

Designing Websites with the Objective of Inspiring Artists to Sell Their Paintings in Printed Form on the Objects

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Abstract: With technology penetrating every facet of life, the main focus is on building such a web application that helps artists to sell their paintings online and also to provide a platform for regular people to shop and design the items they like to purchase with the help of 3D modelling. This web application will be reliable, relevant as well as in a relaxed manner, best knowledge at the comfort of home. Fine Art Website will provide a platform for end-users to shop from a large number of options and on top of that, they also get to design the items, place an image on the object, adjust it wherever they want to and then finally purchase it by adding it to the cart.

Keywords: 3D Modelling, Display of paintings on a web application, E-Commerce, Image Processing, Printing images on items, Web application.

1. Introduction

The proposed system is to ease the user's decision-making progress, save the user's time and effort by creating a web application. The system will use image processing in the initial stages and once the application is final the E-commerce part will be added to it. The web application will be such that, an image chosen by the user can be uploaded to the website. By the use of Image Processing, this image will be added to an object (example: mug). Now the user can have a clear view of how the designed image is going to appear on the chosen object. Additionally, a 3D view object will be provided in the application so that the customer can check out the project will all the end sides and have different views how the object will appear. The coding of the front end will be done in HTML and CSS languages respectively. The coding of the back-end structure will be done in MySQL and PHP languages by setting up a XAMP/WAMP server. A database will be created so that the images uploaded by the users will be stored permanently. All the records and the activities performed by the user will be stored here. The data will be stored on multiple machines to act as a backup. Hence in case of data loss the data can be recovered quickly. The user will not be disappointed by the final result when the product (designed product) is delivered to them as the user had previously viewed the object from all angles using the 3D view. The cost of building this project will be minimal as there won't be any hardware cost required. The cost required in

the initial stages will be purchasing of the domain name, investments in purchasing the objects initially. The application will be built completely on software.

2. Literature survey

Following are other tools which can be also used to print images on many objects. The details of these websites are elaborated through following section:

'Vista Print' is a website that provides the same functionality as our proposed system. Vista Print has been widely used over India and this website has attracted a lot of users all over India. The only major difference is that our proposed system will not only add images but will also give a 3D view of an image on the specific object. 'Canvas Champ' is an Indian website that focuses on printing images on pillows, wall arts, canvas wall display, canvas photo collage, canvas prints. They also provide various photos prints such as photo pillows, photos calendar, photo mugs, photos books, photo blankets, photo magnets, photo puzzles, photo coasters, wood prints. They also provide variety in Wall Display such as 3 panel, 4 panel, 5 panel and 7 panel display. They have various special prints such as metal prints, acrylic prints, 3D photo prints, bus rolls, magic mugs, acrylic photo blocks and photo poster. There are also canvas prints which includes canvas wall display, photo collage, photo mosaics, pop art, split photo canvas, lyrics on canvas, panoramic photo prints and canvas banners. There have been many websites for printing images on objects but not one of them focuses either on artists or providing 3D view for an object.

3. Motivation

- **Publicity:** Artists, whose work goes unnoticed and are less known by the crowd can display their paintings online. They can even sell their paintings online. Also, if a user wants a specific painting on the object such as mugs or curtains then it can be selected by the user through the web application.
- **Flexibility:** This web application will not only be easy to access but user can also design the items they want to purchase with less efforts.
- **Permanent Data Storage:** To implement such a system that

stores data permanently and not on a temporary basis. The user's data will be stored permanently and he/she can access the data whenever needed.

- 3D Modeling: 3D art will give viewers a sense of depth in a piece, making it appear clearly as many times the clear view of the object cannot be picturized just by showing pictures. Nowadays 3D modelling is in great demand because of their unique feature. The 3D view of an object will be provided to a user so that the user can adjust the images or design the product or object according to their needs.
- Reduced Costs: While designing an object online via a web application, not only your time is saved but the amount of money you spend while traveling to various gift shops is also saved.
- Varieties: The web application will provide numerous options to select from, which will give the user to search for various paintings and buy whichever he/she wants to.

4. Working principle

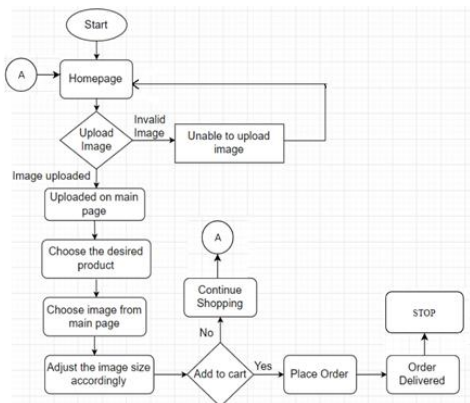


Fig. 1. Flowchart

A. Steps to upload an image

1. The user opens the website and upload an image.
2. If the image is valid then apply the image on the desired product (T-shirt, Mugs, Pillow covers).
3. The image is then properly adjusted accordingly as desired by the user.
4. If the user likes the image, they add it to their cart. If they do not like it then they can continue with their shopping.

This is basic function of our web application which tells us how to upload an image on the web application and how to adjust it onto our selected object.

B. Basic functioning of system

1. This Website is based on E-commerce and the Image processing system.
2. When you upload an image or painting on the website, it will first show it on the homepage of the web site.
3. If you want to print the uploaded image you can get it printed on Canvas, Coffee mugs, T-shirts, Shower curtains, Towels, Bags.

4. During uploading the image for print, you can adjust the image accordingly.
5. After you upload and order the product for print you can get the 3D view of the product.

C. Uploading an image on the website

1. When we select an image from a local folder it gets uploaded on the website's home page directly.
2. When we select an image from a local directory it first gets saved on the server local temp folder and then gets uploaded on Website.
3. Image gets stored permanently on a server and lasts on the website for a certain time interval.

D. Functioning of 3D view and image print

1. Image printing is done in the image processing module of our website.
2. Image processing allows adjusting images on a product we want to print.
3. Image processing allows setting uploaded images on product according to the scale of the product bits by bits it adjusts the image on product.
4. For 3D view of the product we have used a Utility package to display images in 3-Dimensional form.

5. Dependencies

- Python: We have used Python as it is easy to learn, clear to read, and simple to write in which will not only speed up development but also provide reliability and scalability. Due to its large selection of pre-built libraries we can use Python for almost anything like scientific computing, image processing, data processing, machine learning and deep learning.
- Django: We have used Django as it is an open source python web framework which can be used for rapid development of a website. It not only helps in clean design but also maintainable and pragmatic. It allows to focus on components of the application which are new rather than spending time on already developed components of an application.
- Bootstrap: This framework helped us design websites faster and easier. Bootstrap has included HTML and CSS based design templates for forms, buttons, tables, typography, modals, navigation, etc. They have also granted support for JavaScript plugins.
- Blender: We have used Blender to create 3D models as it is a 3D program. It can also be used to create animation and this software competes with other 3D programs such as Flash, Photoshop, etc. 3D package helps in texturing, FX work, camera tracking, game modelling.
- Paint 3D: Using Paint 3D, we can create impressive 3D objects and it also lets us use and manipulate vast amount of pre-made objects in the 3D library. This type of software can only be used on Windows operating system.

- HTML: Hyper Text Mark-up Language is used to design documents which aims to be displayed on a web browser. Assisting language of HTML is JavaScript and Cascading Style Sheets.
- CSS: Cascading Style Sheets is a style sheet language used to style documents of HTML. CSS is used to make the appearance of the document stylish and in proper manner. Using CSS, one can easily describe height, width, color, etc. of the elements of the document.

6. Conclusion

We have designed a system in such a way that it will not only increase user's experience while shopping online but will also challenge the technology in coming ages. This system has been specially designed for less user's effort. We have specially implemented such a system for customer satisfaction. With the use of 3D modelling in this system, we can help user to design an object in a more customized way. Our main focus has always been the satisfaction of the customers while buying things such as mugs, wall art, mobile covers, bed sheets. We have also made a way for artists to sell their paintings online via our website which will give more exposure to unnoticed artists. Also, the paintings can be used and printed on mugs, bed sheets, mobile covers.

7. Future scope

3D art will give viewers a sense of depth in a piece, making it appear clearly as many times the clear view of the object cannot be picturized just by showing pictures. From digitally modelled objects to carefully painted and shaded drawings that feature detailed realism, 3D art transports viewers into new worlds and scenes. 3D art will add new perspective to the products. This is a feature that is not so common in the current market and it will soon become an upcoming trend. In addition to providing an online marketplace and fulfilment service, this website could provide artists and photographers with sales and marketing tools to help simplify and accelerate their careers. Also, by creating business opportunity by launching the website and selling the desired products on it. It can be done to start our own business platform using E-commerce.

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