** ∨ |

Params ●   Authorization   Headers (7)   Body   Pre-request Script   Tests   Settings   Cookies

Query Params

	KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
	Key	Value	Description		

Path Variables

	KEY	VALUE	DESCRIPTION	ooo	Bulk Edit
	productid	11	Description		

Body   Cookies   Headers (7)   Test Results   Status: 200 OK   Time: 21 ms   Size: 298 B   Save Response ∨

Pretty   Raw   Preview   Visualize   JSON ∨

```
1  {
2      "product_image": "1641108219288-product-design-phone-blue.jpg"
3  }
```