Object Oriented Programming and Design Project : MESS OPERATION MANAGEMENT SYSTEM

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Project Description

- The project is Mess Operation Management System includes two major Operations:
    - Mess Incharge
    - Student Mess Program

- The root node to support the Mess operations which is further connected to two sub nodes mentioned above

Mess Operations

- To manage the mess,student registration, the system checks inventory , submits order and approves vendor availability.

- The operations done by this sub node are:
  - New Admission
  - Withdraw Admission
  - Update Creds
  - Records
  - Student Data
  - Order New Items for Mess
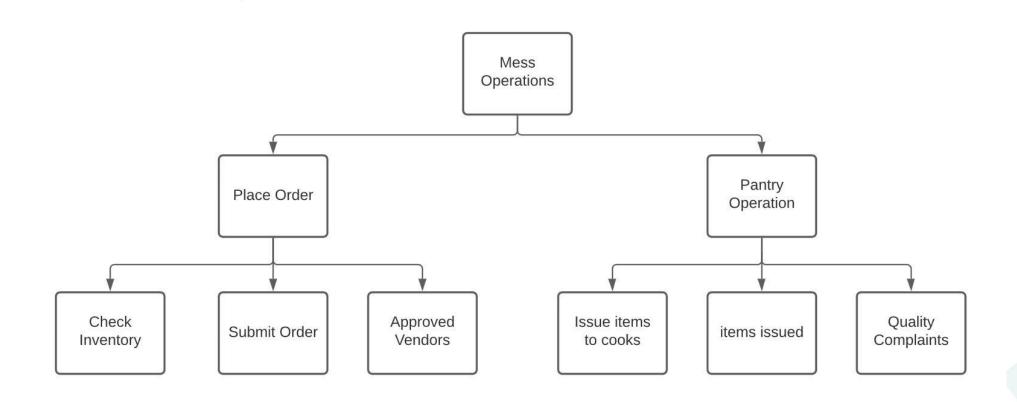 - Change the status of item
  - Pantry

Mess Student

- Mess Student for placing an order and checking credit details.

- The operations performed by this sub node are :
  - Place Order
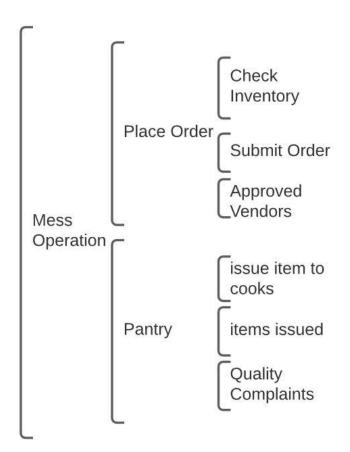 - Account Details
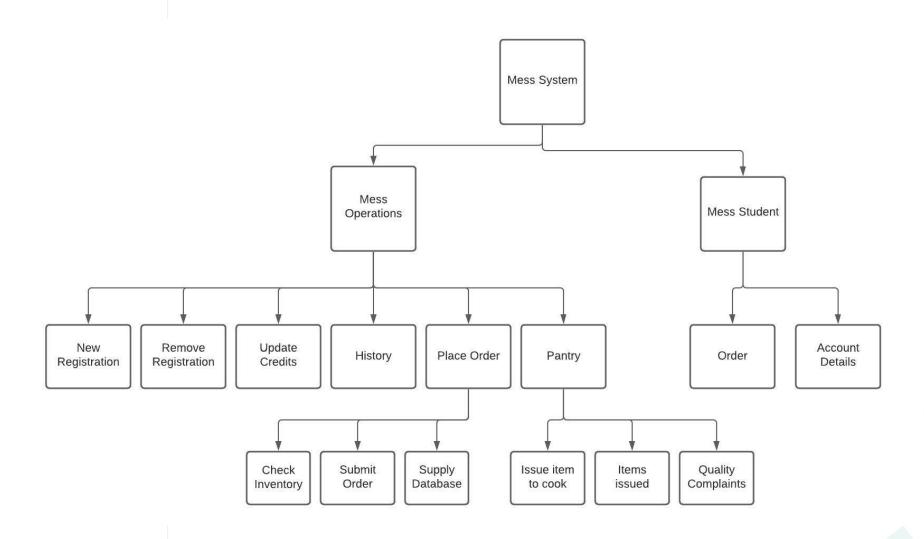 - Register Complaints

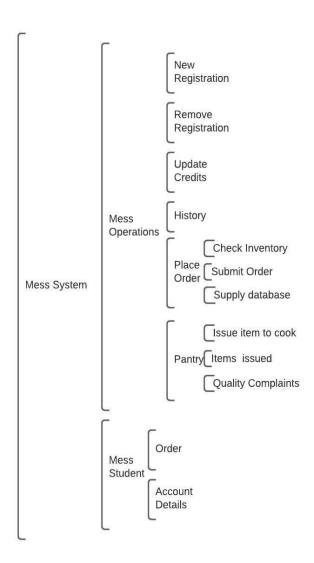# OLD Model Cartesian Decomposition

OLD Model Modular Structure

NEW Model Cartesian Decomposition

NEW Model Modular Structure

Mess System
- Mess Operations
  - New Registration
  - Remove Registration
  - Update Credits
  - History
  - Place Order
    - Check Inventory
    - Submit Order
    - Supply database
  - Pantry
    - Issue item to cook
    - Items issued
    - Quality Complaints
- Mess Student
  - Order
  - Account Details

- Earlier we had individual project in which we had to build a mess inventory system. But now it has become a group project due to which we have added some extra features.
- We have added **Mess Operations** which contains sub nodes **New Admission**,**Withdraw Admission**,**Update Creds**,**Records**, **Student Data**, **Order New Items for Mess,Change the status of item,Pantry** etc.
- **Student Operations** contains **Place order,A/C Details,Register Complaints.**
- Earlier we had only Place Order and Pantry
- In **Order New Items for Mess,** which contained inventory and orders for further order to inventory.
- In **Pantry,** Cooks issued order through inventory ,can check issued orders and can check
- **Student Operations** is where student order are placed and account details can be fetched.

- **New Admission** is used to register to new student to the mess and further credits is added to the account according to the money provided.
- **Withdraw Admission** is used to remove student from the system.
- **Update Creds** is further used for adding credits to the account for which items can be bought at students counter.
- **Records** is used to check history of order placed in the system.

Features

- We have implemented almost all the features as per written in first submission and further added additional features like mess students and mess operation.
- We made registration and ordering system for students which wasn't part in first submission.

Program flow

The program starts from main function which has two option either to go with Mess operations or Student operation.

The program of **Mess operations** implements the mess functions performs operation such as new admission,new orders for pantry,removal of student or updation of credits.
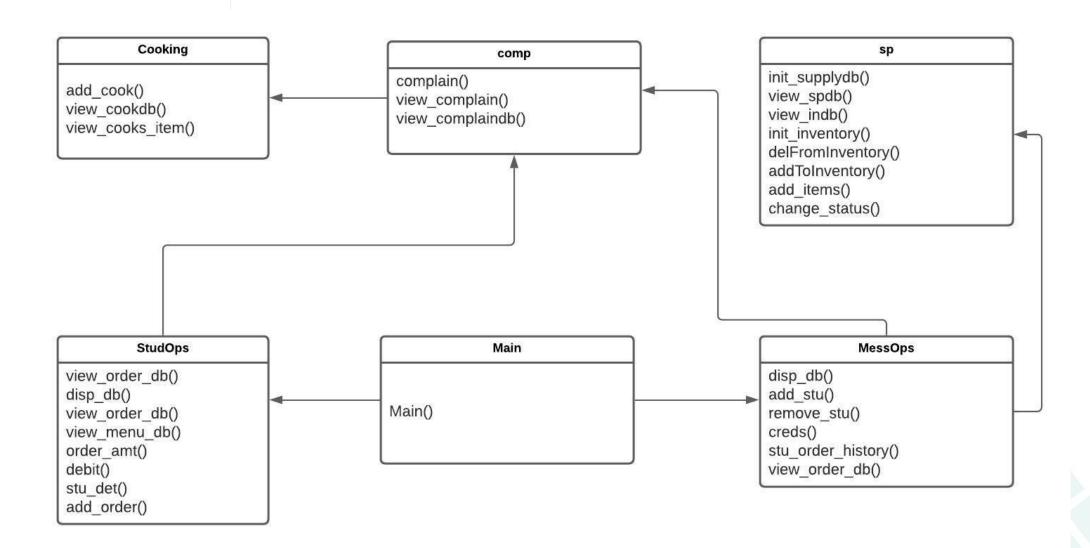
Further for **Mess student Operation** is operation to be performed at student end or at the counter where order is placed. Operations such as place order,see A/C details or register complaints can be performed.

Mess Operations manages things like registration and inventory management and place orders for mess .

Mess Student manages things like taking orders,showing A/C credits and Register complaints from students.

Class Diagram

SRP – Single Responsibility Principle

As the principles states that classes should have only **single reason to change that means every class should have single task or purpose.**

Here we have divided every other task into various classes and each of them perform their single responsibility of their own.

StudOps takes care of student and its orders.

MessOps takes care about the objectives of the mess.

Cooking manages the cooks and their items

Comp manages the complaints for cooks and students

sp manages the inventory about the mess.

Open Closed Principle

This principle suggests that **software entities should open for extension but closed for further modification**.

Our program is not open modification but can be extended by extending the classes and further adding additional functions.

No modification in the programs is required and it can be extended to additional features.

Classes such as **studOps,MessOps** can be further extended to add additional functions in the programs.

Liskov's Substitution Principle

Here the principle states that **derived or child class should be able to replace parent or the base class.**

It simply means that child class should be able to take place of parent ot base class.

cooking extends to **comp** which takes complete configuration of **cooking** , and is able to substitute it.

Here the **comp** and **sp** has been extended to **messOps** which takes complete configuration of **comp** and **sp** , and is able to replace them.

Comp extends to **studOps** which takes complete configuration of **Comp**, and is able to work .

Contributions

- Mess Student and pantry system was built by Abhinav Saurabh like orders from cooks to inventory and Student registration system.
- Most of part of Mess Operation was built by Aman Bhardwaj like registration and inventory system etc.