

Advanced Programming Techniques
Project Proposal
"Lap Inventory"

Group Members:

Name	Matriculation Number
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Project Supervisor:
Prof. Dr. Andreas Fischer

Aim

To create an inventory website for Laptop manufacturing company. This website will be used by the company to keep track of all the supplies required by the R&D, Manufacturing and other departments of the company. This will help the company to keep ample units of equipment and track consumption of products in one place.

Objective

The main objective of this project is to create a platform for the following

- Information of equipment
- No. of units
- Spare tools in Manufacturing
- Detail of each equipment with photo and description in storage place

and allow users to

- Add / remove inventory
- Add new type of objects to the list
- View detailed information of the product related to their department

Project Overview

This project aims to develop a website that can be used to keep a log of a company's inventory where the employees belonging to certain branch can interact with inventory and external accountants can get an overview.

The website will be used to keep track of company's movable assets. For any visitor the website will ask for login credentials. They are not allowed to create their own profile.

Only the administrator has the rights to create account or remove accounts.

This website will provide the ability to enter items, specifying numbers, values and category to its users. And it can be accessed by large number of users simultaneously.

Administrator can add, remove, change role of user on the website. Add new items and change their characteristics. Add or remove company branches. While the employees from R&D, Sales, Manufacturing can have access to the inventory. While, the accountants can only have overview of the inventory.

Items in inventory have photo price tag, total count and short description. They can be associated with an arbitrary number.

Employees can interact only with the items concerning their own branch. When adding any item, the employee can be provided with the list of prelisted items or they can create a new type of item.

Only the external accountant can view all the items and summary pages from all the branches.

Separate pages summarize the status of the inventory, grouping items by branches. The pages include statistics such as the total value in a given branch.

Design of Project:

A set of different software will be used to build the Web application for Inventory. It includes

steps to follow for the completion like

- Layout designing with HTML, CSS and JavaScript.
- Python programming for every functionality to perform the logics behind it.
- Django data base used for storing the data.
- Linux for the server-side deployment of Web application.

HTML and CSS perform basic structure in layout designing for a web page, so that it looks user

friendly and easy to understand. However, CSS increases the HTML functionality with more

functions like Header and Footer of Webpages, Make Buttons and background images for

Homepage etc.

Python is a high-level, interpreted, interactive and object-oriented scripted language. It was

designed to be highly readable which uses English keywords frequently whereas, other languages use punctuation and it has fewer syntactical constructions than other languages. It supports the development of a wide range of applications from simple text processing to www browsers to games. Python's success is that its source code is fairly easy-to-maintain.

One of Python's greatest strengths is the bulk of the library is portable and cross-platform

compatible on UNIX, Windows and Macintosh. Python provides a better structure and support

for large programs than shell scripting. Apart from this Python has many more advantages over

other programming languages. [1]

Overview of ADMIN's Dashboard

Our inventory system can have one or more than one Admin. Admin can change any user's role.

Admins will have full rights to modify changes under below sections:

- Can create or delete accounts.
- Set and change roles of user.
- Can add, delete new items and change their characteristics.
- Can assign employees to company branches.
- Can add and remove company branches.

Search Box will also be available to admins.

Overview of Employee Dashboard

Employee will have following rights.

- Can add, delete and modify new items and change their characteristics.
- Adding items in assign company branches.
- While adding new item, employee can create new item type or can select existing item type.

Search Box will also be available to employee.

Overview of Accountant's Dashboard

Our inventory system can have one or more than one Accountants.

Accountant will have limited rights which are following.

- Can only view items and summary pages.

Summary Page

It will give information about current status of inventory. Total values in a given branch will be shown in summary statistics. It will also summarize grouping items by branches and tags.

Overview of Anonymous

Anonymous user will have access to login page. This user can become Admin, employee or external accountant by logging. Only Admin have rights to create new accounts and assigning roles to users.

Overview Of IMPLEMENTATION

Development of INVENTORY SYSTEMS webpage is divided in four major stages:

1) FRONT – END DEVELOPMENT

- HTML, CSS & JavaScript – to create Webpages
- Library – Bootstrap (helps in UI)

2) BACK – END DEVELOPMENT

- Server – scripting language – Python
- Framework – Django

3) DATABASE

- Creating database – MySQL/Sqlite3

4) TESTING

- Unit Testing

5) SECURITY

- Configure HTTPS (SSL verified domain)
- The system should provide security to the database by user of passwords

6) Performance

- All pages are operational
- All button and link are operational

Project Responsibilities: In This project we will work based on rotational technique so all team member will work in all areas.

Muhammad Danyal Butt:

- Front-End
- Back-End
- Security

Tejas Buva:

- Front-End
- Back-End
- Testing

Mahmoud Gamal :

- Front-End
- Back-End
- Database

Declaration:

In this report, we have made illustration of all the required points from our point of view. It is possible that there may be an adjustment during work or inability to complete a point that we will mention in the last report.

Reference:

[1] <https://www.c-sharpcorner.com/blogs/importance-of-python-programming1>