AIMS AND OBJECTIVES

Project Objectives:
The main aim of the project is to create inventory management system. This system should be connected to their respective databases and any changes made in the databases should be reflected in the system immediately.

The main Objectives of the present research work are:
1. Learn fundamentals of web development with HTML, CSS and JavaScript.
2. Creation of interactive Data Tables which can be modified using Database stored using database management system (DBMS).
3. Creating dynamic dropdown lists where the data in the dropdown lists will be populated from the database and based on the selection of the dropdown lists, display the database tables' data in table format.
INTRODUCTION TO IMD AVIATAION INSTRUMENT MANAGEMENT SYSTEM

IMD Aviation Instrument Management System:

Inventory management system is a system for tracking inventory levels, orders, sales and deliveries. It can also be used in the manufacturing industry to create a work order, bill of materials and other production-related documents Companies use inventory management system to avoid product overstock and outages. It is a tool for organizing inventory data that before was generally stored in hard-copy form or in spreadsheets. Components of Inventory Management System:

Client Side Components:

• JavaScript:

This is a client-side scripting language used by the browser engine to interpret the web page JavaScript along with the use of HTML and CSS helps make a web page more responsive that is the web environment in which JavaScript executes a program is dynamic It provides a medium of interaction between the server and the client through the use of events If client types some text in a text-box or clicks on a button on a web-page, an event is triggered and if there is code provided for each event, it is executed

• CSS

CSS stands for Cascading Style Sheets which is used to define how HTML elements will be displayed. It is a style language used to define the way of presentation of the layout in a web page. Due to separation of the presentation and information, the same presentation styles can be reused in another webpage/s. The CSS can be either used in HTML page itself (Embedded), or a link reference can be given in HTML page (External) or defined for particular clement or attribute while coding in HTML itself (Internal)

• JQuery AJAX

The jQuery is a library of JavaScript used to simplify the use of methods with an easy

to use API which works across various browsers whereas AJAX is the scripting languagewhich makes the communication between browser and server without refreshing the whole web-page. jQuery provides many AJAX methods to work with.
For the "AWS". the requirement was to display 3 selection dropdown lists in which the data will be accessed from directly the database and based on selection, the database data is displayed in table format in order to fulfil this requirement, the use of jQuery AJAX methods was used in the PHP files. (Internal)

.HTML

HTML is the mark-up language used to display symbols and data on the WWW browser. The HTML file consists of various tags used to define the data. HTML provides a hase for Web applications. The markup language along with combination of various mark-up and scripting languages make the UI more userfriendly and accessible Currently the HTML5 version is the latest and this language is being used in the project as well. HTML5 provides many new functionalities making it more appealing to the developers.

Server Side Components

Apache:

Apache is also quite well-known Web server or HTTP server. This web server allows to test and host the web applications. Apache can host small applications to the enterprise level applications. This web server is usually used in conjunction with Tomcat. The combination of both these servers allow developers to create web applications which are more interactive and dynamic in nature. These servers are fast, reliable and provide security to the data. These servers are a part of the WAMP server packages which allow the client server interaction on the same machine.

PHP:

PHP (recursive acronym for PHP Hypertext Pre-processor) is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML What distinguishes PHP from something like client-side JavaScript is that the code is executed on the server, generating HTML which is then sent tothe client. The client would receive the results of running that script, but would not know what the underlying code was.

• SQL

Structured Query Language or SQL is a standard Datahase language which is used to create, maintain and retrieve the data from relational databases like MySQL. Oracle, SQL Server, PostGre, etc. The recent ISO standard version of SQL is SQL 2019

As the name suggests, it is used when we have structured data (in the form of tables), All databases that are not relational (or do not use fixed structure tables to store data) and therefore do not use SQL are called NoSQL databases Examples of NoSQL are MongoDB, DynamoDB, Cassandra, etc

SYSTEM FUNCTIONALITY

- The proposed system will be designed to support the following features:
- The proposed system has a user friendly Interface for porting of data to server.
- The proposed system provides the facility to pull the data from the server of the specified Supply order number and get the respective report.
- The proposed system provides the no replication of data.
- User can get the desired output according to their queries. This is an added advantage.

Softwares used

DATA COLLECTION

The softwares used for the data collection and processing:

1. Microsoft Excel:
This software is used for the purpose of creation of excel sheets. Which then imported in phpMyAdmin for Data visualisation and Test cases analysis.

 2. WAMP
WAMP is the most popular web server (after which comes Microsoft's IIS)
available. The reasons behind its popularity, to name a few, are:
a. It is a free server package.
b. The source code is visible to anyone and everyone, which basically enables anyone (who can rise up to the challenge) to adjust the code, optimize it, and i fix errors and security holes. People can add new features and write new modules which makes it a good OSS option.
c. This server can be used to host enterprise level projects or even school projects
.d. The WAMP can work with both static and dynamic data.
This server is a software (or program) which has collection of packages that run in the background under an appropriate operating system, which supports multi tasking, and provides services to other applications that connect to it, such as client web browsers.

3. MYSQL
MySQL is the most advanced open source database server. Three basic office productivity applications exist: word processors, spreadsheets, and databases. Word processors produce text documents critical to any business. Spreadsheets are used for financial calculations and analysis. Databases are used primarily for data storage and retrieval. You can use a word processor or spreadsheet to store small amounts of data. However, with large volumes of data or data that must be retrieved and updated frequently, databases are the best choice. Databases allow orderly data storage, rapid data retrieval, and complex data analysis.

METHODOLOGY

The incremental build model is a method of software development where the product is designed, implemented and tested incrementally (a little more is added each time) until the product is finished. It involves both development and maintenance. The product is defined as finished when it satisfies all of its requirements. This model combines the elements of the waterfall model with the iterative philosophy of prototyping.

The product is decomposed into a number of components, each of which is designed and built separately (termed as builds). Each component is delivered to the client when it is complete. This allows partial utilization of the product and avoids a long development time. It also avoids a large initial capital outlay and subsequent long waiting period. This model of development also helps ease the traumatic effect of introducing a completely new system all at once.

TESTING AND DEBUGGING

Software testing is a critical element of the ultimate review of specification design and coding. Testing of software leads to the uncovering of errors in the software functional and performance requirements are met. Testing also provides a good indication of software reliability and software quality as a whole. The result of different phases of testing are evaluated and then compared with the expected results. If the errors are uncovered they are debugged and corrected. A strategy approach to software testing has the generic characteristics:

Testing begins at the module level and works "outwards" towards the integration of the entire computer based system.

► Different testing techniques are appropriate at different points of time..

‣ Testing and debugging are different activities, but debugging must be accommodated in the testing strategy

Goals and Objectives

"Testing is a process of executing a program with the intent of finding an error". A good test case is one that has a probability of finding an as yet undiscovered error. A successful test is one that uncovers an as yet undiscovered error: Our Objective is to design test processes that systematically uncover different classes of errors and do so with minimum amount of time and effort.

Statement of scope

- A description of the scope of the software testing is developed. All the features to be ested are noted as follows. The basic principles that guides software testing are.

- All test cases should be traceable top customer requirements. The most severe defects from the customer's point of view are those that cause the program to fail to meet its requirements.
- Test case should be planned long before testing begins. Testing plan can begin as soon as the requirement model is complete. Detailed definition of the test cases can begin as soon as the design is solidified. Therefore, the entire test can be planned before any
  code has been generated.
- Texting should begin "in the small" and progress towards "in the large". The first test planned and executed generally focus on the individual modules. As testing progresses testing shifts focus in an attempt to find errors in integrating clusters of modules and
  ultimately in the entire system

Test Case

Before the project is released, it has to has pass through a test cases suit, so that the required functionality is met and previous functionality of the system is also not broken to do this, there is an existing test cases which checks for the previous functionality. New test cases are prepared and added to this existing test suit to check for the added functionality. Test case describes an input description and compare the observed output with expected output to know the outcome of the test case. If it is different, then, there is a failure and it must be identified.

IMPLEMENTATION

Once the system was verified, the implementation phase started. A crucial phase in the system development life cycle is successful implementation of new system design. Implementations simply mean converting new system design into operation. This is the moment of truth the first question that strikes in every one's mind that whether the system will be able give all the desires results as expected from system.

The term implementation has different meanings, ranging from the conversion of basic application a complete replacement of computer system Implementation is used here mean the process of converting new or revised system design into an operational one. Conversion one aspect of implementation. The other aspects are the post implementation review and software maintenance. There are three types of implementation:

- Implementation a computer system to replace a manual system.
- Implementation a new computer system to replace an existing one.
- Implementation a modified application to replace an existing one.

SCOPE AND LIMITATION

Scope of the proposed system:

The proposed system provides the automated generation of LPP reference that includes the LPP Rate and the reference date. LPP is used at the time of Worksheet preparation along

with the tender price, which helps to obtain the overall and annual escalation. Escalation is related to the number of months, calculated by the LPP reference date and the worksheet preparation date of the particular financial year.

The "Inventory Management System" software is being developed as an accurate and efficient system for the user. In this system the record of the each request details are preserved along with their transaction related to them. The system is also made secured as all the updating and transaction can be done by the authorized person.

Limitation of the Proposed System:

• Databased used is SQL Server and every database have a stack limit.

• Manual Errors at the time of entering the data can't be check, only the validation required w.r.t proposed system is checked.

Conclusion:
The objective of this project was to build a program for maintaining the details of all Supply Order The system developed is able to meet all the basic requirements. It will provide the facility to the user so that they can keep tracks of all the equipment being supplied. The management of the Inventory will be also benefited by the proposed system, as it will automate the whole supply procedure, which will reduce the workload. The security of the system is also one of the prime concerns.

There is always a room for improvement in any software, however efficient the system may be. The important thing is that the system should be flexible enough for future modifications. The system has been factored into different modules to make system adapt to the further changes. Every effort has been made to cover all user requirements and make it user friendly.

Entity Relationship Diagram:

Entity RelationShip Diagram

STATION
- Station-ID
- Station-NAME

INWARDS
- Inward-ID
- Station-ID
- Item-ID
- Date
- Quantity

Inward Serial Numbers
- inward-serial-number-ID
- inward-ID
- serial-numbers

Outward Serial Numbers
- outward-serial-number-ID
- outward-ID
- inward-serial-number-ID

OUTWARDS
- outward-ID
- Station-ID
- item-ID
- Date
- Quantity

ITEMS
- item-ID
- item-NAME

ITEM TYPES
- item-type-id
- item-id
- type

ITEM MANUFACTURE S
- item-manufactures-ID
- item-id
- manufactures

has