INVENTORY MANAGEMENT

ADVANCED SOFTWARE ENGINEERING
UNDER THE GUIDANCE OF Dr. Yugyung Lee

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1. Introduction:

For the success of any business, an obvious maintenance of records is very much necessary. A good application to maintain and note these records will make the calling very easy. This is web application which will be used by UMKC to provide best possible services to faculty members.

2. Goals and Objectives of the Project:

2.1. Motivation:

The motivation of our project is to provide product information, availability and delivery of requested products to users. Administrator is the one who takes care of the total system by entering his/her login details. Users can request for new products anytime. Initially, we thought to develop an application for Machinery Inventory Management. But then, the thought struck us to start a conversation of making this application very useful to UMKC faculty members. Hence, we have come up with the advantageous application.

2.2. Objective:

Main objective for implementing inventory management system project is to design a efficient and automated application for UMKC with the certain search functionality being used in the organization for product search by the faculty. This will help in managing and maintaining the specific task like searching for the certain product online which would be very easy to fetch the objects whatever they require.

2.3. Significance:

The pros of the project are this project maintains and provides ample excellent services to users. There is no need to maintain records manually. Just a click can make a lot of difference to both Admin and Users by using this web application. Users can order new products whenever required though online by logging in into his account. As stated earlier, administrator controls the whole system. So, he can add up as many users as he supposes to, whenever possible. As this application is solely for UMKC faculty members, to the total number of users that administrator adds up must be equal to the total number of faculty members at UMKC.

3. Project Background and related work:

We are now going to present two similar kind of applications. The following are the URLs of the applications, similarities and differences with our app.

a) Equipment/ Tool Inventory Software for Windows:

http://www.primasoft.com/pro_software/equipment_tool_software_pro.htm

Similarity: This application and ours are similar with the features like organizing, tracking, maintenance of records of items.

Differences: This is a desktop application, unlike ours. This app is the inventory of software equipment tools, where as our app will be used by UMKC faculty members only. It is used to print ID cards even, but out app solely is concerned with providing the items ordered by the faculty.

b) **Asset Inventory Management Software:**

http://www.manageengine.com/products/service-desk/asset-inventory-management.html?gclid=CLKB-_uF3rwCFY1r7AodJx8ABw&gclsrc=aw.ds

Similarity: This application and ours are similar with the features like tracking, updating items, maintenance of history and records of items.

Differences: Our app is a web app, but this app is an Integrated Asset Management Tool which works only on desktop. This app is the inventory of all hardware and software asset pertaining to an organization, where as our app is exclusively for UMKC faculty members. It concentrates on asset states, cost factors, remote control etc. But our app is solely concerned with providing the items ordered by the faculty.

4. Proposed System:

4.1. System Features:

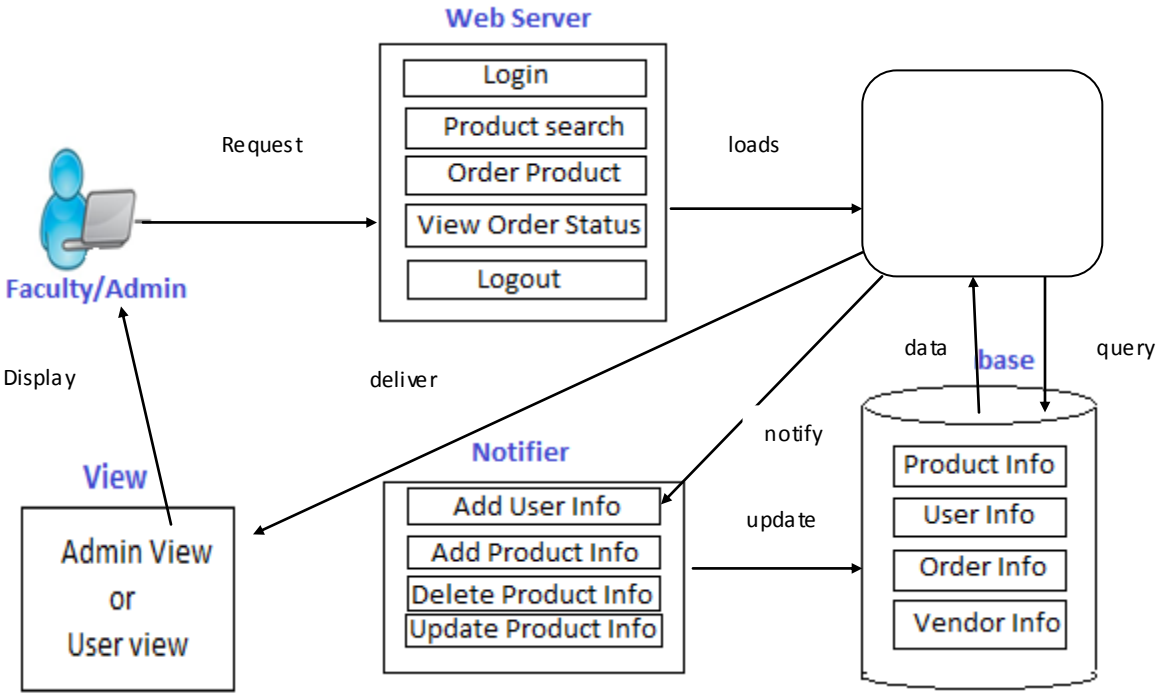
4.1.1. Front-end

a. **Product search:** The users can have feasibility to search for the required product/item instead of going through the list of all items. User can review about the product description and availability.
b. **Product Order :** User has a choice to request the admin regarding the necessary item of his choice. And the admin can order the products to the vendors when they are out of inventory.
c. **Check Order Status:** User can check the status of his product request sent to admin. Admin will monitor to maintain the status of user's request. Similarly, admin can view the order status which is maintained by the merchant.

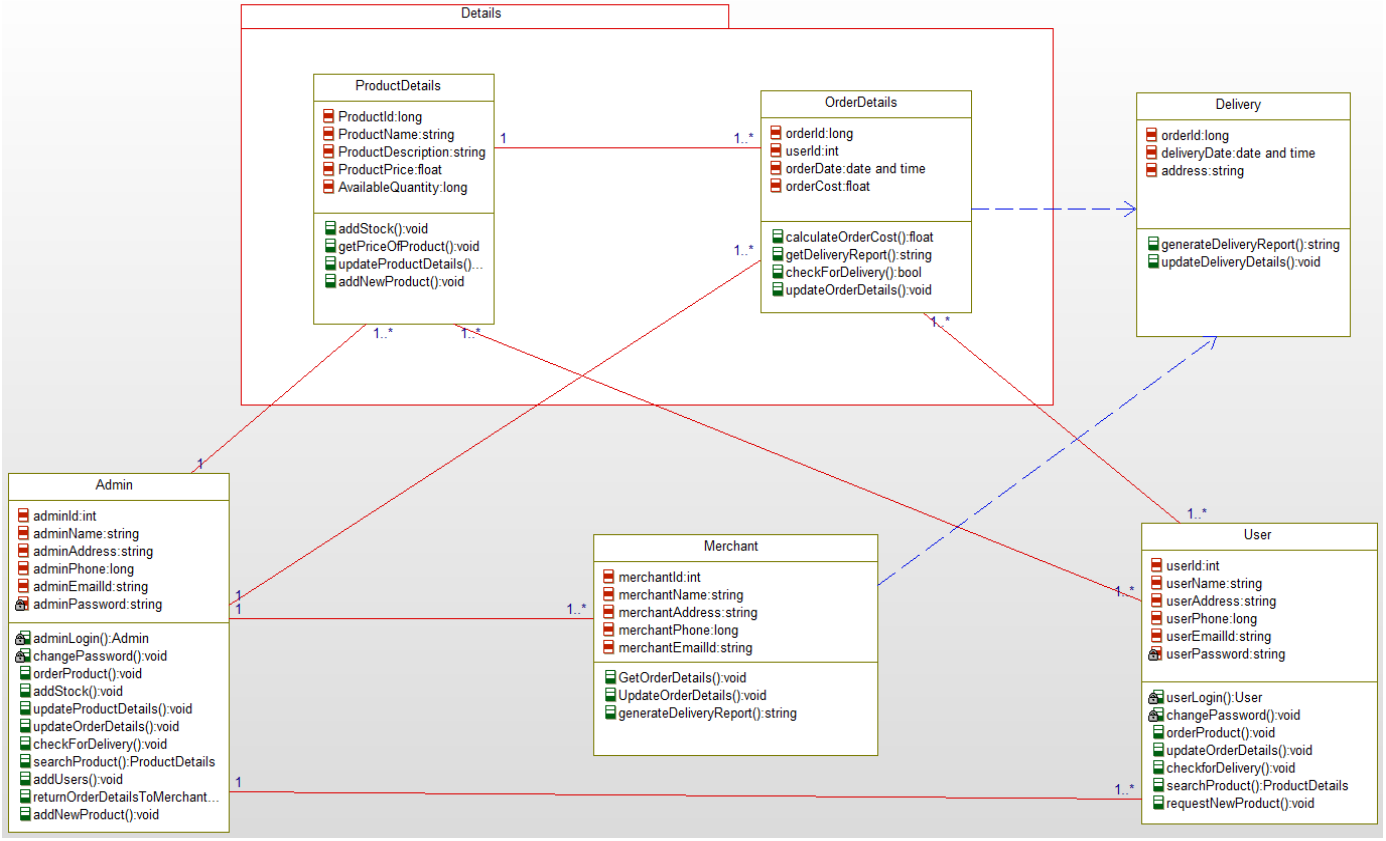
4.1.2. Back-end

a. **Product Information:** The system will provide information regarding the product name, description, cost of item, available quantity, supplier information. This information is very important for user such that it makes the job easy for both user and admin.
b. **Order Information:** The system will have a record about the product requests from user i.e. faculty and product orders from admin to vendors. This helps the admin to know pending requests and orders. And can update the information once requests and orders are completed.
c. **Vendor Information**: The system maintains the record of vendors that are supplying the products to UMKC. This information helps the admin to make orders easier for a particular vendor of a particular product.
d. **User Information**: The system contains the user details like id, password, name, address, phone number, and email Id. This information is needed to maintain security of the system. No one else can login to the account other than the registered user.

4.2. System Architectural Diagram:



4.3. Class Diagram:

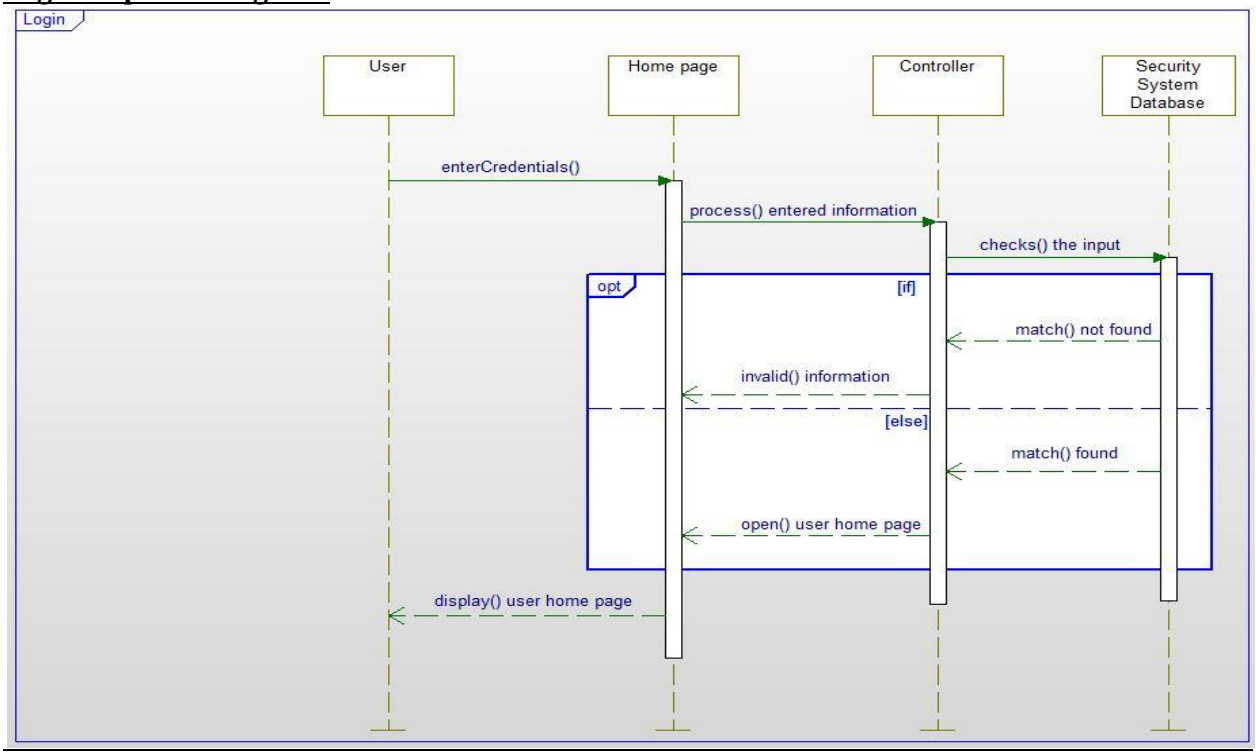


4.4 Service Specification:

a. **Admin Login(Increment 1):**
Admin Login enables administrator to log into Admin Page where there will be an access to various functionalities. This page allows admin to enter username and password. After entering the details, the details are checked and gets validated with the database. Once details are verified , the page gets redirected to Admin Home Page.
Degree of importance: Essential
Difficulty: 13 units

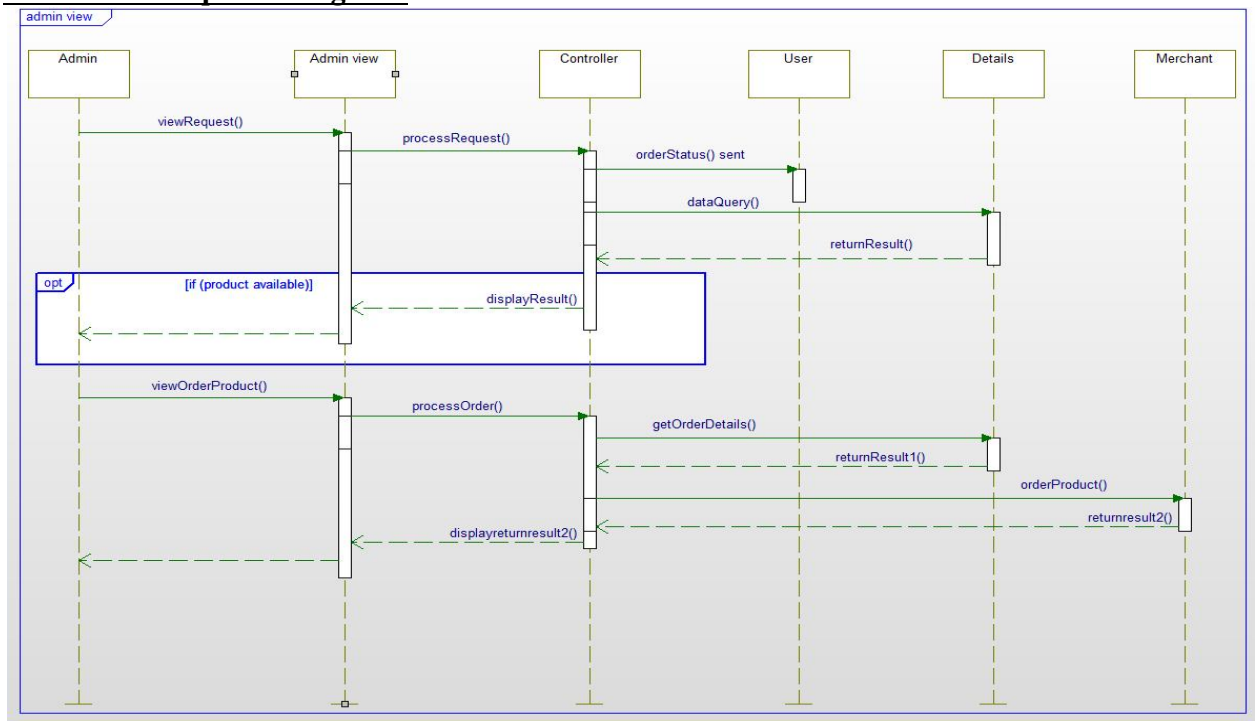
b. **User Login(Increment 1) :**
User Login enables user to log into user Page where there will be an access to various functionalities for user. This page allows user to enter his username and password. After entering the details, the details are checked and gets validated with the database. If the details entered are correct, the page gets redirected to User Home Page.
Degree of importance: Essential
Difficulty: 13 units

Login Sequence Diagram:



c. **Admin Home Page(Increment 1):**
Admin page is one of the most complicated part in our web application. It serves several functionalities to admin like Inventory (in which product information etc is available), orders(in which information about request for products from users, product orders to merchants is available) etc. Logout is another feature of this page.
Degree of importance: Essential
Difficulty: 8 units

Admin view Sequence Diagram:



d. User Home Page(Increment 1):

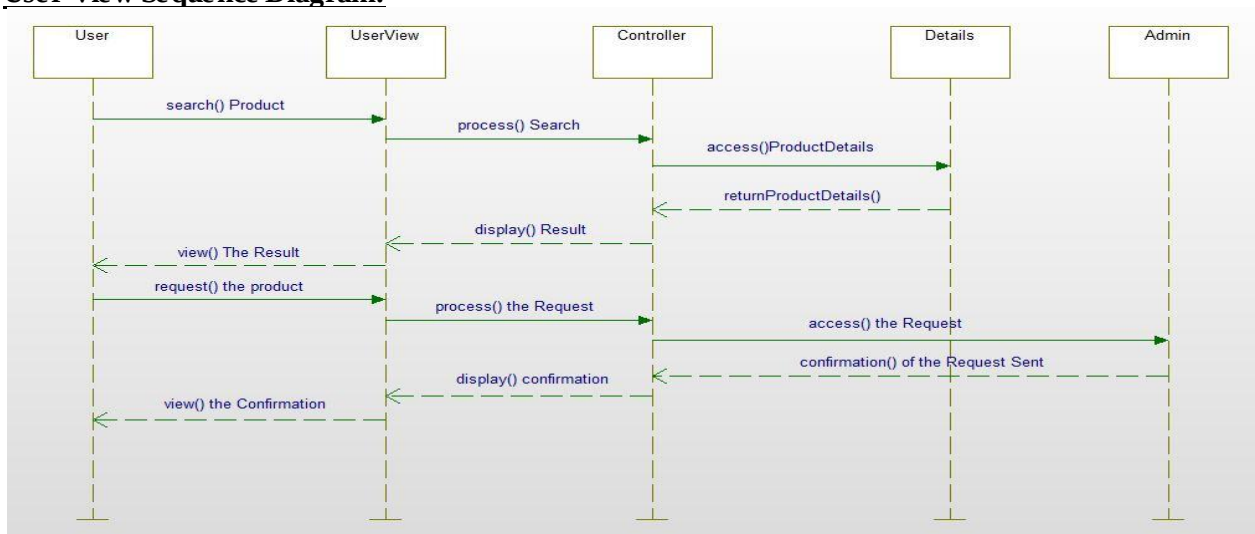
User Home Page is a part of our web application which provides user with some functionalities which the administrator serves. **Search** is one of the main features of this page which allows users to search information about the desired product, order for new products etc.

Besides Search, there are also other features like viewing the user's profile, View order status(allows user to view the status of the ordered product), Logout of the page and so on.

Degree of importance: Essential

Difficulty: 8 units

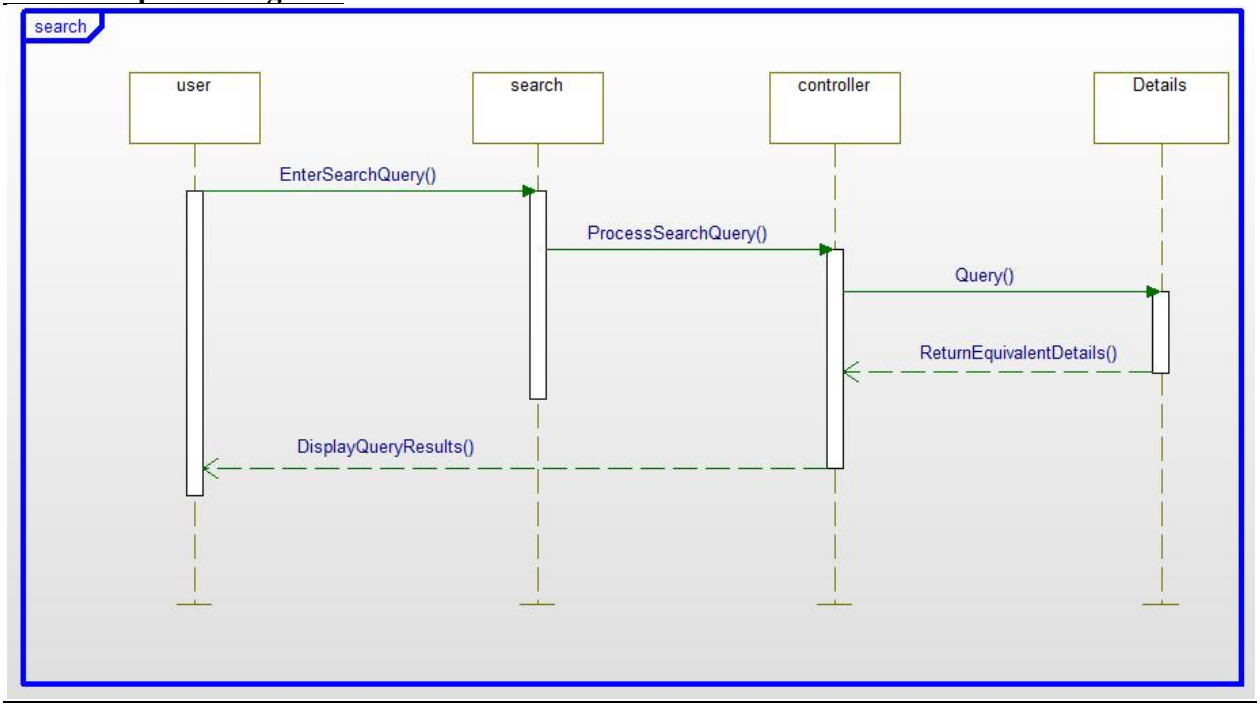
User View Sequence Diagram:



e. **Inventory Functionality(Increment 2):**
Our second increment in this module is to implement the Inventory functionality which was previously introduced in first increment. This is a huge task as it contains information of each and every product. Admin can review product information. He can update product information like quantity, adding new products, and deleting existing products.
Degree of importance: Essential
Difficulty: 20 units

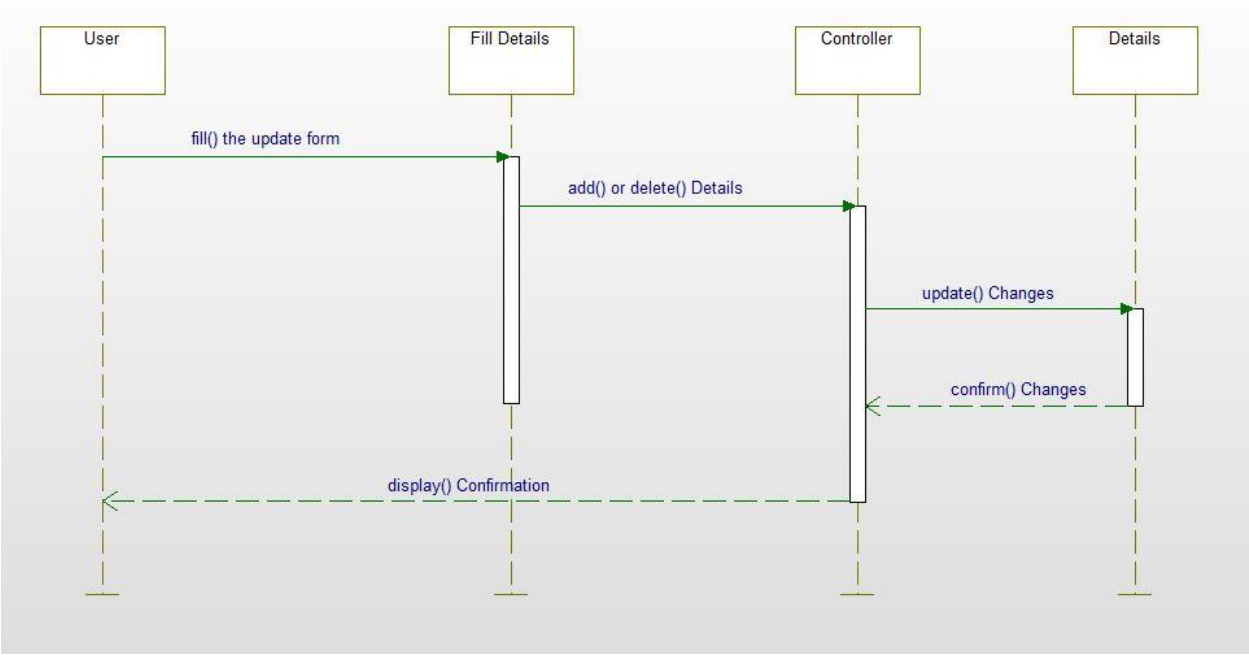
f. **Product search Functionality(Increment 2):**
In this module, implementation of Searching the desired products is shown. There will be three option available where the user can be able to search the desired product according to product name, product type and vendor. For instance, let us take into consideration, product name. When a user requests the search according to the product name, an output pops up displaying all the products related to the given product name. Similarly, with other two kinds of search options.
Degree of importance: Essential
Difficulty: 20 units

Search Sequence Diagram:



g. **Order Functionality(Increment 3):**
Our third increment in this module is to implement the order functionality which was previously introduced in first increment. In "order", we have planned to develop two functionalities. One is "Review Requests" and the other is "Order Products". In "Review Requests", Admin can have a look at the order requests sent by users where as in "order products", Admin can order products that are out of inventory. The required merchant information is available in the database such that it makes the admin easy to order the required product.
Degree of importance: Essential
Difficulty: 20 units

Order Sequence Diagram:



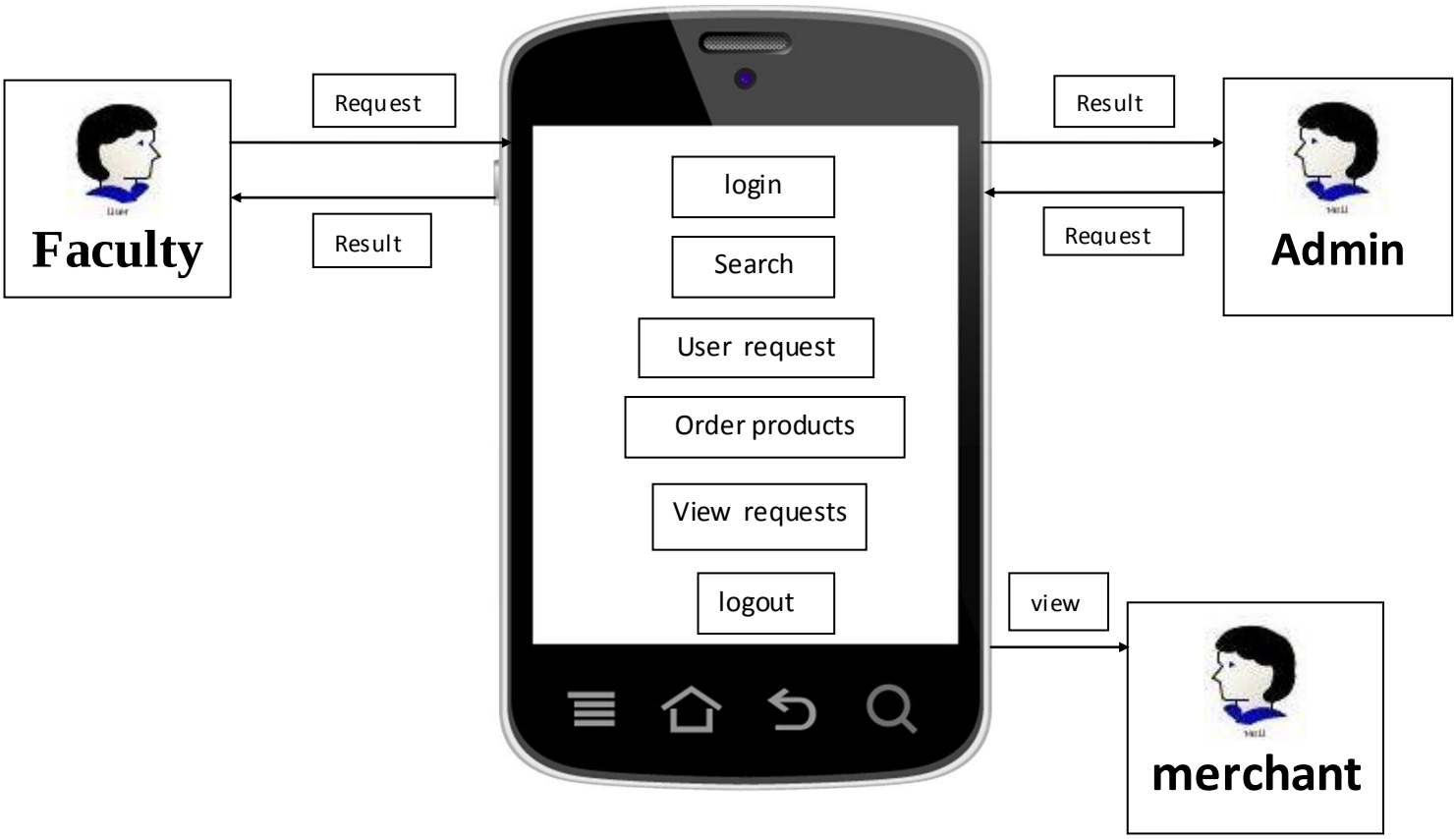
h. **Request Product(Increment 3):**
we have implemented search option in second increment. We will add a function to request the product required. This request is sent to admin and he/she will process that request.
Degree of importance: Essential
Difficulty: 20 units

i. **Payment(Increment 4):**
Payment for the order is paid through check or online banking. Once payment is received to the merchant, he will process the order.
Degree of importance: Not Essential
Difficulty: 10 units

j. **Order Status(Increment 4):**
Admin can check order status i.e. whether the package has been dispatched or not, processing, in transit, delivered etc. Delivery report will be generated by merchant about the Order Status.
Degree of importance: Essential
Difficulty: 20 units

k. **Request Status(Increment 4):**
User can check request status i.e. if the product is available in the inventory, he will receive products very soon. But, if product is out of stock, then it will take some time.
Degree of importance: Essential
Difficulty: 20 units

4.5 Design Of Mobile Client:



5. Bibliography:

- http://1000projects.org/inventory-management-system-java-project.html
- http://social.msdn.microsoft.com/Forums/en-US/8b919433-cb49-4a90-a90a-29c873412ce4/inventory-management-system?forum=csharpgeneral