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## **RESTful Backend to Serve any Frontend System**

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**Abstract -** Now a day's each and every application used MVC(Model View Controller) structure. Model is used as structure of object. Controller is used for receiving request and sending response and View is used to display data. So, we are come up with the approach of creating a generic M and C i.e Model and Controller.

This project implements a Generic Rest Engine with user-friendly UI. The System follows all rules of database designing and REST technology, the system implements authentication mechanism CORS(Cross origin resource sharing) policy and RBAC(Roles based access control). Our implementation is for single type of user. In the system user can design their database and use it through REST API's Initially Developing the system in MVC.net.

*Key Words*: REST API's, MVC, api key, Cross origin Resource sharing, Request, Response.

#### 1. INTRODUCTION

This project implements a Generic rest engine using mvc.net and an interactive UI. The System follows all rules of database designing and REST technology, the system implements authentication mechanism CORS (Cross origin resource sharing) policy and RBAC (Roles based access control). Pass the data from one application to another application by using Http protocols through internet. We have tried to reduce some important problems from this project, for example: - data maintenance.

#### 2. BACKGROUND OVERVIEW

#### A. Existing System:

Here we need to design separately database for all the system where the developers need to design controllers, model and need to write all the query to perform data operations on database. For a same product if one needs to develop it in different technology (Android, IOS, and Web Application).

#### B. Drawbacks of Existing System:

Because of this traditional way of development there is no common database for same product therefore the replication of data takes place. Takes more amount of memory for storing record. Product size increases.

C. Proposed System:

D.

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Our system will give a new and bright future to Application development. The followings will be the procedure.

• The Application will naturally release the API's of database once the database gets design.

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- This information will be sent from Application to Application using Http protocols through internet.
- The software will design database according of how user wants and released the API's so that user can consume it in his/her application.
- Every protocols does different tasks.

#### 3. SCOPE AND OBJECTIVE

- The system will create database for Patient's Health record
- The system will generate REST API's to use the database.
- UI and metadata-based approach to dynamically modify and create a database schema.
- Provide loose coupling to frontend developer.
- Use same backend for different platform.

#### 4. SYSTEM ARCHITECTURE

Client will request API using authentication key. Request handler will handle the request, check if the request is valid or not and if the request is valid then using the metadata of the requested table it will create object and send it as http response.

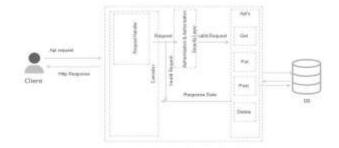


Fig -1: System Architecture.

#### 5. IMPLEMENTATION

To release secure API's user needs to define app. On defining the app the system will provide authentication key to user.

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The user need to define structure of the models. By using Authentication key and Model name user can consume API's.



Fig -2: App Definition.

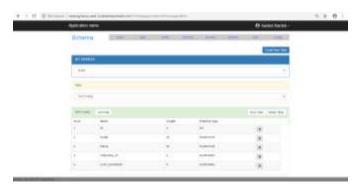


Fig -3: Model Definition.



Fig -4: API Docs.

# COMMUNICATION BETWEEN APPLICATIONS USING HTTP PROTOCOLS:

HTTP is connectionless: The HTTP client, i.e., a browser initiates an HTTP request and after a request is made, the client waits for the response. The server processes the request and sends a response back after which client disconnect the connection. So client and server knows about each other during current request and response only. Further requests are made on new connection like client and server are new to each other. • HTTP is media independent: It means, any type of data can be sent by HTTP as long as both the client and the server know how to handle the data content. It is required for the client as well as the server to specify the content type using appropriate MIME-type.

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 HTTP is stateless: As mentioned above, HTTP is connectionless and it is a direct result of HTTP being a stateless protocol. The server and client are aware of each other only during a current request. Afterwards, both of them forget about each other. Due to this nature of the protocol, neither the client nor the browser can retain information between different requests across the web pages.

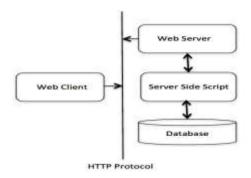


Fig -5: HTTP Protocol.

#### 6. CONCLUSION

We have created system-based approach to dynamically modify and created a database schema which would address the problem of dynamic data entry in data-rich environments where the schema can be "built" incrementally as new data becomes available. It is intended for users with needs for managing data for operational and research purposes but who have no access to DBAs or database design experts. Template forms are provided to the user but since there may be difference in requirements between users, the system facilitates modification of existing forms or create new forms from scratch resulting in appropriate real time modifications in the database schema keeping the user oblivious to the back-end The changes at the back-end involve adding new attributes to existing tables, adding new tables, creating relationships between these new tables and existing tables by assigning appropriate cardinality etc.

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