

Spare Parts in Full Stack

A Project-II Report

Submitted in partial fulfillment of requirement of the

Degree of

**BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE &
ENGINEERING**

BY

**Yougal Choudhary
EN19CS3L1028**

Under the Guidance of
Mr. Sachin Solanki



**Department of Computer Science & Engineering
Faculty of Engineering
MEDI-CAPS UNIVERSITY, INDORE- 453331**

May 2022

Report Approval

The project work “**Spare Parts in Full Stack**” is hereby approved as a creditable study of an engineering/computer application subject carried out and presented in a manner satisfactory to warrant its acceptance as prerequisite for the Degree for which it has been submitted.

It is to be understood that by this approval the undersigned do not endorse or approve any statement made, opinion expressed, or conclusion drawn therein; but approve the “Project Report ” only for the purpose for which it has been submitted.

Internal Examiner

Name:

Designation

Affiliation

External Examiner

Name:

Designation

Affiliation

Declaration

I/We hereby declare that the project entitled “**Spare Parts in Full Stack**” submitted in partial fulfillment for the award of the degree of Bachelor of Technology in ‘Computer Science Department’ completed under the supervision of **Mr. Sachin Solanki, Assistant Professor and Department of the Computer Science** , Faculty of Engineering, Medi-Caps University Indore is an authentic work.

Further, I/we declare that the content of this Project work, in full or in parts, have neither been taken from any other source nor have been submitted to any other Institute or University for the award of any degree or diploma.

Signature and name of the student(s) with date

Certificate

I/We, **Mr. Sachin Solanki** certify that the project entitled “**Spare Parts in Full Stack**” submitted in partial fulfillment for the award of the degree of Bachelor of Technology by **Yougal Choudhary** is the record carried out by him/them under my/our guidance and that the work has not formed the basis of award of any other degree elsewhere.

Mr. Sachin Solanki

Computer Science Department

Medi-Caps University, Indore

Mr. Mohana KVSS Prasad Jakka

Virtusa Pvt. Ltd.

Dr. Pramod S. Nair

Head of the Department

Computer Science & Engineering

Medi-Caps University, Indore

Offer Letter of the Project work-II/Internship

12/8/21, 11:11 PM

eOffer Content

virtusa

December 2, 2021

December 17, 2021/Intern/IN CHE DLF

**Mr. Yougal Choudhary
A \ 951 Housing Board Colony, PITHAMPUR
Dhar
Madhya Pradesh
India**

Dear Yougal,

On behalf of Virtusa Consulting Services Private Limited ("Virtusa"), I am pleased to confirm your **Internship** with us. You will be undergoing the internship at Virtusa for a period of **3 months** starting from **December 17, 2021** at our Chennai. As an Intern, you will be eligible to a consolidated stipend of **6,500.00 (Six Thousand Five Hundred) per month** during the term of your internship with Virtusa.

Please note that the internship does not create any employer - employee relationship between you and Virtusa. Virtusa may terminate your internship at any time upon notice in its sole discretion.

Sincerely,



Sundararajan Narayanan

Chief People Officer & Global Head Of Human Resources

Virtusa Consulting Services Pvt Ltd, India

Offer electronically accepted by: Choudhary, Yougal
Offer electronically accepted on: Dec 8, 2021 11:01 PM
Offer electronically accepted from: 27.97.67.121

Completion certificate/Letter

Sensitivity: General



Virtusa Consulting Services Private Limited
Registered Office: No.34 IT Highway, Navalur, Chennai, T.N., 600 130 IN, T: +91 443387 3000 | F: +91 44 2743 5128

EXPERIENCE & SERVICE CERTIFICATE

April 07, 2022

Dear Yougal Choudhary,

Please find your Internship Record and Relieving date with Virtusa Consulting Services Private Limited as per the details below.

Name	Yougal Choudhary
Employee Code	8115641
Designation on Relieving	Intern-Delivery
Date of Joining	17-Dec-2021
Date of Relieving	31-Mar-2022

We wish you all the best for your future endeavors.

For Virtusa Consulting Services Private Limited,

Rahul Sahay
Senior Vice President (Level II)-HR



Acknowledgements

I would like to express my deepest gratitude to the Honorable Chancellor, **Shri R C Mittal**, who has provided me with every facility to successfully carry out this project, and my profound indebtedness to **Prof. Dr. Dilip K Patnaik**, Vice Chancellor, Medi-Caps University, whose unfailing support and enthusiasm has always boosted up my morale. I also thank **Prof. Dr. D K Panda**, Pro Vice Chancellor, **Dr. Suresh Jain**, Dean Faculty of Engineering, Medi-Caps University, for giving me a chance to work on this project. I would also like to thank my Head of the Department **Dr. Pramod S. Nair** for his continuous encouragement for betterment of the project.

I express my heartfelt gratitude to my **External Guide, Mr. Mohana KVSS Prasad Jakka, Virtusa Pvt. Ltd.** as well as to my Internal Guide, **Mr. Sachin Solanki**, Assistant Professor, Department of Computer Science MU, without whose continuous help and support, this project would ever have reached the completion.

It is their help and support, due to which we became able to complete the design and technical report. Without their support this report would not have been possible.

Yougal Choudhary

B.Tech. IV Year

Department of Computer Science & Engineering

Faculty of Engineering

Medi-Caps University, Indore

Abstract

The main goal of our project is to make it easier for the people who want the parts easily and to help the new business owners who don't have many contacts. The system targets two types of users: the people who want to sell the parts and the people who need parts. The user can also view the name, parts name, company registration no., contact no. and company names. The main objective of developing the website is to make it easier for the people who are new in the business and who want an immediate response for their requirements. So they don't have to suffer to look here and there.

The person who wants to sell or buy needs to register in our application providing required information which are name, email id, gender, phone number. Customers who need parts can also fill the form to request the parts. Customer can directly call the Seller by taking his/her contact number from the application.

The goal of the long term research of the authors is to reduce the costs related to keeping spare parts in the stock. As a result of the pilot survey in organizations the advantages and disadvantages of the current spare parts inventory management are summarized, as the recommendations for optimization.

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Chapter-1

1.1 INTRODUCTION

Spare parts management needs special treatment, somewhat different from inventory management of regular items since keeping a stock of these is different to serve as a replacement to the worn out parts in the machinery. The statistics of failure is of much importance in the management of spare parts. Moreover, spare parts are not always available during the entire lifetime of the equipment. Spare parts are special independent demand items deriving their demand from the failure characteristics of the component and with a specialized supply situation.

1.2 OBJECTIVES

The main objective of the Project on Spare Parts is to manage the details of Name, Company Name, Mobile number, Part name, Registration No, Quantity, Status. It manages all the information about spare parts and requests came from Client. The purpose of the project is to build an application program to reduce the manual work for managing the details of Parts name, Quantity and Company name.

1.3 FEASIBILITY STUDY:

After doing the project Spare Parts, study and analyze all the existing or required functionalities of the system, the next task is to do the feasibility study for the project. All projects are feasible - given unlimited resources and infinite time.

Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements.

A. Economic Feasibility

This is a very important aspect to be considered while developing a project. We decided on the technology based on the minimum possible cost factor. All hardware and software cost has to be borne by the organization. Overall we have estimated that the benefits the organization is going to receive from the proposed system will surely overcome the initial costs and the later on running cost for the system.

B. Technical Feasibility

This included the study of function, performance and constraints that may affect the ability to achieve an acceptable system. For this feasibility study, we studied complete functionality to be provided in the system, as described in the System. Requirement Specification (SRS), and checked if everything was possible using different types of frontend and backend platforms.

C. Operational Feasibility

No doubt the proposed system is fully GUI based and is very user friendly and all inputs to be taken are all self-explanatory even to a layman. Besides, proper training has been conducted to let the users know the essence of the system so that they feel comfortable with the new system. As far our study is concerned the clients are comfortable. and happy as the system has cut down their loads and doing.

1.4 ORGANIZATION:

Medi-Caps have been a brand name in the arena of technical education. Since its inception in July 2000, Medi-Caps have consistently aimed at creating an ideal ambiance for budding technocrats and managers; and helping them to grow like true professionals. With its highly qualified faculty there seems an optimal blend of academic brilliance and industry exposure, supplemented by highly specialized visiting faculty and industry experts, senior professionals from various segments of different industries and business houses. It was time now to spread wings and move out for more exposure and widening of the periphery.

Hence the foundation of Medi-Caps University has been laid down. With a strong foundation of the Group for 15 years, Medi-Caps University wishes to maintain the same objective of imparting quality education and producing sound professionals for the benefit of the society at large.

Chapter 2

SYSTEM REQUIREMENT ANALYSIS

2.1 INFORMATION GATHERING

Functional Requirements

- **Access Website:** Software operators should be capable of accessing web-application through either an application browser or similar service on the PC. There should not be any limitation to access web-application.
- **Software operator Registration:** Given that software operator has accessed web-application, then the software operator should be able to register through the web-application. The software operator must provide first name, gender, contact no, email id and password.
- **View Request:** The Customers should be able to view received requests and then respond to them and can search requests by selecting two options: First company name and their Mobile number.

Non-Functional Requirements

- **Maintainability:** The Spare Parts must have a high level of Maintainability.
- **Serviceability:** If an issue arises in the Spare Parts, then the project must be programmed in such a way that the developer can service it again.
- **Environmental:** The Spare Parts must be working in the latest operating system environments like windows 7, windows 8, and windows 10 and on Linux.

2.2 PLATFORM SPECIFICATIONS

2.2.1 Hardware Requirements:

- Processor - Minimum Intel Core i3
- RAM - 4 GB
- Hard Disk - 500 GB

2.2.2 Software Requirements:

- Operating System: All Applicable.
- Technology: HTML, CSS, JavaScript, Node JS, Express JS, MongoDB.
- Tool - Visual Studio Code.

Software Implementation Technology:

1. **HTML:** HTML is an acronym which stands for Hyper Text Markup Language which is used for creating web pages and web applications. Let's see what is meant by Hypertext Markup Language, and Web page.
 - **Hypertext:** Hypertext simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. Hypertext is a way to link two or more web pages (HTML documents) with each other.
 - **Markup language:** A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.
 - Hence, **HTML** is a markup language which is used for creating attractive web pages with the help of styling, and which looks in a nice format on a web browser. An HTML document is made of many HTML tags and each HTML tag contains different content.

2. **CSS:** CSS stands for **Cascading Style Sheets**. It is a style sheet language which is used to describe the look and formatting of a document written in markup language. It provides an additional feature to HTML. It is generally used with HTML to change the style of web pages and user interfaces. It can also be used with any kind of XML documents including plain XML, SVG and XUL.

CSS is used along with HTML and JavaScript in most websites to create user interfaces for web applications and user interfaces for many mobile applications.

3. **JavaScript:** JavaScript (js) is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document. It was introduced in the year 1995 for adding programs to the webpages in the Netscape Navigator browser. Since then, it has been adopted by all other graphical web browsers. With JavaScript, users can build modern web applications to interact directly without reloading the page every time. The traditional website uses js to provide several forms of interactivity and simplicity.

4. **Node JS:** Node.js is a cross-platform runtime environment and library for running JavaScript applications outside the browser. It is used for creating server-side and networking web applications. It is open source and free to use. Many of the basic modules of Node.js are written in JavaScript. Node.js is mostly used to run real-time server applications.

5. **Express JS:** Express is a fast, assertive, essential and moderate web framework of Node.js. You can assume express as a layer built on the top of the Node.js that helps manage a server and routes. It provides a robust set of features to develop web and mobile applications.

6. **MongoDB:** MongoDB is an open-source document database that provides high performance, high availability, and automatic scaling. In simple words, you can say that - Mongo DB is a document-oriented database. It is an open source product, developed and supported by a company named 10gen.

- 7. Visual Studio Code:** Visual Studio Code is a code editor in layman's terms. Visual Studio Code is “a free-editor that helps the programmer write code, helps in debugging and corrects the code using the intel-sense method”. In normal terms, it facilitates users to write the code in an easy manner.

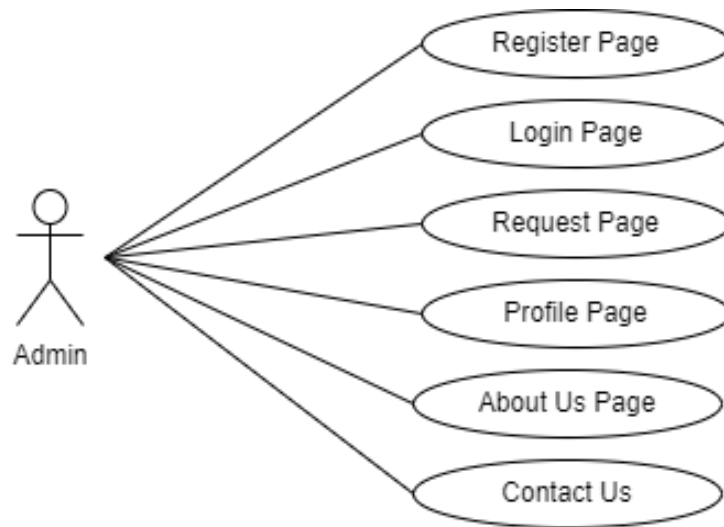
Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, Typescript and Node.

Chapter 3

METHODOLOGY

The person who wants to sell or buy needs to register in our application providing required information which are name, email ID, gender, phone number. Customers who need parts can also fill the form to request the parts. Customer can directly call the Seller by taking his/her contact number from the application.

- **USE CASE DIAGRAM:** Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors. The use cases and actors in use-case diagrams describe what the system does and how the actors use it, but not how the system operates internally.



Use Case Diagram For Blood Donor

Fig 1- USE CASE DIAGRAM

- **CLASS DIAGRAM:** A class diagram is an illustration of the relationships and source code dependencies among classes in the Unified Modeling Language (UML). In this context, a class defines the methods and variables in an object, which is a specific entity in a program or the unit of code representing that entity.

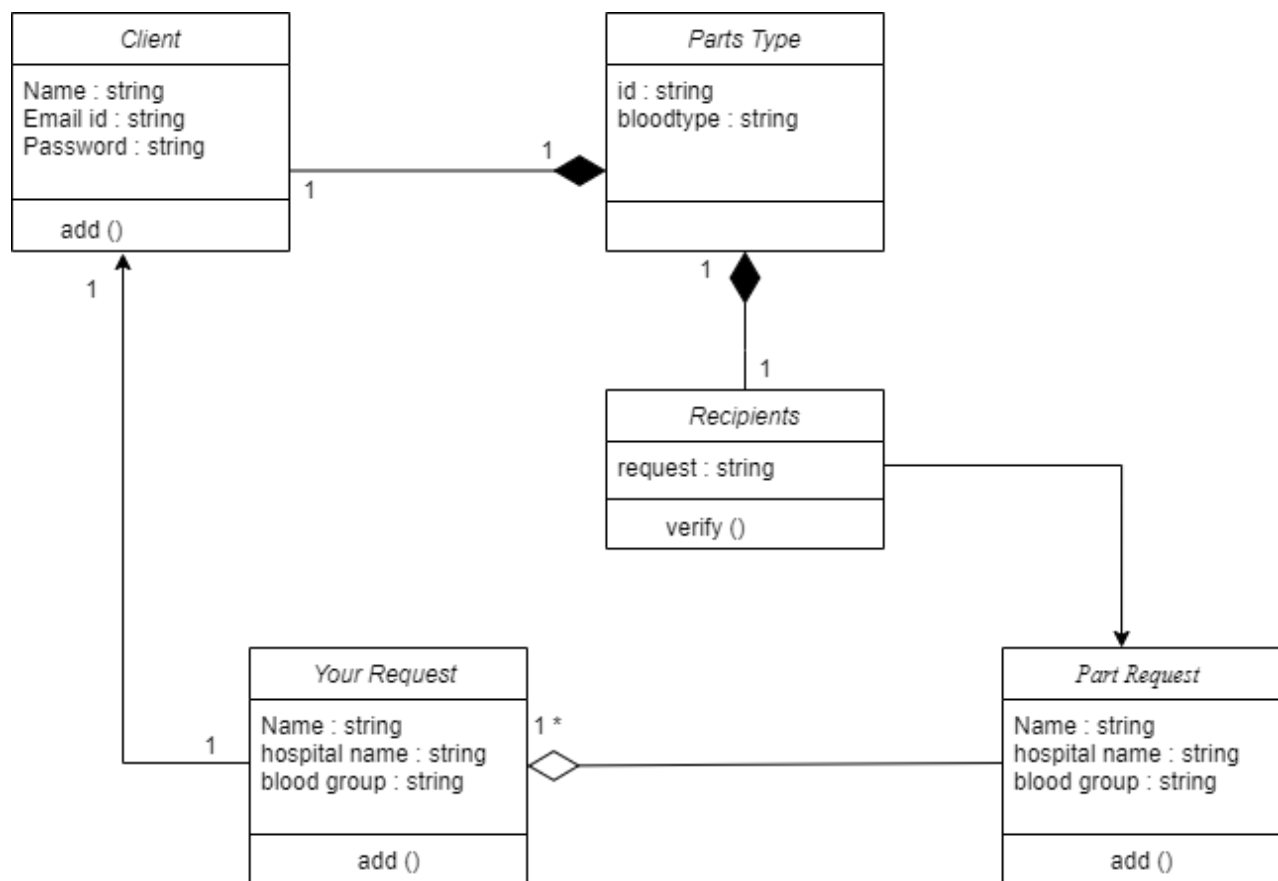


Fig. 2- CLASS DIAGRAM

- **SEQUENCE DIAGRAM:** A sequence diagram is a type of interaction diagram because it describes how—and in what order—a group of objects works together. These diagrams are used by software developers and business professionals to understand requirements for a new system or to document an existing process.

Here, Sequence diagram for Registration users:

Registration Sequence :

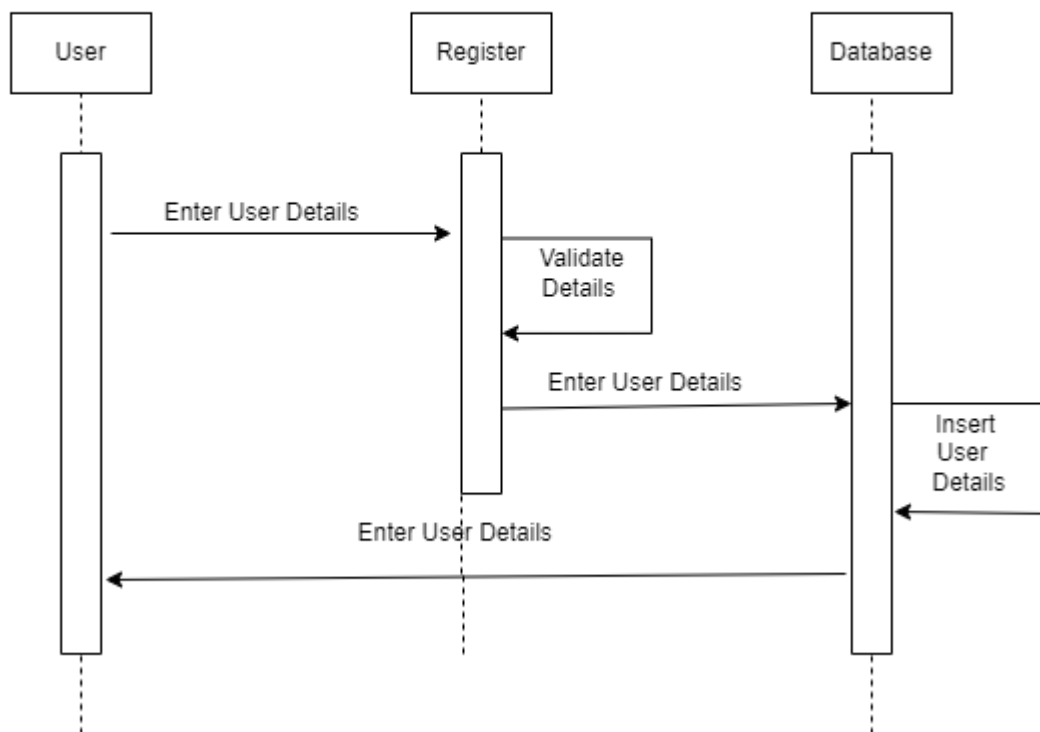


Fig. 3 - Sequence Diagram for Registration

Here, Sequence diagram for the request parts:

Request Donors :

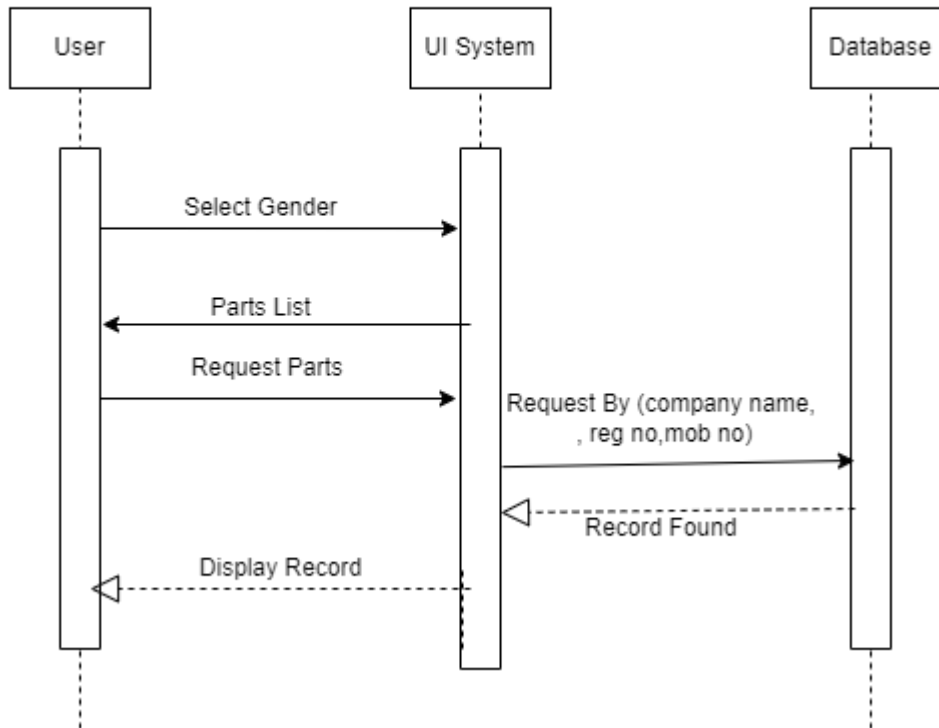


Fig. 4 - Sequence Diagram for Request

- **Activity Diagram:** An activity diagram visually presents a series of actions or flow of control in a system similar to a flowchart or a data flow diagram. Activity diagrams are often used in business process modeling. They can also describe the steps in a use case diagram.

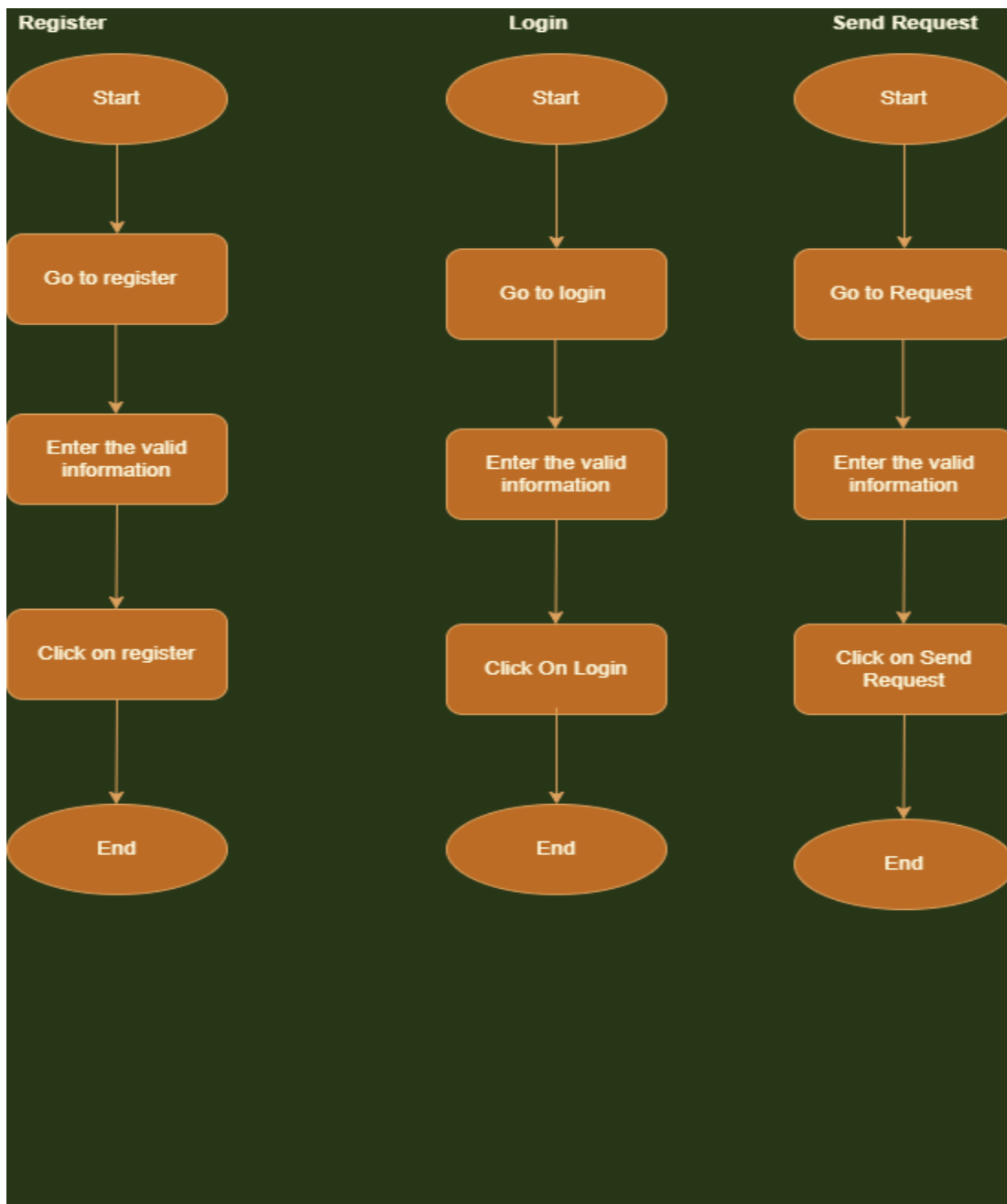


Fig. 5 - Activity Diagram

- **E-R DIAGRAM:** ER-Diagram is a pictorial representation of data which describes how the data is communicated and related to one another. Any object, like entities, attributes of an entity, sets of relationship and other attributes of relationship are characterized with the help of the ER diagram.

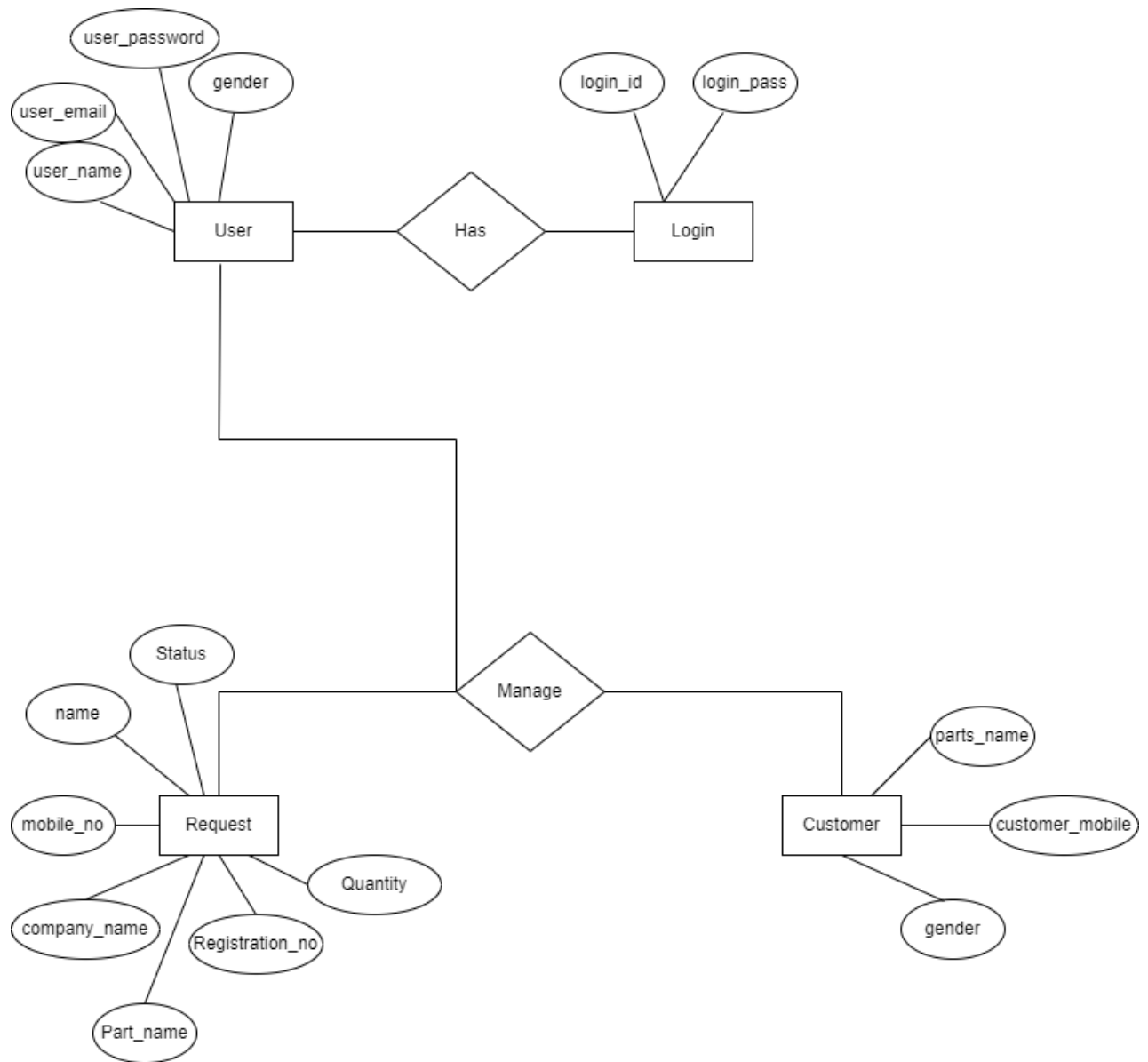


Fig. 6 - E-R Diagram

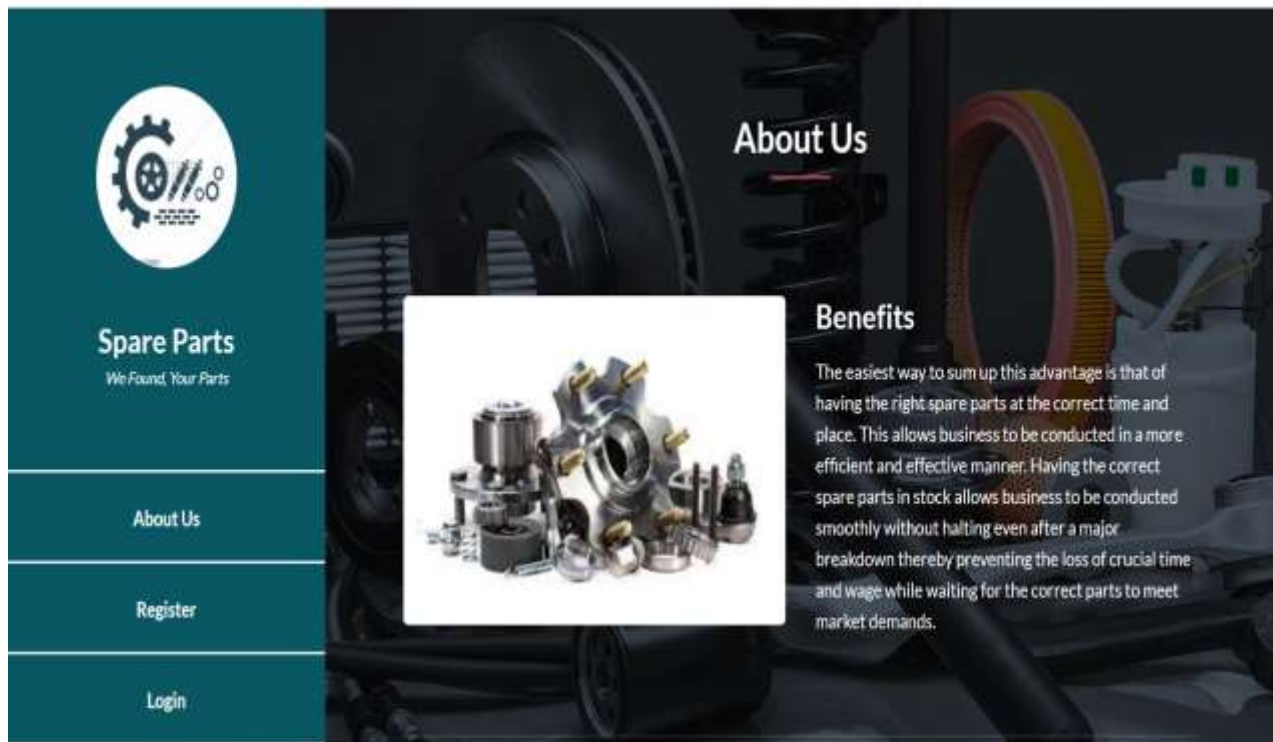
Chapter 4

RESULTS

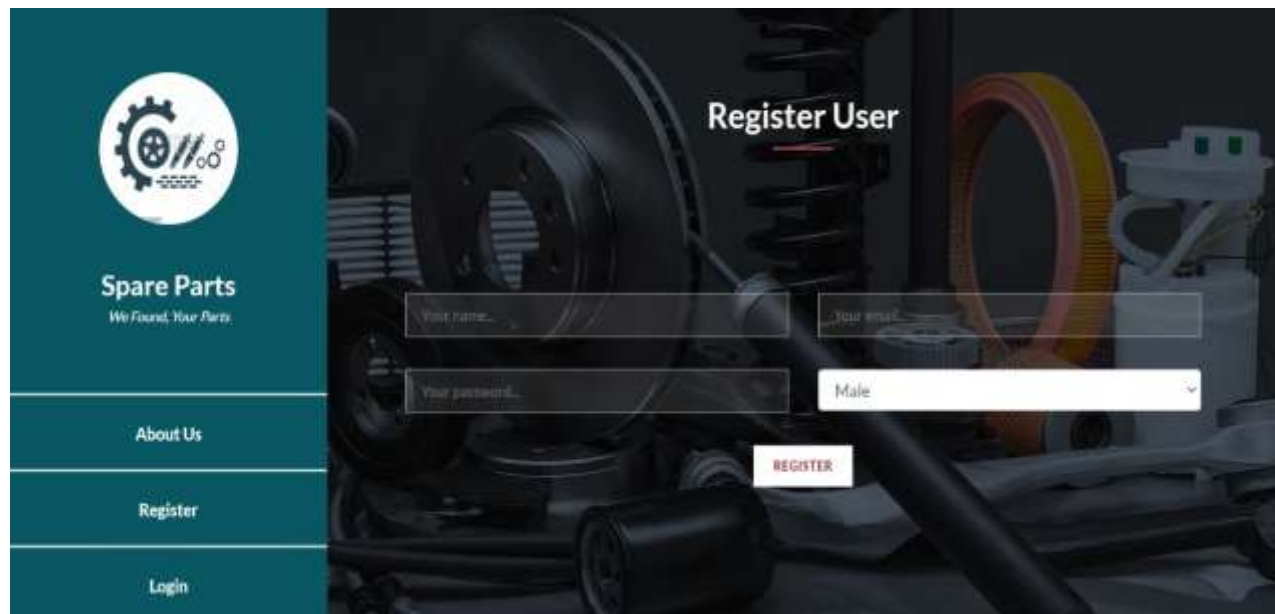
While after doing this dummy project first I downloaded a template and then edited by html and css by doing the frontend part first. Then came the backend part by doing coding and after that I had connected to the database in mongo db.

Here, the Screenshots of the Project:

- **Home Page:**

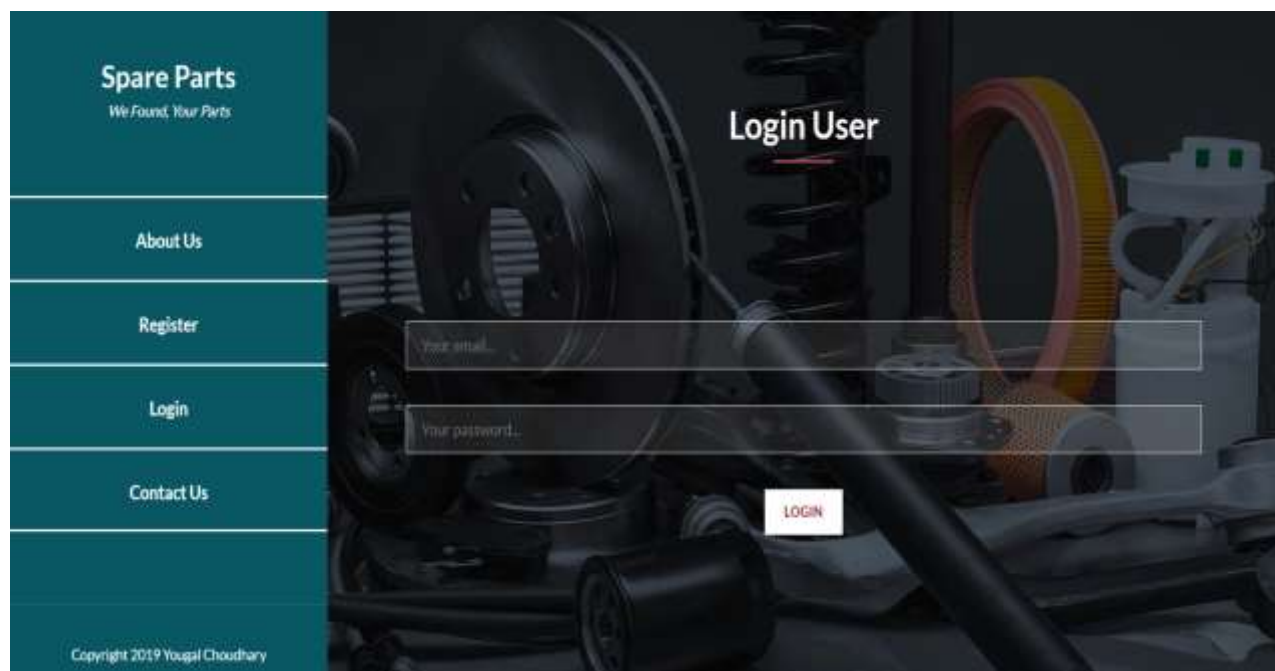


- **Registration Page:**



The screenshot shows the 'Register User' page of a website. On the left, a teal sidebar contains the 'Spare Parts' logo with the tagline 'We Found, Your Parts', and three menu items: 'About Us', 'Register', and 'Login'. The main content area has a dark background with an image of car parts. It features a registration form with the title 'Register User', input fields for 'Your name...', 'Your email...', and 'Your password...', a gender dropdown menu currently set to 'Male', and a 'REGISTER' button.

- **Login Page**



The screenshot shows the 'Login User' page of the same website. The teal sidebar on the left is identical to the registration page but includes an additional 'Contact Us' menu item at the bottom. The main content area features a login form with the title 'Login User', input fields for 'Your email...' and 'Your password...', and a 'LOGIN' button. At the bottom left of the sidebar, the text 'Copyright 2019 Yougal Choudhary' is visible.

- **Request Page:**

The screenshot shows a web application interface for sending requests. On the left is a teal sidebar with navigation links: Home, Request (active), Profile, and Logout. The main content area has a dark background with mechanical parts. At the top right, it says 'Send Request'. Below this are input fields for 'Person name', 'Phone', 'Company name', 'Company Registration', and 'Quantity'. A dropdown menu is open, showing a list of items: Crank pin (selected), Main journals, Crank web, Counterweights, Thrust washers, Oil passage, Flywheel mounting flange, and oil seals. A red 'SEND REQUEST' button is visible. Below the form, a table titled 'Your Request' displays the submitted data.

Name	company	Contact	Group	Registration No	Quantity
yougal	lux	7878787878	Counterweights	456789gh567	200

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- **Database Connected:**

```
> db.user.find().pretty()
{
  "_id" : ObjectId("623e10e65f22a1499adfe818"),
  "name" : "aman",
  "email" : "aman@gmail.com",
  "password" : "121212",
  "gender" : "Male",
  "pic" : "601.jpeg"
}
{
  "_id" : ObjectId("623e11b45f22a1499adfe819"),
  "name" : "yougal",
  "email" : "yougal@gmail.com",
  "password" : "121212",
  "gender" : "Male",
  "pic" : "590.jpeg"
}
{
  "_id" : ObjectId("624edd1e1f6edffb65764776"),
  "name" : "yc",
  "email" : "yc@gmail.com",
  "password" : "121212",
  "gender" : "Male",
  "group" : "Male"
}
```

Chapter 5

SUMMARY AND CONCLUSIONS:

Summary:

This is a Web Based Application of Spare parts in which users sell parts and also request the parts. First you can register yourself with the help of your email id and contact no then you can sign in and request for your required parts or sell. In the same way the other users can see your request and contact you within minutes with the help of contact number. In this Application database is also connected and the data is shown in mongo dB where all the data had stored in this application.

Conclusions:

Parts management is an important management tool which will be very useful in getting the right quality & right quantity of supplies at the right time, improving the efficiency of the organization & also making the working atmosphere healthy for any type of organization, whether it is Private, Government, organization, big organization and Household.

Even a common man must know the basics of material management so that he can get the best of the available resources and make it a habit to adopt the principles of material management in all our daily activities

5.1 Future Scope:

- In future email verification will have to be added for registration of users.
- Other organs also we can add in this for future.
- Payment option also we give in future.

Chapter 6

REFERENCES

1. NodeJS documentation:-

<https://nodejs.org/dist/latest-v14.x/docs/api/>

2. ExpressJS documentation:-

<https://expressjs.com/en/starter/installing.html>

3. MongoDB:-

<https://docs.mongodb.com/manual/tutorial/getting-started/>

4. Javatpoint:-

<https://www.javatpoint.com/html-tutorial>

5. Stackoverflow

6. YouTube

7. Wikipedia