System Requirements Specification Index

For

Grocery E-mart Application (Collaborative)

Version 4.0

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GROCERY EMART APPLICATION

System Requirements Specification

1.Project Abstract

1.1 GROCERY MART Application is .NET CORE 3.1 RESTful API application with InMemoryDb, where it allows customers to place the product order, and all product maintenance, new addition and complete administration work is performed by admin.

1.2 Following is the requirement specifications:

	GROCERYEMART
USERS	
1	Admin
2	Customer
Admin Functionalities	
1	Add new product category
2	Add new product
3	Edit/Update category
4	Edit/Update product
5	Remove product and category
6	Can see all order placed by user
7	Can see all product and category
Customer Functionalities	
1	Can register itself by providing these details (Name, Email, Password, Mobile Number, Pin Code, HouseNo_Building_Name, Road_area, City, State)
2	Can place a product order after login.
3	Can track status of order.
4	Can get the details of all product and category
5	Can update the self-details
6	Can get product by id
7	Can get category by id
8	Get product by name
9	Get product by category id

2. Assumptions, Dependencies, Risks / Constraints

2.1 Admin Constraints:

- While disabling the user by admin, if user id does not exist then the operation should throw a custom exception.
- While enabling the user by admin, if user id does not exist then operation should throw custom exception.
- While deleting the product category by admin, if category id does not exist then operation should throw a custom exception.
- While deleting the product by admin, if product id does not exist then operation should throw a custom exception.
- While editing/updating the product by admin, if product id does not exist then operation should throw custom exception.
- While editing/updating the product category by admin, if category id does not exist then the operation should throw a custom exception.
- While finding the product/category using name and id by admin, if name and id does not exist then operation should throw custom exception.
- While fetching the product order using id by admin, if product order id does not exist then operation should throw custom exception.

2.2 Customer Constraints

- While placing product orders by customer, if product id does not exist then operation should throw custom exception.
- While placing product orders by customer, if the user doesn't exist then the operation should throw a custom exception.
- While placing product orders by customer, if the user doesn't login then operation should ask login first or register first otherwise throw custom exception.
- While placing an order by the customer, if the customer is disabled then the operation should throw a custom exception.
- While fetching product/product-category details, if product/product_category id does not exist then operation should throw custom exception.
- While order details/status, if order id email does not exist then operation should throw custom exception, User must login before getting this information.
- While updating the login user details by customer, if loan customer id/Email does not exist then operation should throw custom exception. User must login before updating his/her details.

2.3 Common Constraints

- For all rest endpoints receiving @RequestBody, validation check must be done and must throw custom exception if data is invalid
- All the business validations must be implemented in model classes only.
- All the database operations must be implemented on entity object only
- Do not change, add, remove any existing methods in service layer
- In Repository interfaces, custom methods can be added as per requirements.
- All RestEndpoint methods and Exception Handlers must return data wrapped in **ResponseEntity**

3. Business Validations

3.1 User Entity:

- User Name is not null, min 3 and max 100 characters.
- User email is not null, min 3 and max 100 characters and in proper email format.
- Password is not null, min 8 and.
- User mobile is not null, min 10 and max 10 characters.
- Pin Code is not null and must be 6 digits.
- HouseNo_Building_Name is not null and must be completed.
- Road_area is not null must complete,
- City is not a null name as per standard India based.
- State is not null as per India based State.

3.2 Product Category Detail Entity:

- CatId is not null and should be greater than 0
- Url is not null
- OpenInNewWindow must have a Boolean value, true or false.

3.3 Product Detail Entity:

- ProductName is not null.
- Description is not null
- Amount is not null and must be double the value.
- Stock is not null must be < 0 or integer value
- Photo -
- CatId – not null

4. Rest Endpoints

Rest End-points to be exposed in the controller along with method details for the same to be created

4.1 DashboardController

<table>
<tr><th>URL Exposed</th><th>Purpose</th></tr>
<tr><td>/All-Orders
<table><tr><td>Http Method</td><td>GET</td></tr><tr><td>Parameter 1</td><td>-</td></tr><tr><td>Return</td><td><IEnumerable<ProductOrder>></td></tr></table></td><td>Get list of Product order</td></tr>
<tr><td>/OrderById/{OrderId}
<table><tr><td>Http Method</td><td>Get</td></tr><tr><td>Parameter 1</td><td>OrderId</td></tr><tr><td>Return</td><td>UserDto</td></tr></table></td><td>Get an order details by Id</td></tr>
<tr><td>/AddCategory
<table><tr><td>Http Method</td><td>Post</td></tr><tr><td>Parameter 1</td><td>CategoryViewModel model</td></tr><tr><td>Return</td><td>HttpStatus Code</td></tr></table></td><td>Add new product category</td></tr>
<tr><td>/AddProduct
<table><tr><td>Http Method</td><td>Post</td></tr><tr><td>Parameter 1</td><td>ProductViewModel model</td></tr><tr><td>Return</td><td>HttpStatus Code</td></tr></table></td><td>Add new product based on product category</td></tr>
<tr><td>/Updatecategory/{Id}
<table><tr><td>Http Method</td><td>HTTPPUT</td></tr><tr><td>Parameter 1</td><td>Id, Category Model</td></tr><tr><td>Return</td><td>HttpStatus Code</td></tr></table></td><td>Update an existing product Category</td></tr>
<tr><td>/UpdateProduct/{ProductId}
<table><tr><td>Http Method</td><td>HTTPPUT</td></tr><tr><td>Parameter 1</td><td>productId, Product model</td></tr><tr><td>Return</td><td>HttpStatus code</td></tr></table></td><td>Update an existing product information</td></tr>
<tr><td>/RemoveCategory/{Id}
<table><tr><td>Http Method</td><td>HTTPDELETE</td></tr><tr><td>Parameter 1</td><td>Id</td></tr></table></td><td>Delete an existing Product Category</td></tr>
</table>

Return	HttpStatusCode

/RemoveProduct/{productId}	Delete an existing Product
Http Method: HTTPDELETE Parameter 1: productId Return: HttpStatus code	

4.2 UserController

URL Exposed	Purpose
/All-Users Http Method: GET Parameter 1: - Return: <IEnumerable<ApplicationUser>>	Get list of register User
/Register Http Method: POST Parameter 1: `UserViewModel model` Return: HttpStatusCode	Register new user for application
/Updateuser/{UserId} Http Method: HTTPPUT Parameter 1: UserId, ApplicationUser model Return: Http Status Code	Update an existing user information

4.3 GroceryController

URL Exposed	Purpose
/Grocery Http Method: GET Parameter 1: - Return: `<IEnumerable<Product>>`	Fetches list of product
/ProductById/{productId} Http Method: GET Parameter 1: String(productId) Return: Product	Get a single product details.
/ProductByCategory/{CatId} Http Method: GET	Get an existing product category details

<table><tr><td>Parameter 1</td><td>String(CatId)</td></tr><tr><td>Return</td><td>Category</td></tr></table>		
/ProductByName/{productName}<table><tr><td>Http Method</td><td>GET</td></tr><tr><td>Parameter 1</td><td>String(productName)</td></tr><tr><td>Return</td><td>List of product match with name</td></tr></table>		Fetches list of product match with name
/Placeorder/{ProductId}/{email}/{password}<table><tr><td>Http Method</td><td>GET</td></tr><tr><td>Parameter 1</td><td>String(productId)</td></tr><tr><td>Parameter 2</td><td>String email</td></tr><tr><td>Parameter 3</td><td>String password</td></tr><tr><td>Return</td><td>OrderId</td></tr></table>		Place a product order with validating existing user.

5. Template Code Structure

5.1 Package: GroceryEmart

Resources

Names	Resource	Remarks	Status
Package Structure			
controller	User, Dashboard, Grocery Controller	These all controller handle all application Function, update/Edit show information and login existing user.	Partially Implemented
Startup.cs	Startup CS file	Contain all Services setting and Db Configuration.	Already Implemented
Properties	launchSettings.json file	All URL Setting for API	Already Implemented

5.2 Package: GroceryEmart.BusinessLayer

Resources

Names	Resource	Remarks	Status
Package Structure			
Interface	IAdminGroceryServices, IGroceryServices, IUserGroceryServices interface	Inside all these cs files contains all business logic functions..	Already Implemented

Service	AdminGrocery, Grocery, UserGrocery Services class file	Using this all class we are calling the Repository method and use it in the program and on the controller.	Partially Implemented
Repository	AdminGrocery, Grocery, IAdminGrocery, IGrocery, IUserGrocery, UserGrocery Repository CS file and interface.	All these interfaces and class files contain all CRUD operation code for InMemoryDb.	Partially Implemented
ViewModels	CategoryViewModel, ProductViewModel, UserViewModel Class file	Contain all view Domain entities for show and bind data.	Already Implemented

5.3 Package: GroceryEmart.DataLayer

Resources

Names	Resource	Remarks	Status
Package Structure			
DataLayer	GroceryemartDbContext, DataGenerator cs file	All InMemoryDb setting class	Already Implemented

5.4 Package: GroceryEmart.Entiities

Resources

Names	Resource	Remarks	Status
Package Structure			
Entities	Product, Category, ProductOrder cs file	All Entities/Domain attribute	Already Implemented

5.5 Package: GroceryEmart.Tests

Resources

Note: - Under the GroceryEmart.Tests contain All Test cases for code evaluation, please don't try to alter and edit it.

6. Considerations

- For Role of Users three possible values must be used
  1.Admin
  2.User
- Your code will also be evaluated for code quality, naming conventions, readability etc.
- Make sure you do not modify existing class and method names and their signatures, else it would severely affect the final result.
- Make sure you do not add any new class or methods, else it would severely affect the final result.
- Make sure you do not modify any test cases, else it would severely affect final result

7. Execution Steps to Follow

1. **All actions like build, compile, running application, running test cases will be through Command Terminal.**

2. **To open the command terminal the test takers need to go to the Application menu (Three horizontal lines at left top) Terminal → New Terminal.**

3. **On command prompt, cd into your project folder (cd <Your-Project-folder>).**

4. **To build your project use command:**
   (Groceryemart / dotnet build)

5. **To launch your application, Run the following command to run the application:**
   (Groceryemart / dotnet run)

6. **This editor Auto Saves the code.**

7. **To test any Restful application, the last option on the left panel of IDE, you can find ThunderClient, which is the lightweight equivalent of POSTMAN.**

8. **To test any UI based application the second last option on the left panel of IDE, you can find Browser Preview, where you can launch the application.**

9. **To run the test cases in CMD, Run the following command to test the application:**
   (Groceryemart / dotnet test --logger "console;verbosity=detailed")
   (You can run this command multiple times to identify the test case status,
   and refactor code to make maximum test cases passed before final submission)

10. **If you want to exit(logout) and continue the coding later anytime (using Save & Exit option on Assessment Landing Page) then you need to use CTRL+Shift+B - command compulsorily on code IDE. This will push or save the updated contents in the internal git/repository. Else the code will not be available in the next login.**

11. **These are time bound assessments the timer would stop if you logout and while logging in back using the same credentials the timer would resume from the same time it was stopped from the previous logout.**

12. **You need to use CTRL+Shift+B - command compulsorily on code IDE, before final submission as well. This will push or save the updated contents in the internal git/repository, and will be used to evaluate the code quality.**