SOFTWARE REQUIREMENTS SPECIFICATION

for

3D Clothing Assist

Version 1.0 approved

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Contents

Revision History

Name	Date	Reason For Changes	Version

1 Introduction

1.1 Purpose

The purpose of this project is to enables shoppers to try on clothes to check one or more of size, fit and style but virtually rather than physically.

3D Clothing Assist is a platform where we provide an easy way to choose the variety of clothes, which suits you. Physical try-on of clothes is a time consuming procedure in retail shopping so we provide virtual try that can help to speed-up the process. The shopper can see the clothes on his body without actually wearing them, or narrow down her selections before physical try-on.
The System also provide facility of suggestion that suits you. You can also invite your friends to be a part of this system and suggest them cloths.

1.2 Document Conventions

This document uses the following conventions.

1.	DB	Database
2.	DDB	Distributed Database
3.	ER	Entity Relationship
4.	3D	Three Dimension
5.	Edge detection	Image processing technique for finding the boundaries of objects within images

1.3 Intended Audience and Reading Suggestions

This project is a prototype for the 3D Virtual Assist. This has been implemented under the guidance of college professors. This project is useful for trying the clothes virtual rather than physical. This project also helps to client, Stores and online Shopping sites.

1. Clients:
   The users of the system will get a clear idea of the software and hardware requirements to be engaged.

2. Store Admin:
   The users of the system will get a clear idea of the software and hardware requirements to be engaged and also having all the record of their store with purchase and Buys of the products.

3. Lab Technicians:
   They will be in a position to attain the various features that are enabled in the software there by inducing a new definition for security.

4. Developers:
   Project developers have an advantage of quickly understanding the methodology enabled and personalizing the product.

5. Students:
   The project shows an infinite path in the field of security in Internet labs. There is always a perspective of development.

The authors would suggest clients to go through the requirement section thoroughly before installing the software. The lab technicians are expected to have certain knowledge in the terms used and hence can go for the security issues directly. Students and Developers can utilize the documentation as a resource in developing the project to a new product.

1.4 Project Scope

The proposed system is developed to overcome the problem of existing system due to which time saves. All data is taken into consideration while buying the product.
3D clothing Assist helps in E-Shopping by acting as virtual dressing. The images of the product will be super-imposed and augmented on user's body on live video feed. Thus helping the customer an effect of a real dressing room.
The goal of system is to provide Virtual try-on of clothes that received much attention recently due to its commercial potential. It can be used for online shopping or intelligent recommendation to narrow down the selections to a few designs and sizes. In this paper, we present a mixed reality system for 3D virtual clothes try-on that enables a user to see herself wearing virtual clothes while looking at a mirror display, without taking off her actual clothes.

1.5 References

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2. Papahristou E,
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3. P. Eisert and A. Hilsmann,
"Realistic virtual try-on of clothes using real-timeaugmentedrealitymethods,
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2 Overall Description

2.1 Product Perspective

This system is designed to overcome the problem of existing system due to which time saves. All data is taken into consideration while buying the product.

The particular type of system is intended to support E-Shopping by acting as virtual dressing. The images of the product will be super-imposed and augmented on user's body on live video feed.

The system which we build is intends to build makes a step beyond the products currently on the market and intends to make it self known as the best tool for scheduling in the industry. To do this, the system must be distributed in a way never before done, as well as robust enough to handle any size problem set. The ability to handle high level of demands while being user friendly enough for day to day scheduling is one of many keys to the success of the system. If the system developed is not realistic to utilize in business, then it will quickly fall out of favor with clients and fail. This above nearly all else, must be central to the design and implementation of the system.

2.2 Product Functions

The Enterprise functional and non-functional requirements requirements are analyzed and all issues and ambiguities resolved. In some cases, the resolution is a deviation from the requirements. This document is for review of management and marketing, and the changes to the spec should be analyzed for acceptability to of the product.

See section 4 for the process used to analyze the requirements, and to generate the modified enterprise requirements below. Each requirement below has a trace back to the line number in the original requirements specification, which is shown in section 4. They also note if there is a dependency diagram object related to the requirement. Each requirement below that was modified from the original has a Note in the requirement description, which describes how it was modified. Our reviewers need to review the changes that were made to the delivered requirements, to ensure they are agreeable.

2.3 User Classes and Characteristics

There are four types of users in this system.The first two are, authorized users, and non authorized users, the only distinction between them is that authorized users are allowed to see the preference and exclusion sets of other users. It is the third type of user, the

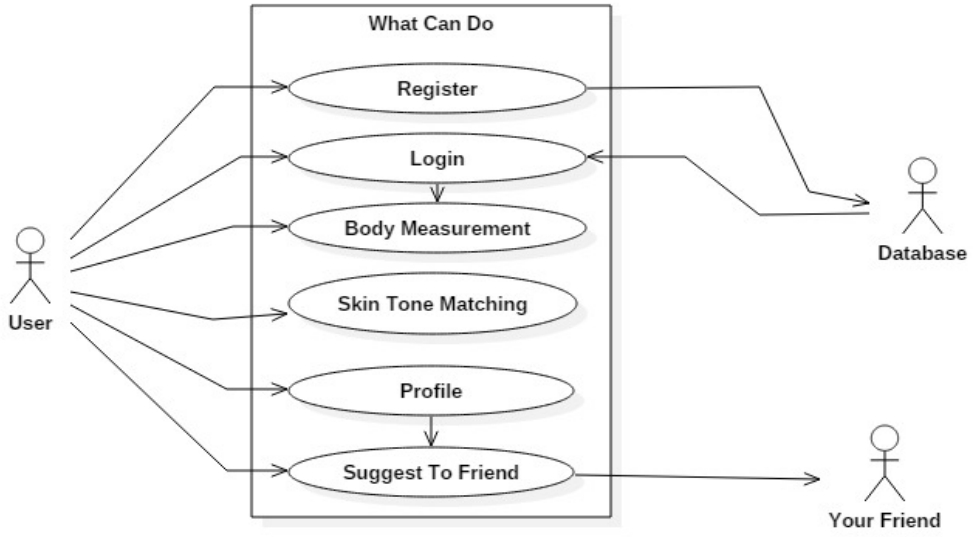

Figure 2.1: Use Case Diagram.

administrator, who is able to initially setup the system, add new users, and set their authorization level.

Most users will be of the type non-authorized. These users are able to accept or decline schedule invitations, set their preferences or schedule meetings. However, during the schedule meeting event, they will not be able to view the selected participants preference or exclusion set. This means that the system will be 100 relied upon to ensure that a meeting time and location is found. If a meeting time is not found, then the non-authorized user has to pick a resolution choice without knowing what may resolve the issue the easiest.

The next most common type of user is the authorized user. These users have the same permissions as the non-authorized user with the additional ability to view other users preference and exclusion set. This ability allows them to visibly check who among their selected brands and contact authorized stores directly before sending out the invitations for the cloth. This may help prevent some conflicts from occurring before the buying is even entered into the system. However, this advantage really is only helpful for small meetings of limited number of individuals or meetings with a few important people who would determine the time and location.

Finally, the system administrators are users who are able to setup the system from the initial installation and maintain the systems user accounts. They automatically have the functionality of authorized users within the normal operation of the system, however have additional menu options which allow them to maintain the system.

Note:
"All users have to have basic computer skills which include working with a web browser such as Internet Explorer or FireFox. Since all interaction with the UI of the system is through a browser window, the system can not be used without access and knowledge of web browser functionality."

2.4 Operating Environment

Operating environment for 3D Clothing Assist is as listed below.

1. distributed database
2. client/server system
3. Operating system: Windows.
4. database: sql+ database
5. platform: vb.net/Java/PHP

2.5 Design and Implementation Constraints

Each user must keep their password as confidential. More over the user must have individual ID for creating a login in the system.

Only Administrator can control user addition and deletion in the system. Also this group could only create reports.

2.6 User Documentation

The product is under development stage and requires a complete implemented prototype to explain the user documentation. Once the prototype is designed and implemented online manuals, user manuals can be provided.

2.7 Assumptions and Dependencies

1. Initially only two locations are connected.
2. Each location is always connected, whether an operator is logged on at the remote location or not.
3. Each User must have a UserID and password
4. There is only one Administrator.
5. Server must always run under Linux system

6. Internet connection is a must.
7. Proper browsers should be installed.
8. Text readers should be installed to view the help files.

2.8 Overview of data requirements

2.8.1 Inputs:

1. User must give his ID and password to access the Internet.
2. Request from the user to view his account details

2.8.2 Output:

1. User account details from the server.
2. Details of various Logins.
3. User get the products which fits to him.

3 External Interface Requirements

3.1 User Interfaces

As stated in section 2.1 this system is a self contained system, relying on very little in the way of external software interfaces. However, the system will require interfaces with the installed computer's hardware. The system is to be a web-enabled system, meaning that all user interaction is done through a web browser. The System interfaces required on the system server are the following:

1. Network interface to a network with an internet connection
2. Database connection to the mySQL database containing user and schedule data

The user can interact with another users while he/She is having the contact number of each other.

All user interfaces other than initial installation occur through a web page.

3.2 Hardware Interfaces

Since neither the mobile application nor the web portal have any designated hardware, it does not have any direct hardware interfaces. The physical Camera is managed by the Camera application in the mobile phone and the hardware connection to the database server is managed by the underlying operating system on the mobile phone and the web server.

3.3 Software Interfaces

The Web application communicates with the Camera application in order to get facial information of the user and visual representation of it, and with the database in order to get the information about the 3d apparels. The communication between the database and the web portal consists of operation concerning both reading and modifying the data, while the communication between the database and the web application consists of only reading operations.

3.4 Communications Interfaces

The communication between the different parts of the system is important since they depend on each other. However, in what way the communication is achieved is not

important for the system and is therefore handled by the underlying operating systems for both the mobile application and the web portal. But this project supports all types of web browsers. We are using simple forms for the apparel's choice, cart delivery etc.

4 System Features

The Virtual Clothing application enables customers to try on clothes virtually by browsing through the online shops, and a system administrator to approve and reject requests for new shops and maintain lists of shop categories. Also the developer is designing an online shopping site to manage the items in the shop and also help customers purchase them online without having to visit the shop physically.The online shopping system will use the internet as the sole method for selling goods to its consumers.

4.1 System Feature 1

4.1.1 Description and Priority

A Customer can browse through the shops and choose products to place in a virtual shopping environment. To proceed with the purchase, the customer is prompted to login. Also, the customer can modify personal profile information (such as phone number and shipping address) stored by the application.

4.1.2 Stimulus/Response Sequences

The Customer will chose a specific combination of clothing apparels from different online stores and use the provided application to try the clothes virtually in 3d fashion.

4.1.3 Functional Requirements

This Functional Requirements Specification documents having operations and activities that a system must be able to perform.
The Functional Requirements should include:

1. Interface requirements
    a) Field 1 accepts User's Facial data entry.
    b) Field 2 only accepts the chosen apparels.
    c) Screen 1 can print on-screen data in appropriate visual format.
2. Business Requirements
    a) Data must be entered before a request can be approved.
    b) Clicking the Approve button moves the request to the Approval Work flow.

3. Regulatory/Compliance Requirements
    a) The database will have a functional audit trail.
    b) The system will limit access to authorized users.
4. Security Requirements
    a) The system must automatically log out all customers after a period of inactivity.
    b) The system should not leave any cookies on the customer's computer containing the user's password.

5 Other Nonfunctional Requirements

5.1 Performance Requirements

First, this application will be used by a single user. There will be no multiple user handling since the application runs on a single portable device without needing any network. The amount of the input is huge since the input data of the application is the video captured by a single camera. The information among the data will be achieved by reducing input into a set of features of the interested objects, which is also essential in object recognition. Interest objects may be more than one at the same time, that the software has to handle multiple object recognition with a single camera. Also, the objects may be moving, or non moving, and this fact should not effect the performance of the application. The major issue here is the application should answer in real-time, namely, the recognizing and labeling operations has to be handled in less than 1 second. Also the application should be able to recognize more than objects simultaneously captured.

5.2 Safety Requirements

Information transmission should be securely transmitted to server without any changes in information.

5.3 Security Requirements

The system must automatically log out all customers after a period of inactivity. The system should not leave any cookies on the customer's computer containing the user's password.

5.4 Software Quality Attributes

1. Availability
    a) If the internet service gets disrupted while sending information to the server, the information can be send again for verification.
2. Security
    a) The main security concern is for users account hence proper login mechanism should be used to avoid hacking. The tablet id registration is way to spam check for increasing the security. Hence, security is provided from unwanted use of recognition software.

3. Usability
    a) As the system is easy to handle and navigates in the most expected way with no delays. In that case the system program reacts accordingly and transverses quickly between its states.

5.5 Business Rules

1. Pricing
    a) The basic price for each product is the current price and can be viewed anytime in the online-shop. The price displayed on the date of order at various online stores is your valid product price.

2. Samples
    a) Samples for experimental purposes are available free of charge.

6 Other Requirements

6.1 Appendix A: Glossary

Augmentation- The action or process of making or becoming greater in size or amount.
Database-A structured set of data held in a computer, especially one that is accessible in various ways.
Virtual-Not physically existing as such but made by software to appear to do so.
Imposed-put (a restriction) in place.
Transverse-move back and forth or sideways.
Internationalization-Process of planning and implementing products and services so that they can easily be adapted to specific local languages and cultures, a process called localization.

6.2 Appendix B: Analysis Models

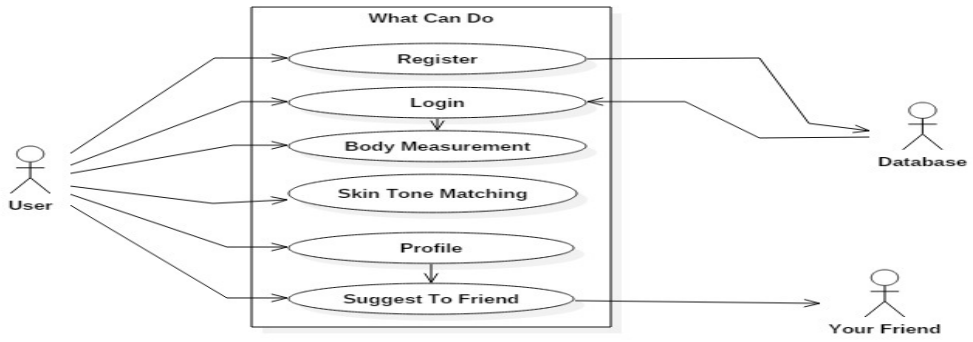

Figure 6.1: Use Case Diagram.

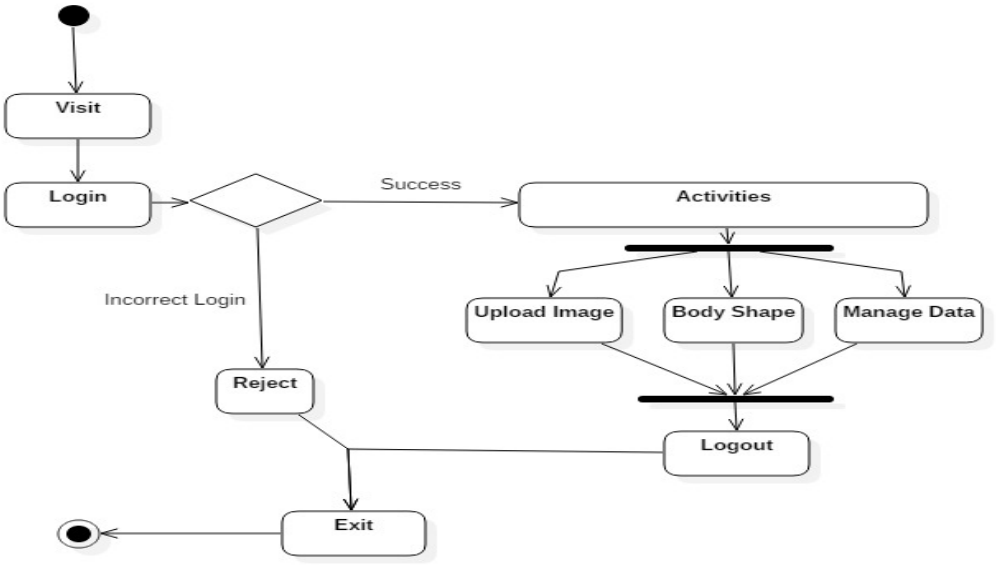

Figure 6.2: Activity Diagram.

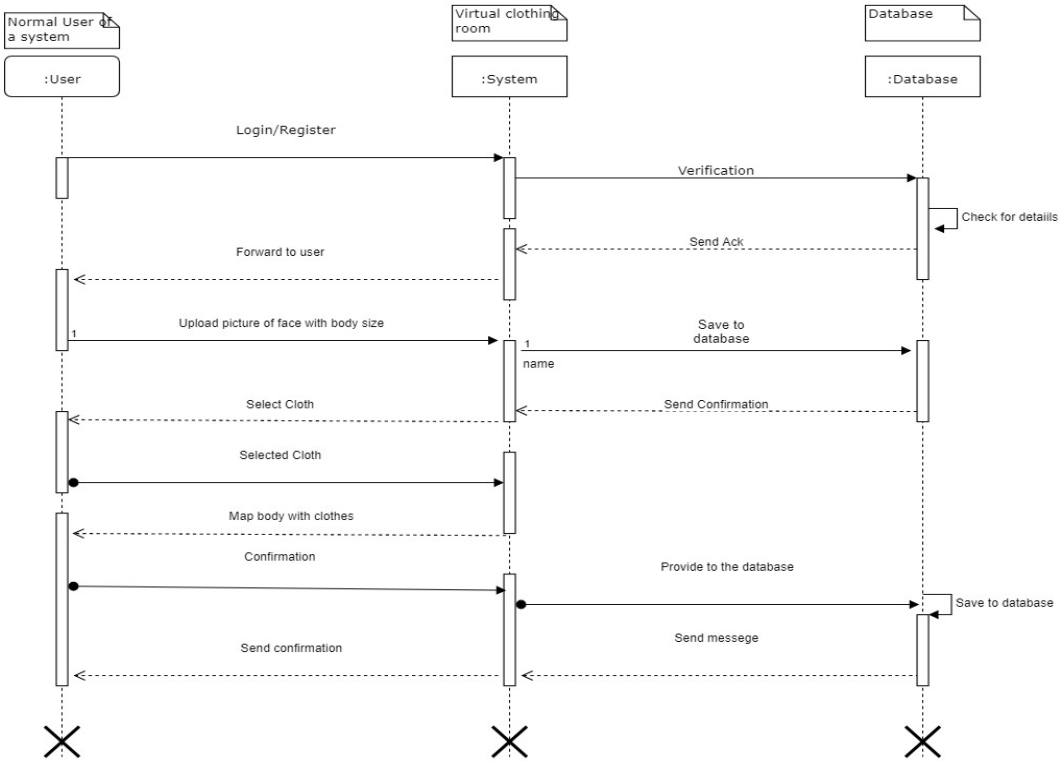

Figure 6.3: Sequence Diagram.