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# System Requirements Specification

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For

Finance  
Management Application  
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Version 1.0

# FINANCE MANAGEMENTAPPLICATION

## System Requirements Specification

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### 1 PROJECT ABSTRACT

The **Finance ManagementApplication** is a ASP.NET Web API 4.8 with MS SQL Server database connectivity. It enables users to manage various aspects of finance planning and management.

**Following is the requirement specifications:**

	Finance ManagementApplication	
Modules		
	1	Transaction
Transaction Module Functionalities		
	1	Create an Transaction
	2	Update the existing transaction details
	3	Get the transaction by Id
	4	Get all transactions
	5	Delete a transaction

## 2 ASSUMPTIONS, DEPENDENCIES, RISKS / CONSTRAINTS

### 2.1 Transaction CONSTRAINTS

- When fetching a transaction by id, if the transaction id does not exist, the operation should throw a custom exception.
- When updating a transaction, if the transaction id does not exist, the operation should throw a custom exception.
- When removing a transaction, if the transaction id does not exist, the operation should throw a custom exception.

### 2.2 Common Constraints

- For all rest endpoints receiving @RequestBody, validation check must be done and must throw custom exception if data is invalid
- 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

- Transaction Id (Int) Key, Not Null
- Amount (Decimal) of the transaction is not null.
- Category (String) of the transaction is not null
- Date (DateTime) of the transaction Finance not null.
- Type (string) of the transaction is not null.
- User Id (Int) of the transaction is not null
- Notes (string) of the transaction 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 FinanceCONTROLLER

<b>URL Exposed</b>		<b>Purpose</b>
1. /api/Finance/GetAllTransactions		Fetches all the Transactions
Http Method	GET	
Parameter	-	
Return	<IEnumerable<Transaction>>	
2. /api/Finance/CreateTransaction		Add a new Transaction
Http Method	POST	
Parameter 1	Transaction	
Return	Transaction	
3. /api/Finance/DeleteTransaction		Delete Transaction with given Transaction id
Http Method	DELETE	
Parameter 1	Int (id)	
Return	-	
4. /api/Finance/Get TransactionById		Fetches the Transaction with the given id
Http Method	GET	
Parameter 1	Int (id)	
Return	Transaction	
5. /api/Finance/UpdateTransaction		Updates existing Transaction
Http Method	PUT	
Parameter 1	Int (id)	
Parameter 2	Transaction	
Return	Transaction	

## 5. TEMPLATE CODE STRUCTURE

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## 5.1 Package: FinanceManagementApp

### Resources

Names	Resource	Remarks	Status
Package Structure			
controller	Finance Controller	Controller class to expose all rest-endpoints for auction related activities.	Partially implemented
Web.Config	Web.Config file	Contain all Services settings and SQL server Configuration.	Already Implemented

Interface	IFinanceService, interface	Inside all these interface files contains all business validation logic functions.	Already Implemented
Service	FinanceService CS file	Using this all class we are calling the Repository method and use it in the program and on the controller.	Partially Implemented
Repository	IFinanceRepository FinanceRepository CS file and interface.	All these interfaces and class files contain all CRUD operation code for the database. Need to provide implementation for service related functionalities	Partially Implemented
Models	Transaction cs file	All Entities/Domain attribute are used for pass the data in controller.	Already Implementation

## 5.2 Package: FinanceManagementApp.Tests

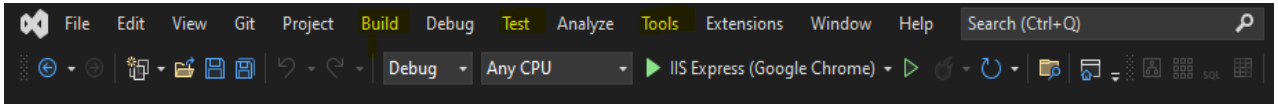
### Resources

The FinanceManagementApp.Tests project contains all test case classes and functions for code evaluation. Don't edit or change anything inside this project.

## 6. EXECUTION STEPS TO FOLLOW

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1. All actions such as building, compiling, running the application, and executing test cases will be performed using the Visual Studio interface. Rather than using the command terminal, the necessary operations will be initiated through the buttons, menus, and features available within the Visual Studio IDE.



2. Press **Ctrl + S** to save your code.
3. Steps to Apply Migration(Code first approach):
  - Go to "Tools" -> "NuGet Package Manager" -> "Package Manager Console" from the top menu bar of Visual Studio.
  - After clicking on "Package Manager Console," a new tab should open at the bottom of the Visual Studio window, displaying the Package Manager Console.
  - Run following command to apply migration : `update-database`
4. To build your project in Visual Studio, click on "Build" in the top menu, then select "Build Solution" or press **Ctrl + Shift + B**.
5. To launch your application, press **F5** or use **Ctrl + F5** to start your application without debugging.

**Note: The application will run in the local browser**
6. To test any Restful application, you can use POSTMAN.
7. To test any applications on a browser, use the internal browser in the workspace.
8. To run test cases in your project in Visual Studio, click on "Test" -> "Run All Tests" in the top menu. (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).
9. Steps to push changes to GitHub:
  - Go to "View" -> "Git Changes" from the top menu bar of Visual Studio.
  - In the "Changes" window on the right side of Visual Studio, you'll see the modified files.
  - Enter any commit message in the "Message" box at the top of the window, and click on "Commit All" button.

- After committing your changes, Click the "Push" button (Up Arrow Button) to push your committed changes to the GitHub repository.

**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 follow step-9 compulsorily. 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 follow step-9 compulsorily, 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.**

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