DEVELOPMENT OF APPLICATION DESIGN JERSEY BASED 3D WEBSITE

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ABSTRACT

Many team sports lovers who want to mendisign jersey (his team shirt) itself but for the novice sometimes encountered some difficulty in a choice of colours and define the medesign or pattern to design jersey he wants in accordance with financial owned. Because the prospective buyer is difficult to determine the time to be present or to come to the workshop usbeck and when prospective buyers come to the workshop usbeck too many requests in the resolution for the desired jersey design so time consuming so much and gives rise to the terlambatan or time of molor in workmanship.

Hence in the wake of a jersey-based design system 3D website so that prospective buyers can do the design of the jersey are individually and minimize time molor happens in usbeck itself. And can facilitate customer or a prospective buyer in determining the desired design.

Keseimpulannya prospective buyers can specify the desired design only through the website and can determine which design would like to use, without having to come to the workshop usbeck. And prospective buyers can find out some information that is available in design features jersey-based 3D website.

Key Words: Development, Design Of Jersey, Unity

1. INTRODUCTION

Usbeck is workshop or store that provides the making and selling of jersey jersey available. Usbeck store located on JL. Jend. Ibrahim adjie, Komplek ruko griya dynasty block B6 No. 175, Kiara Leaning bandung, Usbeck is companies that serve jersey with models available at workshop usbeck. Jersey has two types namely printing machine and manual. Generally the jersey in a message that is jersey printing, since the number of prospective buyers who have difficulty in designing then wake up design 3D alternative using the jersey-based website. To facilitate the prospective buyer and operator usbeck in determining the design desired by prospective buyers.

Because the prospective buyer is difficult to determine the time to be present or to come to the workshop usbeck and when prospective buyers come to the workshop usbeck too many requests in the resolution for the desired jersey design so time consuming so much and gives rise to the terlambatan or time of molor in workmanship, because operators in the workshop usbeck only one person running and receive a reservation and request a design that in asking for the customer, therefore, arise in a jersey-based design system 3D website so that prospective buyers can do the design of the jersey are individually and minimize time molor happens in usbeck itself..

Design 3D Jersey became one of the alternative program to design understandable, either students or workers. [12] one example that shows that sports teams began to become lifestyle is starting numerous means of establishing sports such as futsal, airy, roomy, airy volleyball, football, and so on.

2. THEORETICAL BASIS

The cornerstone of the theory is a collection of theories which will be the basis of the development of this application has been in kutik and in auto summary from various references. The cornerstone of the theory should also be the focus of research in accordance with the problems with dilapang and can also be useful to give a general overview about the background research as well as a discussion of research results.

2.1 Multimedia

Multimedia is a collection of many of the media under the control of a computer, and a multi media need to support more than one type of media that is like text, images, video, animation, and audio. [1]

2.2 WEBGL

Webgl stands for web graphic library which is an API platform (Application Programing interface). 3D graphics library that allows internet browsers to create 3D scenes in a simple and efficient way. [4]

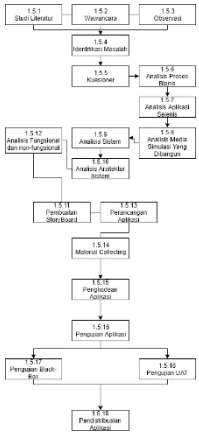
2.3 Blender

Blender is an open source 3D creation suite application that supports the whole of pipe modeling, rigging, animation, simulation, rendering, composition, and motion tracking, to editing videos and creating games or games. [6]

2.4 Unity

Unity 3D is a cross platform based game engine. Unity can be used to make games that are used on computer devices, smart phones, iPhone, Playstation, and X-BOX.

3. METODE PENELITIAN



Gambar 1 Metodologi Penelitian

3.1 Analisis sistem

Collecting various information needed in various components with the maximum can identify and evaluate problems or obstacles so that they can be improved and developed.

3.2 Analisis arsitektur

Stages analyze the system architecture that must exist in the system application development process.

3.3 Observasi

Collect data from the results of observing or directly participating in the research environment, so that the data can be based on observations in the field.

3.4 Pengujian UAT

Testing of the user to make the results of the proof that the application built is acceptable to the user

4. HASIL DAN PEMBAHASAN

In this study a system analysis will be carried out through several steps, as follows:

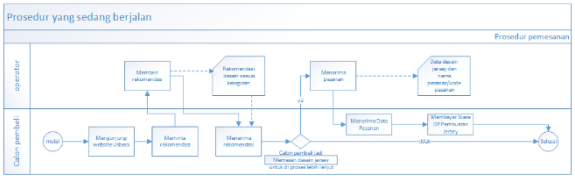
4.1 Analisis Sistem

Many potential buyers find it difficult to determine the design for the desired jersey, especially for prospective lay customers who want to make purchases and reservations in determining the desired choice and design, difficulty in obtaining information about material available in the USBeck itself.

4.2 Analisis sistem yang sedang berjalan

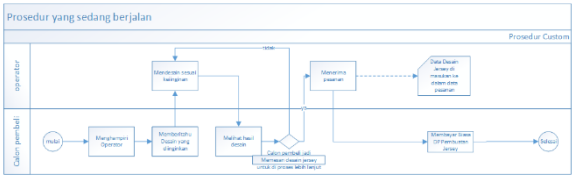
Analyze work procedures that are running on the system that is running

4.2.1 Prosedur pemesanan



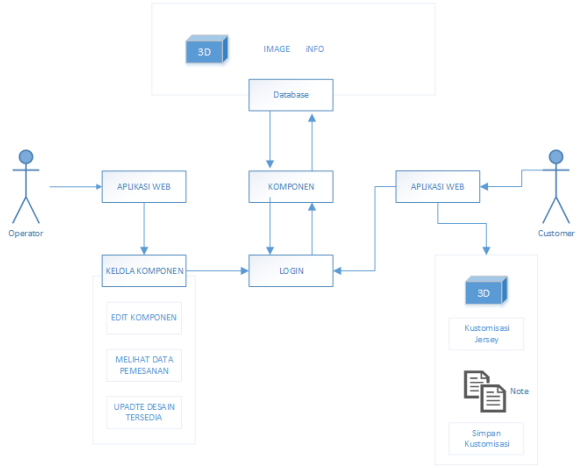
Gambar 2 : Prosedur Pemesanan

4.2.2 Prosedur Custom



Gambar 3 : Prosedur Custom

4.3 Analisis arsitektur



Gambar 4 : Analisis Arsitektur

4.4 Analisis spesifikasi kebutuhan perangkat lunak

1. Kebutuhan Fungsional

Tabel 1 : Spesifikasi Kebutuhan Fungsional

SKPL-ID	Keterangan
SKPL-F-01	Login
SKPL-F-02	Registrasi
SKPL-F-03	Simpan kustomisasi
SKPL-F-04	Mengelola List
SKPL-F-05	Mengelola Edit
SKPL-F-06	kustomisasi Jersey

2. Kebutuhan Non-Fungsional

Tabel 2 : Spesifikasi Kebutuhan Non-Fungsional

SKPL-ID	Keterangan
SKPL-NF-01	Analisis kebutuhan pengguna
SKPL-NF-02	Analisis kebutuhan perangkat keras
SKPL-NF-03	Analisis kebutuhan perangkat lunak

4.5 Analisis non fungsional

4.5.1 Analisis Pengguna

1. Karakter pengguna

Tabel 3 : Karakter Pengguna

Pengguna	Calon pembeli dan operator usbeck
Umur	Diatas 12 tahun
Jenis Kelamin	Laki-laki dan perempuan
Keadaan Fisik Dari Pengguna	Normal memeiliki penglihatan dan wawasan teknologi .
Bahasa yang dikuasai	Bahasa Indonesia

2. Pengetahuan Pengguna

Tabel 4 : Pengetahuan dan pengalaman pengguna

Pengetahuan dan Pengalaman Pengguna	
Pengetahuan computer	Dapat menjalankan dasar-dasar computer
Pengalaman aplikasi	Dapat menggunakan *web browser* atau dapat menggunakan aplikasi jual beli *online*
Kemampuan membaca	Dapat membaca dengan baik dan benar
Tingkat pendidikan	SD , SMP dan Diatas drajat.
Keterampilan mengetik	Dasar (10 WPM)
Kemampuan bahasa	Indonesia dan Inggris

4.5.2 Analisis Perangkat Keras

1. Perangkat keras yang ada di Usbeck

Tabel 5 : Perangkat keras di Usbeck

No	Perangkat Keras	Spesifikasi
1	Monitor	Monitor 14” inches

2	Precessor	Processor AMD A8-5550M APU withRadeon HD Graphics 4CPU 2.1GHz
3	Memory	8GB RAM
4	Hardisk	500GB
5	VGA	VGA AMD Radeon HD 8550G + HD 8570M Dual
6	Mouse	Standar

2. Perangkat keras yang di butuhkan

Tabel 6 : Perangkat keras yang dibutuhkan

No	Perangkat Keras	Spesifikasi
1	Monitor	Monitor 14" inches
2	Precessor	Intel Core 2 duo E4400
3	Memory	1GB RAM
4	Hardisk	500GB
5	VGA	VGA intel HD Graphics Family
6	Mouse	Standar

4.6 Analisis fungsional

Functional needs analysis describes the process of activities that will be applied in a system and explains the needs of the system so that the system can run well and according to needs. The analysis carried out is modeled using UML (Unified Modeling Language). The modeling stages in the analysis include usecase diagram definitions, usecase scenarios, sequence diagrams, activity diagrams and class diagrams

4.7 Implementasi Sistem

After the system is analyzed and designed in detail, it will then go to the implementation stage. The implementation objective is to confirm the design program module for system actors so that users can provide input to the system builder.

4.7.1 Implementasi Perangkat keras

Tabel 7 : Perangkat keras untuk membangun Aplikasi

No	Perangkat Keras	Spesifikasi
1	Prosesor	AMD A8-5550M APU with Radeon™ HD Graphics 2.1GHz
2	VGA	AMD Radeon HD 8550G
3	HDD	1 TB
4	Memory	6GB

4.7.2 Implementasi Perangkat Lunak

Tabel 8 : Perangkat Lunas untuk membangun aplikasi

No	Perangkat Lunak	Spesifikasi
1	Operasi Sistem	Windows 10 64bit
2	Program Inti	Unity 2017, blender 2.79, 3D Coat
3	Web Server	Xampp

4.7.3 Implementasi Basis Data

Making data using MySQL

1. Pembuatan database

Table 9 : Pembuatan database

```
CREATE DATABASE desainjersey;
```

2. Pembuatan tabel

Tabel 10 : Pembuatan tabel

No	Tabel	Query
1	Bahan	`CREATE TABLE `Bahan` ( `id` INTEGER PRIMARY KEY AUTOINCREMENT, `name` TEXT, `description` TEXT, `price` INTEGER, `active` INTEGER DEFAULT 0 );`
2	Tangan	`CREATE TABLE `Tangan` ( `id` INTEGER PRIMARY KEY`

No	Tabel	Query
		AUTOINCREMENT, `name` TEXT, `description` TEXT, `price` INTEGER, `active` INTEGER DEFAULT 0);
3	Order	CREATE TABLE `Order` (`id` INTEGER PRIMARY KEY AUTOINCREMENT, `name` TEXT, `description` TEXT, `price` INTEGER, `active` INTEGER DEFAULT 0);

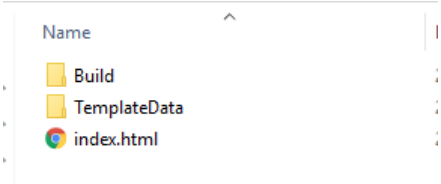
4.7.4 Implementasi Unity

Unity WebGL supports all major browsers. However, if the expected level of support and performance varies between browser 1 and other browsers.

Tabel 11 : Tabel Compability

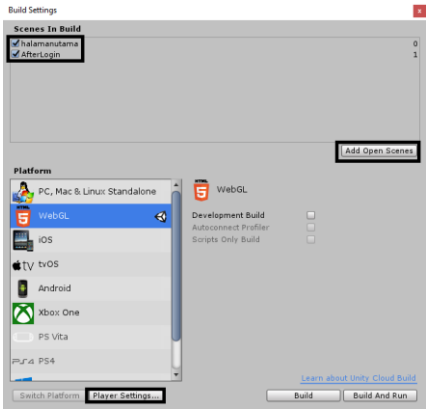
WebGL Browser Compatibility				
	Mozilla Firefox 52	**Google Chrome 57**	**Apple Safari 11**	**MS Edge 16**
WebGL Support	Yes	Yes	Yes Safari 8 terbaru	Yes
Web Audio	Yes	Yes	Yes	Yes
Full-screen support	Yes	Yes	Yes Safari 10 terbaru	Yes
Cursor locking	Yes	Yes	Yes	Yes Edge
support				13 dan terbaru
Gamepad support	Yes	Yes	Yes	Yes
IndexedDB	Yes	Yes	Yes	Yes
WebSockets	Yes	Yes	Yes	Yes
WebRTC	Yes	Yes	No	Yes
WebGL 2.0	Yes Firefox 52 dan terbaru	Yes Chrome 57 dan terbaru	No	No
asm.js AOT compilation	Yes	No	No	No
WebAssembly	Yes Firefox 52 dan terbaru	Yes Chrome 57 dan terbaru	Yes Safari 11 dan terbau	Yes Edge 16 dan terbaru
Large-Allocation Http header	Yes Firefox 53 dan terbaru	No	No	No
Brotli Compression	Yes	Yes	No	Yes

4.1.4.1 Building and Runing WebGL Project



Gambar 5 Build Folder

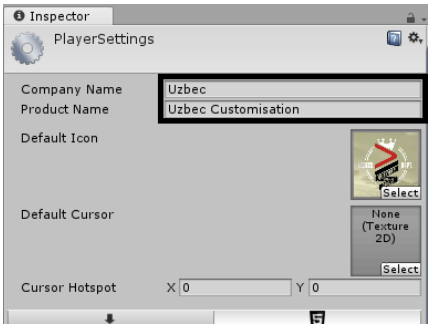
A. Build Setting



Gambar 6 Build Setting

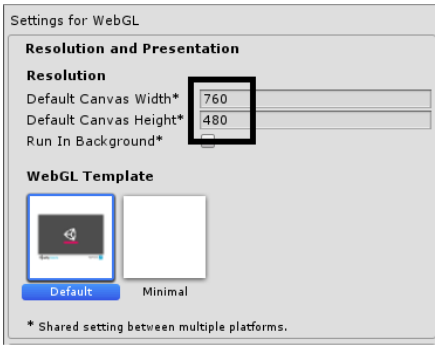
B. Player setting

1. General Setting



Gambar 7 Player Setting

2. Resolusi dan presentasi



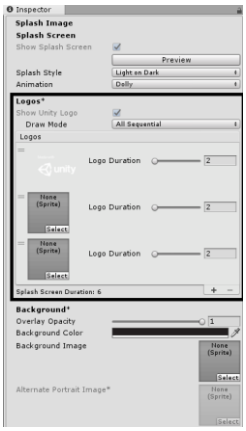
Gambar 8 Resolusi dan Prensentasi

3. Icon



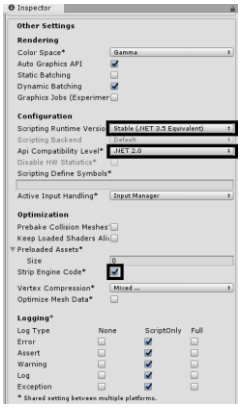
Gambar 9 : Icon Setting

4. Splash Image



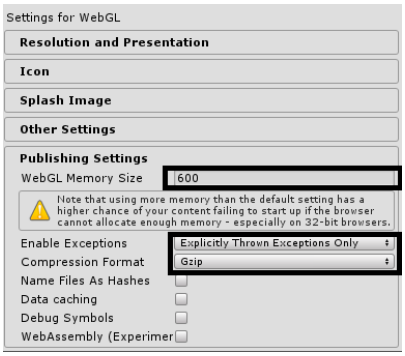
Gambar 10 Splash Setting

5. Other Setting



Gambar 11 Other Setting

6. Publish Setting



Gambar 12 Publish Setting

4.8 Pengujian Sistem

Some of the UAT methods used in testing are as follows:

1. Case and Design Test
2. Alpha / Beta testing
3. Field Testing

4.8.1 Test Alpha

Tabel 12 Sekenario Bertahap Calon Pembeli

Komponen yang diuji	Skenario Pengujian	Jenis Pengujian
Login	Username dan password	BlackBox
Registrasi	Username dan password	BlackBox
Home	Save data	BlackBox
	Load data	BlackBox
Desain Jersey	Menampilkan Daftar komponen	BlackBox
Edit Bagian	Mebubah tampilan	BlackBox

Tabel 13 Hasil Pengujian

No	Functional	Jenis Pengujian
1	Login	*Black Box*
2	Register	*Black Box*
3	Home	*Black Box*
4	Mengelola List Komponen	*Black Box*
5	Mengelola Edit Komponen	*Black Box*

Tabel 14 Hasil Pengujian Login

No	Deskripsi	Hal Yang Diharapkan	Hasil Yang Didapat	Kesimpulan
1	Penggun a Merupak an Operator	Berhasil Melakuka n Login dengan Menampil kan halaman utama	Berhasil Login dan menampil kan halaman utama	[√] Diterima [ ] Ditolak
2	Penggun a Merupak an Calon Pembeli	Berhasil Melakuka n Login	Berhasil Login dan menampil kan halaman	[ ] Diterima [√] Ditolak

Tabel 15 Hasil Pengujian melihat data list Komponen

No	Deskripsi		Hal Yang Diharapkan	Hasil Yang Didapat	Kesimpulan
1	Pengguna klik tombol bagian jersey		Menampilkan list model komponen dari komponen yang tersimpan pada database	Menampilkan list model komponen dari komponen yang tersimpan pada database	[√] Diterima [ ] Ditolak
2	List model jersey		Menampilkan field nama model komponen dan field deskripsi model komponen yang tersimpan pada database	Menampilkan field nama model komponen dan field deskripsi model komponen yang tersimpan pada database	[√] Diterima [ ] Ditolak

Tabel 16 Hasil Merubah Data Komponen

No	Deskripsi	Hal Yang Diharapkan	Hasil Yang Didapat	Kesimpulan
1	Penggguna klik bagian jersey	Menampilkan list model komponen dari komponen yang tersimpan pada database	Menampilkan list model komponen dari komponen yang tersimpan pada database	[√] Diterima [ ] Ditolak
2	Penggguna klik desain yang diinginkan	Menampilkan field komponen desain yang di pilih	Berhasil Menampilkan field komponen desain yang dipilih	[√] Diterima [ ] Ditolak
3	Field nama komponen, field deskripsi	Menampilkan nama komponen, deskripsi komponen yang tersimpan pada tabel	Menampilkan nama komponen, deskripsi komponen yang tersimpan pada tabel	[√] Diterima [ ] Ditolak

5. KESIMPULAN DAN SARAN

Based on the results of the tests obtained in the research conducted in the preparation of this final project and referring to the research objectives that have been made, it can be concluded that

1. After conducting the interview and questionnaire testing phase, it can be concluded that the prospective buyer is positive about the main purpose of this research namely Building Jersey Design Application Based on 3D Website and prospective buyers can determine the desired design and see information about the description of the jersey in the jersey section.
2. This application has mostly met the needs of prospective buyers in determining the desired design.

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