OPTIMAL COG

VASPP Technologies | Bangalore

Backend Design Documentation

Kavya Mahadev

Table of Contents

[Introduction 3](#_Toc127315876)

[Requirements 3](#_Toc127315877)

[Tables and Fields 4](#_Toc127315878)

[User 4](#_Toc127315879)

[Mrole 6](#_Toc127315880)

[MOrganization 6](#_Toc127315881)

[MCustomer 7](#_Toc127315882)

[MVendor 9](#_Toc127315883)

[MApplication 10](#_Toc127315884)

[**MAssignment** 10](#_Toc127315885)

[**MComment** 11](#_Toc127315886)

[**MCsf** 11](#_Toc127315887)

[**MDeliverable** 12](#_Toc127315888)

[**MDocSection** 13](#_Toc127315889)

[**MDocTemplate** 13](#_Toc127315890)

[**MDocument** 14](#_Toc127315891)

[**MFormType** 14](#_Toc127315892)

[**MGlossary** 14](#_Toc127315893)

[**MHelpFAQ** 15](#_Toc127315894)

[**MHelpTopic** 15](#_Toc127315895)

[**MLicenseType** 16](#_Toc127315896)

[**MMilestone** 16](#_Toc127315897)

[**MOrgChart** 17](#_Toc127315898)

[**MProgram** 17](#_Toc127315899)

[**MProjects** 18](#_Toc127315900)

[**MProjectTeam** 19](#_Toc127315901)

[**MRACI** 19](#_Toc127315902)

[Strapi Application 20](#_Toc127315903)

[**Git Details** 20](#_Toc127315904)

[**Git commands to pull/clone the code** 20](#_Toc127315905)

[**Git commands to push the code** 21](#_Toc127315906)

[**Initialize node module and Install dependencies** 21](#_Toc127315907)

[**Run strapi** 21](#_Toc127315908)

[Node JS Middleware 21](#_Toc127315909)

[**Git Details** 21](#_Toc127315910)

[**Steps to run the Middleware** 21](#_Toc127315911)

# Introduction

This database design document outlines the design for the OPTIMAL COG project, a program and document management tool that helps users manage their programs and documents, RACIs (Responsible, Accountable, Consulted, and Informed), and organization structures efficiently. The tool is designed to provide a centralized and user-friendly platform for managing program and document records, RACIs, and organization structures, allowing organizations to maintain control over their information and ensure that all relevant data is easily accessible.

The purpose of this document is to provide a comprehensive and detailed description of the database structure and its underlying data relationships. The document will describe the requirements for the database, the entity-relationship diagram (ERD), tables and fields, indexes, security measures, data migration, testing, and deployment. This document will serve as a reference for both the development team and stakeholders involved in the project, ensuring that all parties have a common understanding of the underlying data relationships and requirements.

The scope of this document is limited to the design of the OPTIMAL COG database, and does not include other aspects of the project, such as the user interface or application logic. The database design described in this document will be implemented using Strapi, a content management system that supports multiple databases, including MongoDB, PostgreSQL, and MySQL.

The OPTIMAL COG project aims to provide organizations with an efficient and flexible tool for managing their programs, documents, RACIs, and organization structures. The tool will be designed to be scalable and customizable, allowing organizations to easily extend the application to meet their specific needs. The end result will be a robust and reliable platform that supports the effective management of program and document records, RACIs, and organization structures.

# Requirements

The requirements for the OPTIMAL COG database design are as follows:

1. Data Storage: The database must store all relevant program, document, RACI, and organization structure information, including metadata such as creation date, modification date, author, and status.
2. User Management: The database must support user management, including user authentication and authorization, to ensure secure access to sensitive information.
3. Version Control: The database must support version control, allowing users to track changes to program and document records over time.
4. Approval Workflows: The database must support approval workflows, allowing users to manage document approval processes and ensure that only approved versions of records are accessible.
5. Search and Retrieval: The database must provide a robust search and retrieval system to allow users to quickly find the information they need.
6. Reporting: The database must support reporting capabilities, allowing users to generate reports to support decision-making and accountability.
7. Data Migration: The database must support data migration from existing systems, if applicable, to minimize disruption to the organization.
8. Scalability and Flexibility: The database must be scalable and flexible, allowing organizations to easily customize and extend the application to meet their specific needs.
9. Security: The database must implement appropriate security measures to ensure the confidentiality and integrity of sensitive information.
10. Testing: The database design must be thoroughly tested to ensure that it meets all requirements and performs as expected.

These requirements will serve as the basis for the design and development of the OPTIMAL COG database. The database design must be following these requirements, and the development team must validate that the final database design meets these requirements before deployment.

# Tables and Fields

## User

| **NAME** | **TYPE** |
| --- | --- |
| **username** | Text |
| **email** | Email |
| **provider** | Text |
| **password** | Password |
| **resetPasswordToken** | Text |
| **confirmationToken** | Text |
| **confirmed** | Boolean |
| **blocked** | Boolean |
| **role** | Relation with *Role (from: users-permissions)* |
| **mrole** | Relation with *Mrole* |
| **firstName** | Text |
| **lastName** | Text |
| **phone** | Text |
| **m\_organisation** | Relation with *MOrganisation* |
| **city** | Text |
| **country** | Text |
| **status** | Enumeration *(New, Designated, On-boarded, Off-boarded, Archived)* |
| **streerAddress** | Text |
| **area** | Enumeration *(ITS, Business Consultant, Marketing, Finance Department)* |
| **type** | Enumeration *(Internal, Customer, Vendor)* |
| **m\_vendor** | Relation with *MVendor* |
| **m\_customer** | Relation with *MCustomer* |
| **serviceStartDate** | Date |
| **serviceEndDate** | Date |
| **userID** | Text |
| **m\_csf** | Relation with *MCsf* |
| **m\_deliverable** | Relation with *MDeliverable* |
| **appPermission** | JSON |
| **mracis** | Relation with *MRACI* |

## Mrole

| **NAME** | **TYPE** |
| --- | --- |
| **roleID** | Text |
| **roleName** | Text |
| **m\_organisation** | Relation with *MOrganisation* |
| **description** | Text |
| **roleType** | Enumeration *(Solution Role, Functional role)* |
| **m\_project\_teams** | Relation with *MProjectTeam* |

## MOrganization

| **NAME** | **TYPE** |
| --- | --- |
| **orgID** | Text |
| **name** | Text |
| **description** | Text |
| **email** | Email |
| **phone** | Text |
| **address** | Text |
| **allowedNoOfUsers** | Number |
| **m\_applications** | Relation with *MApplication* |
| **users\_permissions\_user** | Relation with *User (from: users-permissions)* |
| **m\_license\_type** | Relation with *MLicenseType* |
| **validFrom** | Date |
| **validTo** | Date |
| **mroles** | Relation with *Mrole* |
| **m\_program** | Relation with *MProgram* |
| **m\_glossaries** | Relation with *MGlossary* |
| **m\_helps** | Relation with *MHelpTopic* |

## MCustomer

| **NAME** | **TYPE** |
| --- | --- |
| **custID** | Text |
| **customerName** | Text |
| **cvTypeField** | Enumeration *(Customer Internal, Customer External, Supplier, Third Party, Agency, Consultancy, IT Service provider)* |
| **description** | Text |
| **email** | Email |
| **contact** | Text |
| **address** | Text |
| **city** | Text |
| **country** | Text |
| **region1** | Text |
| **region2** | Text |
| **zipCode** | Number |
| **contactPerson** | Text |
| **contactEmail** | Email |
| **contactPhone** | Text |
| **isArchived** | Boolean |
| **m\_projects** | Relation with *MProject* |
| **m\_organisation** | Relation with *MOrganisation* |
| **m\_documents** | Relation with *MDocument* |

## MVendor

| **NAME** | **TYPE** |
| --- | --- |
| **vendID** | Text |
| **vendorName** | Text |
| **cvTypeField** | Enumeration (Vendor Direct, Vendor Indirect, Supplier, Third Party, Agency, Consultancy, IT Service Provider) |
| **about** | Text |
| **vendorContact** | Text |
| **vendorEmail** | Email |
| **vendorAddress** | Text |
| **vendorCity** | Text |
| **vendorCountry** | Text |
| **region1** | Text |
| **region2** | Text |
| **zipCode** | Number |
| **contactPerson** | Text |
| **contactEmail** | Text |
| **contactPhone** | Text |
| **isArchived** | Boolean |
| **m\_projects** | Relation with *MProject* |
| **m\_csf** | Relation with *MCsf* |
| **m\_deliverables** | Relation with *MDeliverable* |
| **m\_organisation** | Relation with *MOrganisation* |
| **m\_documents** | Relation with *MDocument* |

## MApplication

| **NAME** | **TYPE** |
| --- | --- |
| **applicationID** | Text |
| **name** | Text |
| **description** | Text |
| **url** | Text |
| **m\_organisations** | Relation with *MOrganisation* |
| **isArchived** | Boolean |
| **m\_help\_topics** | Relation with *MHelpTopic* |

## **MAssignment**

| **NAME** | **TYPE** | |
| --- | --- | --- |
| **name** | Text |  |

## **MComment**

| **NAME** | **TYPE** |
| --- | --- |
| **comment** | Text |
| **m\_program** | Relation with *MProgram* |
| **m\_project** | Relation with *MProject* |
| **admin\_user** | Relation with *User (from: admin)* |

## **MCsf**

| **NAME** | **TYPE** |
| --- | --- |
| **csfID** | Text |
| **name** | Text |
| **description** | Text |
| **startDate** | Date |
| **endDate** | Date |
| **deadLineDate** | Date |
| **users\_permissions\_user** | Relation with *User (from: users-permissions)* |
| **m\_vendor** | Relation with *MVendor* |
| **effort** | Number |
| **progress** | Number |
| **priority** | Enumeration |
| **m\_deliverable** | Relation with *MDeliverable* |
| **m\_milestone** | Relation with *MMilestone* |
| **mraci** | Relation with *MRACI* |
| **m\_documents** | Relation with *MDocument* |
| **m\_project** | Relation with *MProject* |

## **MDeliverable**

| **NAME** | **TYPE** |
| --- | --- |
| **deliverablesID** | Text |
| **name** | Text |
| **description** | Text |
| **startDate** | Date |
| **endDate** | Date |
| **status** | Enumeration *(New, In-Progress, Completed)* |
| **deadlineDate** | Date |
| **dependentTask** | Text |
| **m\_vendor** | Relation with *MVendor* |
| **m\_csf** | Relation with *MCsf* |
| **m\_project** | Relation with *MProject* |
| **m\_program** | Relation with *MProgram* |
| **users\_permissions\_user** | Relation with *User (from: users-permissions)* |

## **MDocSection**

| **NAME** | **TYPE** |
| --- | --- |
| **name** | Text |
| **m\_doc\_template** | Relation with *MDocTemplate* |
| **questions** | JSON |

## **MDocTemplate**

| **NAME** | **TYPE** | |
| --- | --- | --- |
| **name** | Text |
| **validFrom** | Date |
| **validTo** | Date |
| **description** | Text |
| **m\_form\_type** | Relation with *MFormType* |
| **status** | Enumeration *(Draft, Published)* |  |

## **MDocument**

| **NAME** | **TYPE** |
| --- | --- |
| **name** | Text |
| **m\_project** | Relation with *MProject* |
| **m\_customer** | Relation with *MCustomer* |
| **m\_vendor** | Relation with *MVendor* |
| **type** | Enumeration *(Minutes of Meeting, Document, Questionnaire, Roadmap/Timeline, assessment, Business Process, Lean Specification, Technical Specification, IT Process)* |
| **description** | Text |
| **m\_csf** | Relation with *MCsf* |
| **file** | Media |

## **MFormType**

| **NAME** | **TYPE** |
| --- | --- |
| **type** | Text |

## **MGlossary**

| **NAME** | **TYPE** |
| --- | --- |
| **terminology** | Text |
| **definition** | Text |
| **businessDef** | Text |
| **techDef** | Text |
| **financeDef** | Text |
| **status** | Enumeration *(New, Approved)* |
| **char** | Text |
| **classification** | Text |
| **m\_organisation** | Relation with *MOrganisation* |

## **MHelpFAQ**

| **NAME** | **TYPE** |
| --- | --- |
| **question** | Text |
| **answer** | Text |
| **m\_help\_topic** | Relation with *MHelpTopic* |

## **MHelpTopic**

| **NAME** | **TYPE** |
| --- | --- |
| **topic** | Text |
| **description** | Text |
| **m\_organisation** | Relation with *MOrganisation* |
| **m\_application** | Relation with *MApplication* |
| **m\_help\_faqs** | Relation with *MHelpFAQ* |

## **MLicenseType**

| **NAME** | **TYPE** |
| --- | --- |
| **licenseID** | Text |
| **licenseType** | Text |

## **MMilestone**

| **NAME** | **TYPE** |
| --- | --- |
| **milestoneID** | Text |
| **name** | Text |
| **description** | Text |
| **startDate** | Date |
| **endDate** | Date |
| **status** | Enumeration *(New, In-Progress, Completed)* |
| **m\_csfs** | Relation with *MCsf* |
| **m\_program** | Relation with *MProgram* |
| **m\_project** | Relation with *MProject* |

## **MOrgChart**

| **NAME** | **TYPE** |
| --- | --- |
| **m\_program** | Relation with *MProgram* |
| **users\_permissions\_users** | Relation with *User (from: users-permissions)* |
| **status** | Enumeration *(Draft, Submitted, Approved, Rejected)* |

## **MProgram**

| **NAME** | **TYPE** |
| --- | --- |
| **programID** | Text |
| **name** | Text |
| **description** | Text |
| **startDate** | Date |
| **endDate** | Date |
| **status** | Enumeration *(New, In-Progress, Archived, Cancelled, Completed)* |
| **m\_organisation** | Relation with *MOrganisation* |
| **type** | Enumeration |
| **countryOrCity** | Text |
| **effort** | Number |
| **progress** | Number |
| **priority** | Enumeration *(Critical, Not Critical, Relevant, Less Relevant)* |
| **m\_projects** | Relation with *MProject* |
| **m\_deliverables** | Relation with *MDeliverable* |
| **m\_milestones** | Relation with *MMilestone* |
| **m\_comments** | Relation with *MComment* |
| **mracis** | Relation with *MRACI* |

## **MProjects**

| **NAME** | **TYPE** |
| --- | --- |
| **projectID** | Text |
| **name** | Text |
| **description** | Text |
| **startDate** | Date |
| **endDate** | Date |
| **effort** | Number |
| **m\_customers** | Relation with *MCustomer* |
| **m\_vendors** | Relation with *MVendor* |
| **progress** | Number |
| **priority** | Enumeration *(Critical, Not Critical, Relevant, Less Relevant)* |
| **status** | Enumeration *(New, In-Progress, Completed, Archived)* |
| **m\_program** | Relation with *MProgram* |
| **m\_project\_teams** | Relation with *MProjectTeam* |
| **m\_deliverables** | Relation with *MDeliverable* |
| **m\_milestones** | Relation with *MMilestone* |
| **m\_comments** | Relation with *MComment* |
| **mraci** | Relation with *MRACI* |
| **m\_documents** | Relation with *MDocument* |
| **m\_csfs** | Relation with *MCsf* |

## **MProjectTeam**

| **NAME** | **TYPE** |
| --- | --- |
| **m\_projects** | Relation with *MProject* |
| **users\_permissions\_user** | Relation with *User (from: users-permissions)* |
| **mroles** | Relation with *Mrole* |

## **MRACI**

| **NAME** | **TYPE** |
| --- | --- |
| **status** | Enumeration *(New, Draft, Submitted, Approved, Rejected)* |
| **m\_program** | Relation with *MProgram* |
| **m\_project** | Relation with *MProject* |
| **m\_csf** | Relation with *MCsf* |
| **m\_assignment** | Relation with *MAssignment* |
| **accountable** | Relation with *User (from: users-permissions)* |
| **consulted** | Relation with *User (from: users-permissions)* |
| **informed** | Relation with *User (from: users-permissions)* |
| **responsible** | Relation with *User (from: users-permissions)* |
| **type** | Enumeration *(CSFR, PPR)* |
| **approver** | Relation with *User (from: users-permissions)* |

# Strapi Application

## **Git Details**

url: https://github.com/VASPP-Code/OPTIMAL-CoG-BE

user:kavya@vaspp.com

password:Init2022!

## **Git commands to pull/clone the code**

**Pull**

git pull origin master

**Clone**

git clone <https://github.com/VASPP-Code/OPTIMAL-CoG-BE>

## **Git commands to push the code**

git add .

git commit -m “commit message”

git push origin main

Note: A pull request need to be created after every push on the git hub for both the branch to have updated code

## **Initialize node module and Install dependencies**

npm init

npm install

## **Run strapi**

**In Development**

npm run develop

**In Production**

npm run start

Note: All the above commands need to be run inside the project repository

# Node JS Middleware

We have developed a node.js middleware that acts as a reverse proxy for your Strapi APIs. This is a common approach for protecting your APIs from direct client access, as it allows us to add an extra layer of security and control to your application.

When a client makes a request to the application, the request is first handled by the node.js proxy server. The proxy server then makes a request to the Strapi APIs on behalf of the client, and returns the response back to the client.

## **Git Details**

**Repository:** <https://github.com/VASPP-Code/OPTIMALCogMiddleware>

## **Steps to run the Middleware**

npm init

npm install

node server