



Design and implementation of augmented reality technology in m-commerce based creative patents

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ABSTRACT

This research became carried out on Jl. Narogong, Perum. Limus Pratama Regensi, Blok A No.27 - Cileungsi, West Java in June 2019 via interviewing Creative Patent owners due to the fact the advertising gadget for Creative Patent merchandise handiest uses social media and sales facts series is still guide. The purpose of this studies is to provide a sales software this is able to introduce and market merchandise efficaciously with augmented fact functions, assist in recapping orders to minimize communication mistakes and make it simpler to find product income statistics extra successfully. M-commerce programs built based on cellular programs for users and web sites for admins. The research methodology used is the intense programming method and is designed the use of the Unified Modeling Language (UML). The results of testing records using a questionnaire tool show a median value of eighty four.Eight%. The conclusion of this observe M-commerce programs designed for mobile make it clean for Creative Patent clients to access records related to shopping for and promoting transactions whenever and anywhere they're.

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INTRODUCTION

The internet that was originally just as one way to share (sharing) file data from one place to another, currently growing so many applications can be done using the internet like looking for information, sending letters, and now the internet has become one how to socialize (social networking) on social networking applications such as Facebook/Twitter. (Kurniawati, 2020). Many people are starting to make transactions online via an internet connection. Various ways to do this transaction ebay, amazon, and some use payment methods such as internet-banking, paypal or kaspay. More and more online trading, providing inspiration for build integrated applications in shopping on the internet using Augmented Reality (AR) called Furniture app Shopping Manager (FSM). The FSM application was developed by implementing several main technological components, namely Augmented Reality (AR), 3D engines into the application. All of these components are designed to present an attractive shopping atmosphere in front of users digitally. In this way, users can try whether the furniture they buy fits the room. By using FSM, users can try 3D furniture models,

choose furniture models and take photos of the room with visualization results of the preferred 3D furniture model which can then be saved.

AR is an environment that includes virtual 3D objects into a real environment in real-time. E-Commerce is a set dynamics of technology, applications, and business processes connecting companies, consumers, and certain communities through electronic transactions and trade in goods, services and information provided electronically. (Feliciano et al., 2021) One of those efforts leveraging this app is selling furniture online, in sales furniture online there are activities that do not can be done as in sales conventional namely trying furniture and suitability to the room, because that online furniture sales can be supported by the FSM app so buyers can try on furniture virtually to match with room. The improvement of times and tradition has made many adjustments to the lifestyle of humans the usage of the net. Many human beings are starting to make transactions on line thru a web connection. Various methods to make those transactions are ebay, amazon, and a few use payment techniques inclusive of net-banking, paypal or kaspay. (Battina, 2021) The rise of online buying and selling has stimulated us to construct included applications for buying at the net the use of Augmented Reality (AR). AR is an environment that consists of virtual 3-d gadgets right into a actual environment in real-time. (Sembiring, 2017)

Creative Patent is a small industry engaged in paper crafts and add-ons which became established in 2015, the Creative Patent product advertising and marketing gadget handiest uses social media and sales statistics collection remains manual which makes use of handwriting to recap product income consequences and product orders. (Parameswara et al., 2021). Using a machine this is nonetheless guide like this will result in ineffective overall performance and such things as this will have an effect on serving purchasers, which finally results in complaints from purchasers about the offerings supplied with the aid of Creative Patents, besides that also in searching and processing product income records. (Fauzy, 2019). It will take a long time because of the irregularity of the stored statistics, the sale of paper crafts and add-ons online has activities that can't be achieved as in conventional sales, particularly consumers can't immediately attempt the accessories they need to reserve in keeping with the patron's desires, due to the fact Creative Patent clients have requests one-of-a-kind from the goods supplied by Patent Creative. (Syaifudin & Winarsih, 2020)

Based on the effects of interviews with the owner of the Creative Patent concerning the present troubles, namely the guide system for recording orders isn't powerful enough to serve clients thru social media in addition to looking and processing product sales statistics and the outcomes of the finished questionnaires. (Melani & Rahmiati, 2021). 76.5% isn't always most beneficial and this may lead to a loss of effectiveness in serving clients and subsequently court cases will arise from consumers approximately the offerings provided by using Creative Patents. 74.3 % accepted innovative patents for developing m-commerce programs. (Siek & Sutanto, 2019) 82.9% of applications made based on cellular programs and 71.4% agreed that inside the Creative Patent application there may be an augmented fact function. (Evers & Andersson, 2021). Therefore online souvenir sales can be supported by means of the Creative Patent software in order that buyers can use souvenirs in line with purchaser wishes with Augmented reality era as if using accessories that used for actual. Based on the outcomes of interviews and questionnaires on those troubles, the authors propose the name "Augmented Reality Technology in Mobile Commerce-Based Creative Patent Creativity". (Septiani & Kasih, 2021)

RESEARCH METHOD

Research Flowchart

The float of this research the author uses the Agile Process method with the Extreme Programming (EP) technique. Extreme Programming focuses on coding as the principle activity at this level of the improvement cycle that is more attentive to the needs of the purchaser ("agile") as compared to traditional techniques. (Kaper et al., 2021).

Development Method

The software development and design method used is Agile Process with the Extreme Programming (EP) method.(Melani & Rahmiati, 2021). Extreme Programming focuses on coding as the primary interest in any respect ranges of the improvement cycle which is greater responsive to purchaser necessities (“agile”) in comparison to conventional methods. In addition, Extreme Programming covers all regions of software program improvement. The levels done within the Extreme Programming technique are Planning, Design, Coding and Testing.(Kezaldo & Abriantoro, 2021)

A greater detailed cause of the tiers of Extreme Programming is as follows:

1. Planning (Planning)

This level is step one in device development. In this level, several making plans sports are finished, namely identifying issues, studying desires, and placing a schedule for implementing device development.(Hawari, 2021)

2. Design (Design)

The next stage is design, at this level modeling activities are carried out starting from device modeling, architectural modeling to database modeling. System and architecture modeling. Using Unified Modeling Language (UML) diagrams while database modeling uses Entity Relationship Diagram (ERD).(Dalistika & Suherman, 2021)

3. Coding (Coding)

This degree is an hobby of imposing modeling that has been made right into a person interface using a programming language.(Lestari et al., 2021). The programming language used is PHP with a dependent technique. For database control gadget using MySQL software program.

4. Testing (Testing)

After the coding degree is entire, then the device testing stage is finished to discover what errors arise whilst the application is strolling and to discover whether or not the machine constructed is in accordance with person wishes(Saverus, 2019).

Augmented Reality

Augmented Reality or frequently abbreviated as AR is a generation that combines two-dimensional and 3-dimensional virtual gadgets into a real 3-dimensional environment and then tasks these digital objects in actual time.(Boavida et al., 2020). Unlike virtual truth which completely replaces truth, augmented truth only provides to or complements fact. (Leach & Melicher, 2020)defines augmented reality as a combination of real and digital items in a real surroundings, strolling interactively in actual time and there's integration among gadgets in 3 dimensions, particularly digital gadgets incorporated in the actual world. Merging actual and digital objects is viable with appropriate show technology, interactivity is possible via positive enter devices and exact integration calls for effective monitoring.

Unified Modeling Language (UML)

UML (Unified Modeling Language) is a modeling language for systems or software with an object-oriented paradigm. (Bocken & Short, 2020).Modeling is simply used to simplify complex problems in this kind of way that they are less complicated to examine and understand (Nugroho, 2010)

RESULTS AND DISCUSSIONS

At this stage the author designs an interface display mockup that aims to describe the display that will be built according to needs, so that it can make it easier to implement the system. (Aghion et al., 2019).After the admin has entered the correct username and password, it will automatically proceed to the dashboard display. This home page display is the user page displaying images, categories and all products in the application.This augmented reality result page display is an augmented reality image display.(Meister et al., 2020). Implementation of Augmented Reality FSM,

It is AR technology applied to the FSM system uses the Action Script 3.0 programming language and the FlarManager Framework. The FSA application is integrated into the browser by utilizing RIA (Rich Internet Application) technology, namely using Adobe Flash/Flex plugins that are installed on every computer. And then, implementation of FSM marker detection. That is of marker detection on the main menu is done by obtaining input images from the user's camera. To be able to read the position of the marker, the system must be equipped with a tracking system. FLARToolKit has provided a separate class called tracker to solve this tracking problem. After tracker from FLARToolKit is loaded, the tracker will be connected to the picture plugin to be able to receive input and detect markers. With this marker, the FSM will know where the 3D furniture model will be placed. Implementation of FSM on online shopping sites, the appearance of the FSM application on the online site is made as attractive as possible so that it is easily accessible and attracts the attention of customers. The user prints the marker provided by the application and then takes a photo of the private room with the marker in the middle then upload an image of the room that has previously been marked with a marker to the application. After the user selects a 3D model, he can shift right and left, rotate it, enlarge and reduce the scale of the 3D model. System Testing, in testing this application, the testing method is with a notebook PC and cellphone that has a camera. To run for this application, a web browser is required that has been integrated with the Flash Player plugin version 10. The system specifications that the author used in this test are as follows. Hardware Platforms are AMD Turion X2 2100 Mhz processor, 1GB Memory, Mobile phone with integrated 2 MP digital camera, Video Card: NVIDIA GeForce 9100M G, Software Platform, Adobe Flex Builder / Flash Builder, FLARManager, Away3D, Operating System: Windows 7 Ultimate, Mozilla Firefox web browser version 3.6.10, flash player plugin 10. Testing is done to find out whether the system has been running according to its function. Testing on the Augmented Reality application system is based on the ability to display 3D objects above the marker in the FSM web application, then by using the FSM feature you can move the 3D model to the right, left, forward, backward, rotate, increase and decrease the volume of the 3D object.

CONCLUSION

The conclusions from the study entitled "Design and Implementation of Augmented Reality Technology in M-Commerce-Based Creative Patents", are as follows, based on the results of the questionnaire, 81.4% of m-commerce applications designed for mobile make it easy for Creative Patent customers to access information related to buying and selling transactions whenever and wherever they are. (Adabi, 2020). Based on the results of the Black box Testing, the Creative Patent Admin checks every time after receiving orders from customers. (Jan, 2021). If the admin has received payment, the next order process can be sent to the customer's address listed. Based on the results of the questionnaire 82.2% by using the augmented reality feature consumers can easily choose Creative Patent products for sale. (Sikki et al., 2021). In closing the conclusion section, the AR FSM application currently implemented still needs a lot of improvements and refinements in the future. Hopefully the results achieved by designing the FSM application can be accepted. The weakness for this research and additions for the future is that the hardware used is no longer PC but Android smartphone or IP phone that supports Flash Player 10.

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