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Next Generation Virtual Mall

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ABSTRACT: A lot of new developments has been incorporated in online shopping from past few years . Online shopping has more customer base, but everything has it's own good and bad points, therefore a new type of system that creates virtual ecosystem with 3D rendered products similar to real products to interact with. In real world we ourselves require to visit the mall and shop for our needs, but if compared to other sites our project concentrates on shopping with real experience without visting the actual mall .in addition to getting experience of an actual shopping on our own comfort we can also make the payments conveniently.

I. INTRODUCTION

Generally people can visit malls only on weekend or holidays due to their work schedule. They can't visit the malls whenever they want and even if they consider the option of shopping online they cannot get the experience of a real shopping mall. So by using Virtual shopping you can feel the actual mall by taking real time experience anytime and anywhere. A user interface consists of a physical medium and contains presentation interface elements which elevate the customer experience of involvement in a certain aspect such as shopping. The more user interaction means more active processing of the data by the customer and leading to a more positive user response.

An Intelligent shopping mall will provide users with a real-like mall ecosystem, as well as customer satisfaction. The main part is to similarize the real shopping process thus taking t to customers and thereby guiding them in accordance with their favourites. So the final goal is imitating real mall for attracting a high user base

1.1 Methodology

The proposed architectures provide the

- This system will consist of a user interface which will make the use of virtual reality architecture.
- This user interface will contain 3D entities that the user can interact.
- This will give the user a complete experience of a real shopping mall.

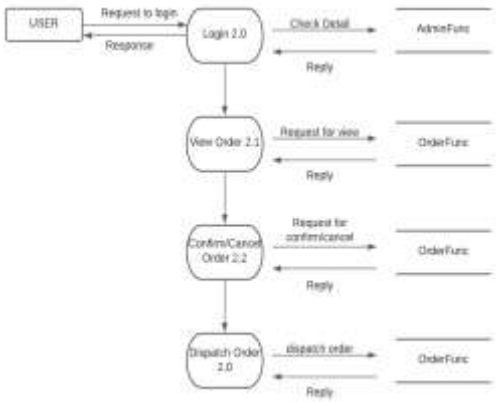

Figure 1 (A):-DFD Diagram.

The 3D entities present in the virtual will have a unique Entity Id for the purpose of separation of several entities. These entity id will be stored in the database with it's corresponding information for easy billing and product usage status. All the database will be managed by using a Cloud database.

1.2 SYSTEM COMPARISON

A. EXISTING SYSTEM

The current system only gives the 2D view of products. A 360 degree view is not available to the users making it less realistic

B. VIRTUAL SHOPPING MALL:

The virtual reality mall imitates the realization of walking in an actual mall from home. They can see product in a 3D environment thus providing a new way to surf through products and shop in a single virtual mall that would provide a realistic experience.

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II. WORKING PRINCIPLE

With the Basic features to log in to enter a 3D mall which non-logged in users won't see our logging system will provide a login token with which while connected to application will be used to track the progress of the user. If the user does not have an account he/she has to register for an account.

Once logged in the customer enters the virtual shopping world where he can examine virtual versions of real life products. User can view the product of their own choice by only press of a key , thus giving a 360 degree view of the product.

The mall works on 3d versions of products which are rendered into the system as soon as the user logins into the system and thereby connects the the 3d model with the database so that user can understand what a specific product is by reading the small popup on the screen which tells information about the product

Users can hold the product and rotate around in order to see the product , if the user like it he can place the product in the cart which triggers value calculation and changes the users cart value in the background , the adding and removal of product from cart will affect the cart value accordingly. After selecting the products the user then can proceed to checkout and pay the bill.

Fig:4.1 Inside view of Virtual Shopping mall

In this system, **Content-based Filter recommendation** has been used which gives recommendation according to similar patterns of a user. For example if Customer X generally buys more biscuits , the recommender system would tell more brand of biscuits to the Customer A. In another example if customer B has high income the recommender will recommend new and best premium membership of certain products. Use of this algorithm helps to overcome cold start problem when there are very few customer interactions, the system would still give good suggestions

2.1 Algorithm and Libraries:

- Supervised Machine Learning Algorithms.
- Python Data Science Libraries like Pandas , Scikit learn and Numpy.
- Content-Based Filtering Recommender for Prediction.

BLENDER GIS library for models.

2.2 **Applications**:

- There are a number of big scenarios where Virtual shopping can deliver a huge advantage over a traditional online shopping experience.
- Marketing the brand. The full marketing of a company would be in a place from the images of business/stores, products etc
- A Virtual experience will give retailers more flexibility for creating an experience that's unique and on brand without spending large amounts of money improving a physical space.
- To update brand, marketing can be done with small software patches thus saving cost.

III. REVIEW OF LITERATURE

Kashyape Mokal ,Alisha Patel ,Mayank Rathi ,Shubham Rashinkar, in this paper author explain what a shopping platform should have although Virtual technology has been implemented, such as excellent service to customers involvement and communication while purchasing products. Very less of them have been used in most of the implementations. Therefore, closing in more near to reality is main goal of online shopping mall .for attracting a broader customer base. [1].

Kata Kapusy ,Emma Lógó , in the paper, author proposed The ongoing importance is on the customer while the strategy continuously repeats itself according to experimental research. Thus, the mall ecosystem and the change of point of sales (POS) have a great impact on customer actions[2].

Yvon Gauthier, Instead of logical findings, research in artificial intelligence has been focused on approximate data ,repeated training data, regression reasoning, big data mining. statistics and probability models that provide approximate results.

IV. CONCLUSION

- Users can visually see any product in animated 3D and buy the products in real world.
- Gives flexible interface to engage with the activities similar to real world ecosystem and brings the customer closer to the experience of good products and services.
- Virtual shopping mall gives virtually enriched experience to customers by allowing customers to go in immersion environment and

experience the 3D-rendered shopping ecosystem.

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