VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi-590018



A Database Management System Mini Project Report on "NAVY MANAGEMENT SYSTEM"

Submitted in Partial fulfillment of the Requirements for the V Semester of the Degree of

Bachelor of Engineering in

Computer Science & Engineering

By

HIMANSU KUMAR YADAV (1CR20CS080)

INRAJ MORANG (1CR20CS083)

Under the Guidance of,

Prof. Kartheek G.C.R, Prof. Anjali Gupta, Assist professor, Dept. of CSE



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING CMR INSTITUTE OF TECHNOLOGY

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CERTIFICATE

This is to certify that the Database Management System Project work entitled "NAVY MANAGEMENT SYSTEM" has been carried by HIMANSU out **KUMAR** YADAV,(1CR20CS080), INRAJ MORANG,(1CR20CS083) bonafide students of CMR Institute of Technology, Bengaluru in partial fulfillment for the award of the Degree of Bachelor of Engineering in Computer Science and Engineering of the Visvesvaraya Technological University, Belagavi during the year 2022-2023. It is certified that all corrections/suggestions indicated for the Internal Assessment have been incorporated in the report deposited in the departmental library. This Database Management System Project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said Degree.

Signature of Guide
(Prof. Kartheek G.C.R)
Assistant professor
Dept. of CSE, CMRIT

Signature of HOD

(Dr. Shreekanth M Prabhu)

Professor & HoD

Dept. of CSE, CMRIT

External Viva

Name of the Examiners Signature with date

1.

2.

DECLARATION

We, the students of V semester of Computer Science and Engineering, CMR Institute of Technology, Bangalore declare that the project work entitled "NAVY MANAGEMENT SYSTEM" has been successfully completed under the guidance of Prof. KARTHEEK G.C.R, Prof. ANJALI GUPTA, Asst. professor, Dept. of Computer Science and Engineering, CMR Institute of technology, Bengaluru. This project work is submitted in partial fulfillment of the requirements for the award of the Degree of Bachelor of Engineering in Computer Science and Engineering during the academic year 2022-2023. The matter embodied in the project report has not been submitted previously by anybody for the award of any degree or diploma to any

university.

Place: Bangalore

Date: 19/01/2023

Team members:

HIMANSU KUMAR
YADAV(1CR20CS080)

INRAJ MORANG(1CR20CS083)

ABSTRACT

This project focuses more on how to maintain the details of navy during operation, forming troops and while dealing with dispatch of equipment's to the sea warrior.

Throughout this project we shall focus on the type of service and rank that a warrior belongs and the list of troops which the warriors have formed, and they participated in operation and the mainly the equipment's that are handled by these warriors, which were used during the operation and the status of these equipment's.

ACKNOWLEDGEMENT

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I would also like to thank all the faculty members of Department of Computer Science and Engineering who directly or indirectly encouraged me.

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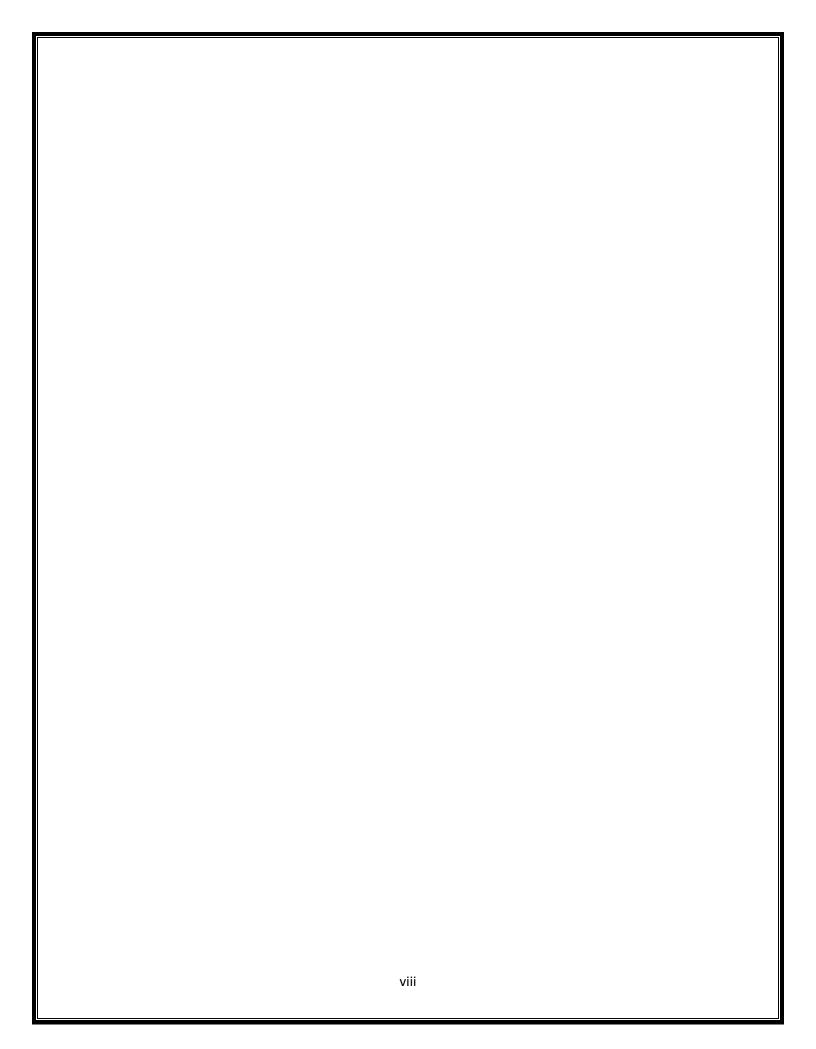
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INTRODUCTION

A database is simply an organized collection of related data, typically stored on a disk, and accessible by possibly many concurrent users Databases are generally separated into application areas. For example, one database may contain Human Resources(employee and payrolls), another may contain sales data, another may contain accounting data and so on Databases are managed by a DBMS.

1.1 Introduction to DBMS

A Database Management System (DBMS) is a set of programs that manages any number of databases. DBMS stands for Database Management System We can break u like this DBMS=Database +Management System. The database is a collection of data and the Management System is a set of programs to store and retrieve those data. Based on this we can define DBMS like this: DBMS is a collection of interrelated data and a set of programs to store and access those data in an easy and effective manner. Database systems are basically developed for large amounts of data. When dealing with a huge amount of data, there are two things that require optimization Storage of data and retrieval of data.

1.2 Applications of DBMS

Applications, where we use Database Management Systems, are

1. Telecom: There is a database to keep track of the information regarding calls made, network usage customer details, etc. Without database systems, it is hard to maintain that huge amount of data that keeps updating every millisecond.



2. Industry: Where it a manufacturing unit, warehouse, or distribution center, each one needs a database to keep the records of ins and outs, for example, distribution center should keep a track of the units of the product that supplied into the center as well as the products that got delivered out from the distribution center on each day, this is where DBMS comes into the picture

3. Education sector: Database systems are frequently used in schools and colleges to store and retrieve the data regarding student details, staff details, course details, exam details, attendance details, fees details, etc. There is a lot amount of interrelated data that needs to be stored and retrieved in an efficient manner.

4. Online shopping: We are aware of online shopping websites such as Amazon, Flipkart, etc. These sites store the product information, your addresses and preferences, credit details and provide you the relevant list of products based on your query. All this involves a Database management system.

1.3 Introduction to SQL

Structure Query Language (SQL) is a programming language used for storing and managing data in RDBMS. SQL was the first commercial language introduced for E.F Codd's Relational model. Today almost all RDBMS(MySQL, Oracle, Informix, Sybase, MS Access) use SQL as the standard database language. SQL is used to perform all types of data operations in RDBMS. SQL Command SQL defines the following data languages to manipulate data of RDBMS.

DDL: Data Definition Language All DDL commands are auto-committed. That means it saves all the changes permanently in the database.

Command Description

Create to create a new table or database

Alter for alteration

truncate delete data from table

drop to drop a table



rename to rename a table

DML: Data Manipulation Language DML commands are not auto-committed. It means changes are so permanent to database, they can be rolled back.

Command Description

insert to insert a new row

update to update an existing row

delete to delete a row

merge merging two rows or table

TCL: Transaction Control Language

These commands are to keep a check on other commands and their effect on the database. These commands can annul changes made by other commands by rolling back to the

original state. It can also make changes permanent.

Command Description

commit to permanently save rollback to undo change

savepoint to save temporarily

DCL: Data Control Language Data control language provides a command to grant and take back authority.

Command Description grant Revoke

DQL: Data Query Language

Command Description

select retrieve records from one or more table

1.4 Description of Project

Maintaining details of navy is difficult part especially country like India which has the world's one of the largest navies. this project will help us to maintain and extract the huge details according to requirement in order for proper functioning.



1.5 Scope of the project

- Helps to take steps in order to increase quality of service.
- Decreases the works of Data maintaining team.

1.6 Objectives

- Tomaintain details of service, troops, equipment and operation.
- Touse equipment's efficiently in operation.
- To provide a centralised, digital system for managing navy service.\



SYSTEM REQUIREMENTS

2.1 Hardware Requirements

Hardware Requirements for the project:-

Processor: i5 Core Processor

Clock speed: 1.19 GHz

RAM: 4 GB 3.2

2.2 Software Requirements

Software Requirements for the project:-

Operating System: 64-bit Operating System, Windows 10 or Ubuntu 22.04 Database:

MySQL

Web Server: XAMPP IDE:

Visual Studio

Scripting Language: PHP, JavaScript

Front End: HTML, CSS, Bootstrap



DESIGN

3.1 Schema Diagram

The database schema of a database system is its structure described in a formal language supported by the database management system (DBMS). The term "schema" refers to the organization of data as a blueprint of how the database is constructed (divided into database tables in the case of relational databases).

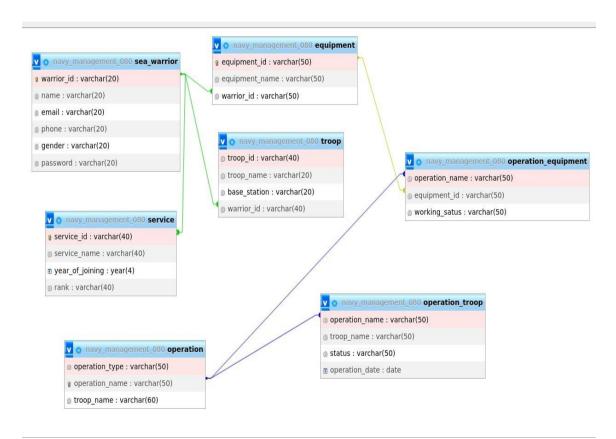


FIG 1.1 SCHEMA DIAGRAM



3.2 ER diagram

An entity-relationship model (ER model) describes inter-related things of interest in a specific domain of knowledge. An ER model is composed of entity types (which classify the things of interest) and specifies relationships that can exist between instances of those entity types. Consequently, the ER model becomes an abstract data model that defines data or information structure that can be implemented in a database.

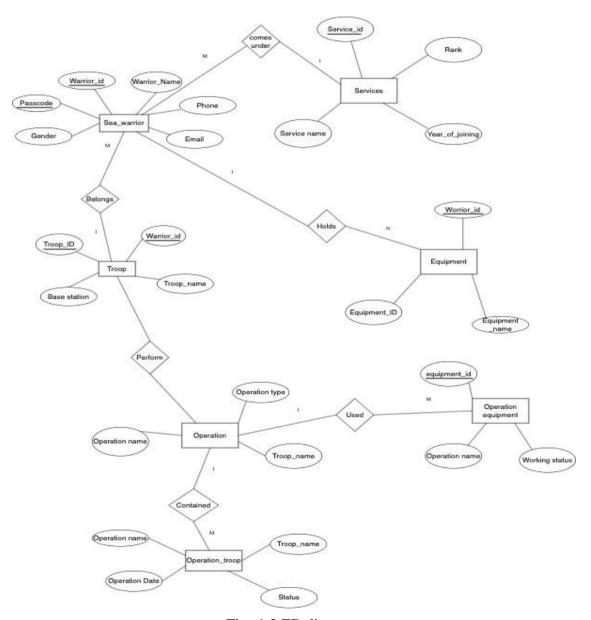


Fig:-1.2 ER diagram



3.1 Database Design

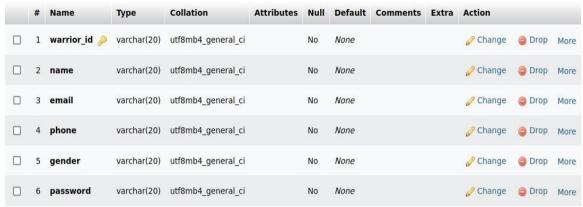


Table 1.1 Sea warrior table

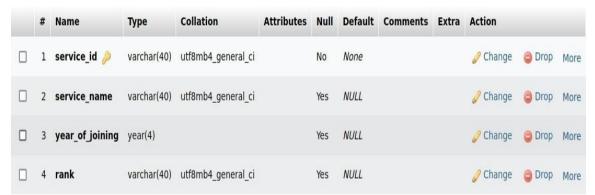


Table 1.2 service Table.

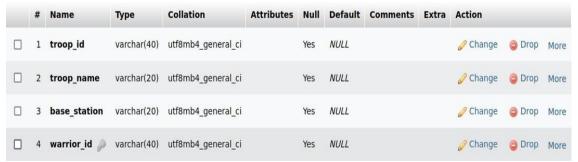


Table 1.3 troop Table



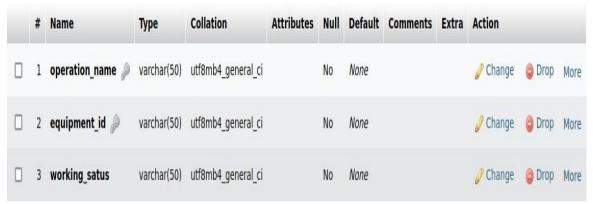


Table 1.4 operation table

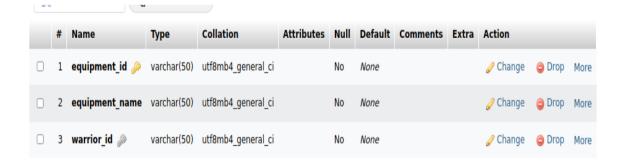


Table 1.5 Equipment table.

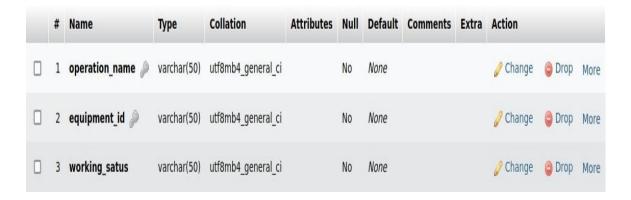


Table 1.6 operation equipment table



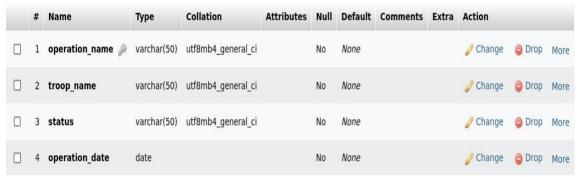


Table 1.7 operational troop table



IMPLEMENTATION

4.1 Introduction

This project is designed and implemented using MySQL database along with PHP for back-end implementation and HTML and CSS for front-end design. IDE used is Visual Studio Code.

MySQL

The back-end of the web application is basically the brains behind the front-end. It comprises of three components: server, application and database. It is a link between the server and the user. Most of the coding for the web application can be found in the back- end and the quality of this code determines how the website functions. In this project MySQL is used as a back-end technology. MySQL is a multi-threaded, multi-user SQL Database Management System. The basic program run as server providing multi-user access to a number of databases. MySQL is currently the world's most popular and widely used open-source database technology and data storage system. MySQL offers great reliability and ease of use. MySQL runs on virtually all platforms, including Linux, UNIX, and Windows.

Hypertext Preprocessor (PHP)

PHP (recursive acronym for PHP: Hypertext Preprocessor) is a widely-used open-source general purpose scripting language that is primarily designed for web development and can be embedded into HTML. PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages. PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page. PHP commands can be embedded directly into an HTML source document external file to process data or it can be used in combination with various web template systems, web content management systems and web frameworks. It has also evolved to include a



command line interface capability and can be used in standalone graphical applications. A good benefit of using PHP is that it can interact with many different database languages including MySQL. Both PHP and MySQL are compatible with an Apache server which is also free to license. PHP can also run-on Windows, Linux and UNIX servers. Due to all these languages being free it is cheap and easy to setup and create a website using PHP. PHP also has very good online documentation with a good framework of, functions in place.

Hypertext Markup Language (HTML)

HTML is the web's core language for creating documents and applications for everyone to use, anywhere. It is standardizing system for tagging text files to achieve font, color, graphic and 15 hyperlink effects on World Wide Web pages. HTML elements form the building blocks of all websites. The markup tells the web browsers how to display web pages. Web browsers can read HTML files and render them into visible or audible web pages. Browsers do not display the HTML tags and scripts, but use them to interpret the content of the page. HTML describes the structure of websites. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of corner stone technologies of the World Wide Web.

Cascading Style Sheets (CSS)

CSS is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a simple mechanism for adding style (e.g. fonts, colors, spacing etc.) to web documents. CSS defines how HTML elements are displayed. CSS is a cornerstone technology used by most websites to create visually engaging web pages, user interfaces for web application and user interfaces for many mobile applications. CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors and fonts. This separation can improve content accessibility, provide more



flexibility. This separation of formatting and content makes it possible to present the same markup page in different styles for different rendering methods.

XAMPP

XAMPP stands for Cross-Platform (X), Apache (A), MySQL (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing purposes. Everything need to set up a web server – server application (Apache), database (MySQL), and scripting language (PHP) – is included in a simple extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows.



CODE IMPLEMENTATION

DATABASE CONNECTION

```
<?php
error_reporting(0);
$servername ="localhost";
$username ="root";
$password ="";
$dbname="navy_management_080";
$conn = mysqli_connect($servername,$username,$password,
$dbnam
e);
if($conn
} else {
echo "connection failed".mysqli_connect_error();
} ?>
```



CREATE TABLE QUERIES

```
CREATE TABLE `sea_warrior` (
`warrior_id` varchar(20) NOT NULL,
'name' varchar(20) NOT NULL,
`email` varchar(20) NOT NULL,
`phone` varchar(20) NOT NULL,
`gender` varchar(20) NOT NULL,
`password` varchar(20) NOT NULL
CREATE TABLE `service` (
`service_id` varchar(40) NOT NULL,
`service_name` varchar(40) DEFAULT NULL,
`year_of_joining` year(4) DEFAULT NULL,
`rank` varchar(40) DEFAULT NULL
CREATE TABLE `troop` (
`troop_id` varchar(40) DEFAULT NULL,
`troop_name` varchar(20) DEFAULT NULL,
`base_station` varchar(20) DEFAULT NULL,
`warrior_id` varchar(40) DEFAULT NULL
)
CREATE TABLE 'equipment' (
`equipment_id` varchar(50) NOT NULL,
'equipment_name' varchar(50) NOT NULL,
`warrior id` varchar(50) NOT NULL
)
```



```
CREATE TABLE `operation` (
`operation_type` varchar(50) NOT NULL,
`operation_name` varchar(50) NOT NULL,
 `troop_name` varchar(60) NOT NULL
)
CREATE TABLE `operation_equipment` (
 `operation_name` varchar(50) NOT NULL,
 `equipment_id` varchar(50) NOT NULL,
 `working_satus` varchar(50) NOT NULL
)
CREATE TABLE `operation_troop` (
`operation_name` varchar(50) NOT NULL,
`troop_name` varchar(50) NOT NULL,
`status` varchar(50) NOT NULL,
 `operation_date` date NOT NULL
 )
 ALTER TABLE 'equipment'
 ADD PRIMARY KEY ('equipment_id'), ADD KEY 'warrior_id' ('warrior_id');
 ADD PRIMARY KEY ('operation_name'); ALTER TABLE 'operation_equipment'
 ADD KEY `operation_name` (`operation_name`)
 ADD KEY 'equipment_id' ('equipment_id');
 ALTER TABLE `operation_troop`
 ADD KEY `operation_name` (`operation_name`);
 ALTER TABLE `sea warrior`
 ADD PRIMARY KEY (`warrior_id`);
 ALTER TABLE `service`
```



```
ADD PRIMARY KEY (`service_id`);
 ALTER TABLE `troop`
 ADD KEY `warrior_id` (`warrior_id`);
 ALTER TABLE 'equipment'
 ADD CONSTRAINT `equipment_ibfk_1` FOREIGN KEY (`warrior_id`)
 REFERENCES `sea_warrior`
 (`warrior_id`);
 ALTER TABLE 'operation_equipment'
 ADD CONSTRAINT `operation_equipment_ibfk_1` FOREIGN KEY
 (`operation_name`)
 REFERENCES 'operation' ('operation_name'),
 ADD CONSTRAINT `operation_equipment_ibfk_2` FOREIGN KEY (`equipment_id`)
 REFERENCES
 `equipment` (`equipment_id`);
 ALTER TABLE
 `operation_troop`
ADD CONSTRAINT `operation_troop_ibfk_1` FOREIGN KEY (`operation_name`)
REFERENCES
 `operation` (`operation_name`); ALTER TABLE `service`
 ADD CONSTRAINT `service_ibfk_1` FOREIGN KEY (`service_id`) REFERENCES
```



```
`sea_warrr`
 (`warrior_i
 d`);
ALTER TABLE `troop`
ADD CONSTRAINT `troop_ibfk_1` FOREIGN KEY (`warrior_id`) REFERENCES
`sea_warrior
(`warrior_id
`);
COMMIT;
DISPLAY USING SELECT QUERIES
 <?php include 'connection.php'; ?>
<!DOCTYPE html>
 <html lang="en">
 <head>
 <!--<li>rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/
 css/bootstrap.min.css">-->
 <link rel="stylesheet" href="ddisplay.css">
        </head><body>
 <div class="col-lg-6 col-md-6 col-12">
 <div class="card">
 <div class="card-header text-center">
```



```
<h1>warrior</h1>
</div>
<div class="card-body">
<div class="table-responsive">
<thead>
warrior_id
name
email
phone
gender
password
</thead>
<?php
$selectQuery = "select * from sea_warrior";
$squery = mysqli_query($conn, $selectQuery);
while (($result = mysqli_fetch_assoc($squery)))
{?>
<?php echo $result['warrior_id']; ?>
<?php echo $result['name'] ?>
<?php echo $result['email']; ?>
<?php echo $result['phone']; ?>
<?php echo $result['gender']; ?>
<?php echo $result['password']; ?>
```



```
<?php
$n++;
}
?>
</div>
</div>
</div>
</body>
</html>
```

DISPLAY USING SELECT QUERIES

```
$selectQuery = "SELECT * FROM `service`"; $squery = mysqli_query($conn,
$selectQuery); if($_SERVER['REQUEST_METHOD']=='POST'){
$scode = $_POST['scode'];
$delq = "DELETE from service where service_id='$scode'"; $delquery =
mysqli_query($conn, $delq);
if($delq){
echo "Deleted successfully"; }
}
```



INTERPRETATION OF RESULT



FIG 2.1 WELCOME PAGE

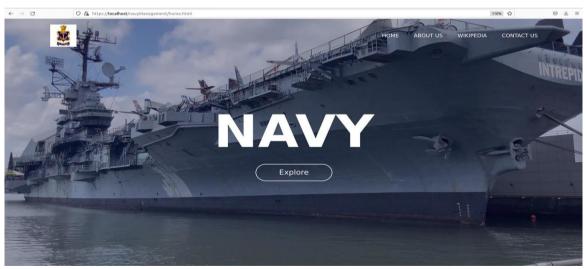


FIG 2.2 HOME PAGE



FIG 2.3 LIST OF FORM TO TAKE DISPLAY



FIG 2.4 FORM TO TAKE INPUT

EQUIPMENT



OPERATIONS PERFORMED.



FIG 2.5 USER REQUIREMENT DISPLAY PAGES

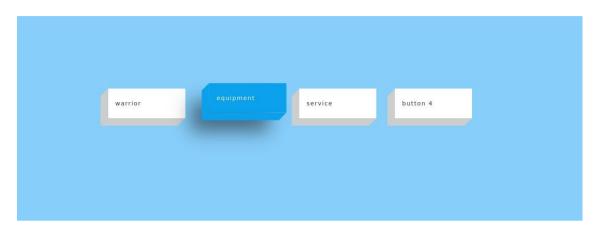


FIG 2.6 TABLES DISPLAY PAGE

equipment

equipment ID	equipment Name	warrior id	Action
3333	gun	4444	DELETE
4444	gun2	1658	DELETE
e0001	assult rifle	1111	DELETE

warrior_id	name	email	phone	gender	password
1111	vikram	vikram@gmail.com	1111111111	Male	465656
1658	gggg	gggg@gmail.com	7876987	Male	dfghv2345
2222	gagan	gagan@gmail.com	8888888888	Male	677667
3333	jacquiline	jacquiline@gmail.com	777777777	female	676767
4444	asdfgh	yg@gmail.com	23456745678	Female	dfghv23456
455	ghg	vyg@gmail.com	568	Male	dfgh3456
6766	vishal	vishal@gmail.com	7864353434	Male	44423456
7777	shikar	shikar@gmail.com	6757874758	Male	88467
9999	yash	yash@gmail.com	713453743	Male	8666566



CONCLUSION AND FUTURE SCOPE

Our conclusion to for the project is that it helps to reduce all the effort and time to the database user which would further also help in making quick decision on the requirement of equipment's, and help in making additional arrangement of requirement's and helps to give some more additional information of promotion based on year of joining and rank in service part of this database. Currently, our project only explains about how to STORE and perform some operation by taking data from data base. Our future goal is to develop some more different types of operation by seeing the further requirement.

In the future, the system could potentially expand to include additional features and functionality.

Some possibilities could include:

 Advanced reporting and analytics capabilities, such as parts demand, availability and cost tracking.



REFERENCES

TEXTBOOKS

- 1.1 Fundamentals of Database Systems, Ramez Elmasri and Shamkant B. Navathe, 7th Edition, 2017, Pearson
- 1.2 Practical PHP 7, MySQL 8, and MariaDB WebsiteDatabases_A Simplified Approach to Developing Database-DrivenWebsites

LINKS

- 1. www.w3schools.com
- 2. www.stackoverflow.com
- 3. https://youtube.com/@EasyTutorialsVideo
- 4. URL:www.wikipedia.org
- 5. https://youtube.com/@CyberWarriors