IT PROJECT 700

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PAINTILES CONSTRUCTION PROJECT PROPOSAL PHASE 2

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1) Identifying a need

The most important opportunity that Web Based application development is offering is the ability to reach a large and diverse audience. Web based applications have become an integral part of people's lives, with billions of smartphone users worldwide. This presents a huge market for developers to create and distribute Web based applications that can help Businesses thrive. Additionally, Web based applications provide a unique platform for businesses and individuals to engage with their customers. Through features such as push notifications, in-app purchases, and location-based services. However, most construction companies still send their employees to physcally go to sites to do measurement for quotations.The utilization of web collaboration for construction venture helps in interfacing with anybody in the group is conceivable continuously regardless of how far they are separated. It permits field and office representatives to cooperatively deal with an undertaking consistently by including field notes, photos, and progress reports as though the two gatherings are sitting opposite each other in a gathering room. Without the need to travel, they can, at present, examine matters altogether, making the unexpected execution of answers for issues conceivable.

Web collaboration diminishes errors and exclusions and more much of the time named than decreased improve, development cost or decrease of in general venture span. The advantages of web collaboration incorporate diminished undertaking cost for the proprietor, higher benefits for contractual workers, prior culmination, and fewer agreement questions. The accentuation on connections instead of exchanges can set up help for persistent improvement and long haul connections that reach out to the future task
Online joint effort innovation encourages correspondence among all task members. Every association in the group keeps up its data innovation framework, utilizing the task coordinated effort programming—some of the time called "groupware"— during development and in some cases to keep up the undertaking after the finish.

With all gatherings focusing on their extent of work, a decent development administrator will maintain an emphasis on the more significant objectives of the undertaking and the subtleties encourage correspondence and joint effort among the controls and guarantee they remain on target during the lifecycle of plan and development.

2) Preliminary Investigation

Web based Applications are used today by a rapidly growing majority of construction firms. This paper investigates Web Based applications in various aspects of the construction industry, such as planning, surveying, designing, graphics, pre-bidding, budgeting, scheduling, quality and cost control and equipment management.

Web based Applications can support project managers in all of their tasks:

1. Coordination:

It cannot be assumed that effective communication process will exist in 'temporary' construction project organisations. The division of labour and responsibilities, as well as the exchange of information and the workflow within in the project, must be planned, implemented and controlled.

2. Documentation:

The construction process has to be documented thoroughly and in real time. On the one hand, records may be required for regulatory reasons and, on the other, they are needed for monitoring, controlling and accounting construction processes.

3. Control:

The identification of discrepancies between target and actual performance is essential to target-oriented control. All processes need to be monitored within a narrow timeframe to ensure effective corrective actions can be taken, in particular, controlling quality, cost and programme.

Coordination, documentation and control are closely related, and project management software tools have to take account of joint data uses, exchanging data between the tools as well as with other applications, such as design or tender software. Clear interfaces reduce unnecessary data collection and prevent inconsistencies.

4. Scheduling Software:

Construction scheduling software is used to plan, monitor and control project progress. Buffers and the corresponding critical path can be calculated based on process durations, deadlines and relationships and appropriate resources can be assigned. The results are usually displayed in the form of a Gantt chart, network plan or list. By entering current data, the user is able to automatically generate appropriate target-performance comparisons.

5. Project Communication System:

Project communication systems support the coordination of a construction project by providing a joint platform to all project members for collaboration and information exchange. Usually, the platforms are internet-based and data access can be governed by different user authorisations and privileges. The range of functions varies greatly. Some platforms simply provide a common data store whilst others provide comprehensive media and workflow support.

6. Digital Construction Diary:

Digital construction diaries range from simple templates for word processors, to internet-based systems with complex data structures. By integrating media such as photo documentation, the cogency of the construction diary can be increased. Pictures can prove especially useful to remote project team members.

7. Cost Control Software:

Cost control software is based on capacity planning methods. Resources are assessed according to cost information, such as the charge-out rates for workers and equipment. By linking to the project's accounting software, budget figures can be compared with actual figures. In addition, reports can be generated automatically presenting a visualisation of the processed data.

3) Feasiable Study(Technical, Operational & Economically)

- Project Identification

Paintiles Construction project seek to help Clients and their customers to have effective communication and provide real time solutions to their problems.

- Goals and Objectives

By providing a web based application that a Customer can access anywhere in the world, they will be able to ask questions, requests quotations and browse previous work of the company.

- Market Analysis

The South Africa construction market size was $25 billion in 2023. The market will grow at an AAGR of more than 3% during 2025-2028. Investments in renewable energy and the industrial sectors, with the government's plans to increase the share of renewable energy in its total

electricity mix will drive the market growth.The key sectors in the South Africa construction market are commercial construction, industrial construction, infrastructure construction, energy and utilities construction, institutional construction, and residential construction.

Commercial construction: The project types in this sector include leisure and hospitality buildings, office buildings, outdoor leisure facilities, retail buildings, and other commercial construction. A rebound in tourism activities and the construction of retail buildings and data centers will drive the commercial sector's growth during the forecast period.

Industrial construction: The project types in this sector include chemical and pharmaceutical plants, manufacturing plants, metal and material production and processing plants, and waste processing plants. Investments in the construction of electric vehicle production plants and factories across the country will drive the sector's growth during 2025-2028.

Residential construction: The project types in this sector include single-family housing and multi-family housing. The government's focus on the construction of affordable housing in the country will support the residential sector output over the forecast period.

- Technical Analysis

Functionality: Web applications can have various functionalities such as e-commerce, social networking, content management, etc.

Interactivity: Web applications can be interactive, allowing users to input data, perform actions, and receive real-time responses.

Database integration: Web applications can integrate with databases to store and retrieve data.

Security: Web applications may have different levels of security measures to protect user data and prevent unauthorized access.

Scalability: Web applications can be designed to handle a large number of users and scale as the user base grows.

Economic Analysis

Developing a quality app in South Africa can range from R5 000 to R4.3 million. At least that's when using traditional methods, but we have a few tricks up our sleeve. For Paintiles Construction Web Application, a simple cost between R5 000 and R10 000, while a more complex build might go up to R50 000. These cost estimates are unparalleled in the South African and international development landscape.

The following are needed to create the web based application

- Hardawere, by a harware I refer to a Personal Computer. A Personal Computer cost nothing less than R4 500.
- Softwares, Softwares will use the community editions which are free.
- Hosting, hosting will cost R195 per month to month use.

The total cost to the project for a start will require nothing less than R5 000.

4) Project Plan

Creating the project

- Week 1-Week 2 (Front End Development)
- Week 3 (Front end Testing)
- Week 4 (Fixing errors and Bugs of Front End)
- Week 5-Week 6 (Back end Development)
- Week 7 (Back end Testing)
- Week 8 (Fixing Bugs & Errors for Back End)
- Week 9-Week 10 (Databased Management and Testing)
- Week 11 & 12 (Launching and Hosting of the Application)

Required attributes for classification:

- Accessibility: Web applications must be accessible through a web browser.

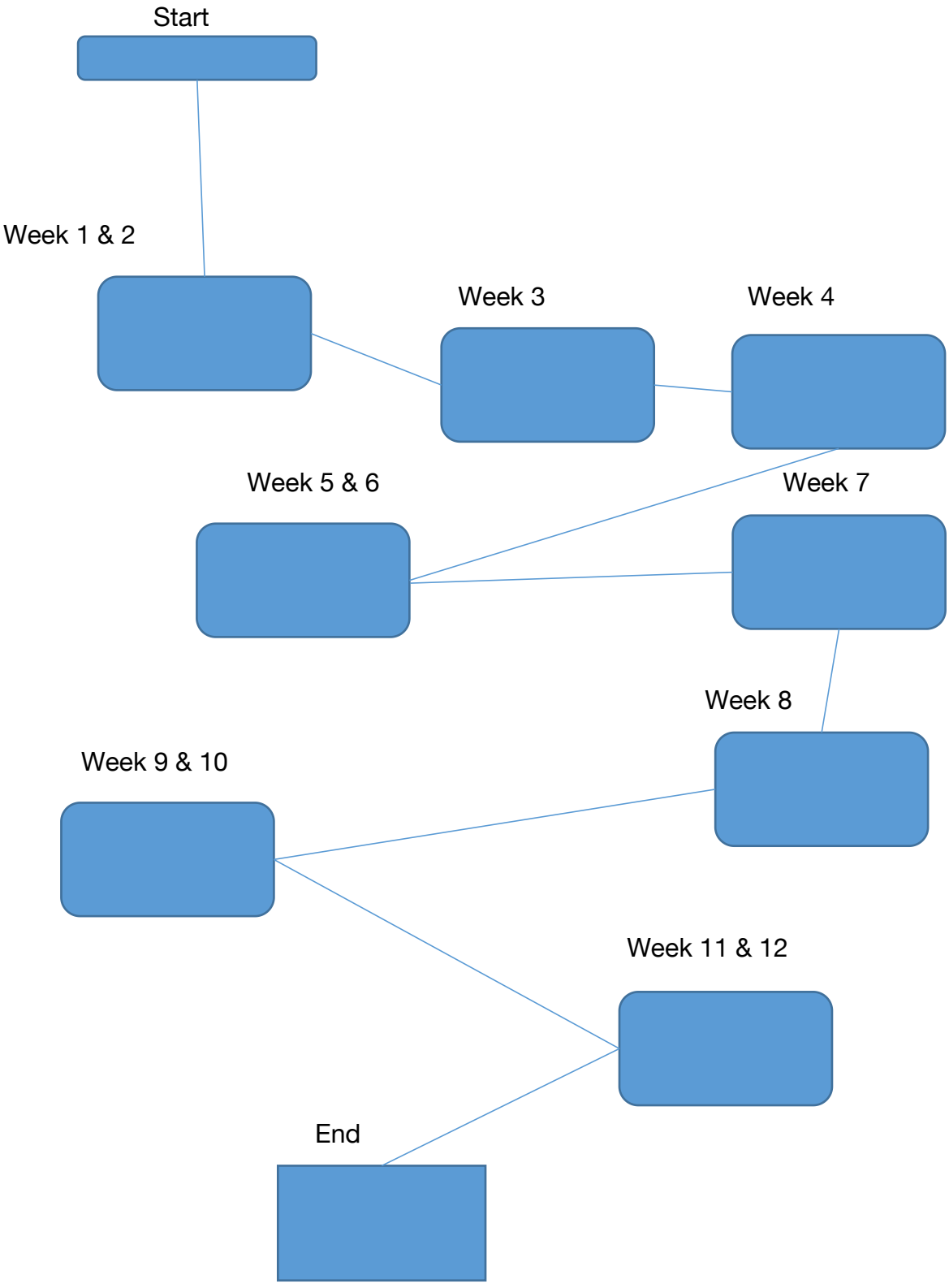
- Internet connection: Users need an internet connection to access web applications.

- Server-side processing: Web applications run on a web server and perform processing on the server side.

- Client-server architecture: Web applications follow a client-server architecture, where the client (web browser) sends requests to the server, and the server processes those requests and sends back responses.

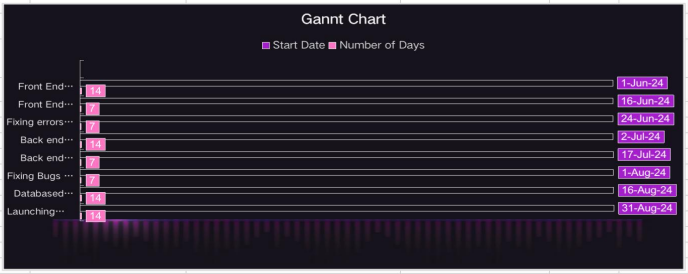
5) Project Scheduling (Pert Chart and Gant Chart)

Pert Chart



Gant Chart

Task	Start Date	Number of Days	End Date
Front End Development	1-Jun-24	14	15-Jun-24
Front End Testing	16-Jun-24	7	23-Jun-24
Fixing errors and Bugs of Front End	24-Jun-24	7	01-Jul-24
Back end Development	2-Jul-24	14	16-Jul-24
Back end Testing	17-Jul-24	7	31-Jul-24
Fixing Bugs & Errors for Back End	1-Aug-24	7	15-Aug-24
Databased Management and Testing	16-Aug-24	14	30-Aug-24
Launching and Hosting of the Application	31-Aug-24	14	14-Sep-24



6) Software Requirement Specification

A SRS forms the premise of this association's of the whole project. It sets out the system that all the improvement groups will follow. It will give basic data to every one of the clients, including advancement, tasks, quality confirmation (QA) and support, guaranteeing the groups are in arrangement. A venture with affirming that the prerequisites are satisfied and helps business pioneers settle on choices about the lifecycle of their item, like requesting a quotation.

Here are the requirements for my software

Business drivers – The problem with the current system is that Clients need to contact service providers for onsite visit. The new framework will enable customers to log a call and get assisted online without onsite visit.

Front-end developers will interfaces and user experiences for web applications by using HTML, CSS, JavaScript, and other technologies used to create web pages. They will also design graphics such as icons or buttons used on a website as well as animations that make websites feel alive.

Back-end developers work with databases to store data or retrieve data from databases when needed for application development. They will work with APIs or other programs used to access the data.

Database are responsible for managing, designing and developing databases. They use programming languages such as SQL to develop and manage databases. The role of a database developer is to design and implement a database structure that is efficient while also providing scalability.

7) Data Model

The Data Model for Paintiles Construction Web Application will copromise of the following aspects.

- The log in page
- Reviews Sections
- Comment Sections
- Quotation Sections

The log in Section
Attributes
- Username
- Password

Entities will be used to log in to the system
Relationship Customer sign in Page

Reviews Sections
Attributes
- Name
- Job Description
- Date

Entities will be used to post Reviews for completed work
Relationship Post Reviews

Comment Sections
Attributes
- Name
- Comment

Entities Comment on constrcution news
Relationship Post a comments

Quotations Sections
Attributes
- Name
- Date
- Service Required

Entities will be used to request quotation
Relationship Quotation request