Student:

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Assignment:

Administración de la configuración del software

Homework:

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Career:

Maestría en Ingeniería de Software

Professor:

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Facial Paralysis Treatment Management System

Description

The web application is designed to assist healthcare professionals in managing and monitoring the rehabilitation of patients with facial paralysis. The platform enables the creation of patient profiles, where professionals can input and track patient information.
It allows the development of personalized routines for each patient's needs.

Main features:

- **Patient Profiles:** Creation and management of profiles. Storing relevant information like routine's duration time, patient' progress, patient's images, professional's notes, and all related information.
- **Custom Routine Creation:** Design of routines focused on each patient's needs.
- **Routine Assignment:** The professional can assign a specific routine to a patient.
- **Progress Tracking:** Through the information got from the routines the professional can track the progress of the patient in each session.
- **Dashboard:** The professional has a view of each patient's progress and the main focused information.

This software is just a part of a complex system that includes a mobile application and cloud API.

Functional Requirements

1. **Authentication**
    - Log in into the application
2. **Patient Profile Management**
    - The system must allow professionals to create and manage patient profiles.
    - Each patient profile should store relevant information such as routine's duration time, personal details, progress reports, images, and professional's notes.
3. **Custom Routine Creation**
    - Healthcare professionals must be able to design and create custom rehabilitation routines based on the patient's specific needs.
    - The system must allow professionals to update and modify routines as needed.
4. **Routine Assignment**
    - The system should allow professionals to assign specific rehabilitation routines to individual patients.
5. **Progress Tracking**
    - The system must track the patient's progress by storing and analyzing data from each rehabilitation session.
    - Progress reports should be generated based on patient activities, and these reports should be accessible by professionals through the web application.
6. **Dashboard**
    - A dashboard must be available for healthcare professionals, providing an overview of patient profiles, progress reports, and other key information in a user-friendly interface.
    - The dashboard must display high-level patient progress summaries and detailed individual reports.

Non-Functional Requirements

1. **Security**
    - Data encryption must be used for both data at rest and data in transit.
    - The system must implement user authentication and role-based access control to restrict access to sensitive information.
2. **Scalability**
    - The system must be able to handle increasing amounts of patient data.

3. **Performance**
    - The system must respond to user interactions (e.g., loading patient profiles, assigning routines, and updating progress) within an acceptable time frame (less than 4 seconds for most actions).
    - Data retrieval and processing should be optimized to ensure smooth operation for healthcare professionals.
4. **Usability**
    - The system interface must be intuitive and easy to use for healthcare professionals, ensuring minimal training is required.
    - Information should be presented clearly, with key patient information and progress easily accessible from the dashboard.
5. **Reliability and Availability**
    - The system must be available 99.9% of the time, ensuring minimal downtime for healthcare professionals using the platform.
    - Backup mechanisms should be in place to prevent data loss in case of system failure.
6. **Compatibility**
    - The web application must be compatible with all major web browsers
7. **Maintainability**
    - The architecture should support easy integration with future modules or updates in the mobile application or cloud API.
8. **Data Consistency and Integrity**
    - The system must ensure that data is consistently updated across all platforms (web, mobile, cloud) to avoid any discrepancies in patient progress and routines.

Modules

Authentication

Task	Estimation
Manage Users	5 days
Log In and Log Out	3 days
Recover Password	2 days
Authentication by JWT token for mobile devices	10 days

Patient Profile Management

Task	Estimation
Create patient	2 days
Update routine's duration time, personal details, progress reports, images, and professional's notes by API	5 days
Show patient information	2 days

Custom Routine Management

Task	Estimation
Create routines with exercises	3 days
Update exercises in routines	3 days
Show routine information	2 days

Routine Assignment

Task	Estimation
Assignment routine	3 days
Show routine information	3 days

Progress Tracking

Task	Estimation
Storing session data from device	5 days
Generate page to display session information	8 days
Add graphics to tracking page	5 days

Dashboard

Task	Estimation
summary of patients' information	8 days
filters in dashboard configuration	5 days

Configuration

Task	Estimation
Set up of the project(servers, github, CI/CD, Docker)	20 days
Configuration and deploy to production	5 Days

Management

Task	Estimation
Project Manager	35 days
Testing	30 days

Costs

The cost per hour for development is $150.00
The cost per hour for management is $200.00
The cost per hour for Testing is $100.00

Description	Days	Weeks	Cost per day	Total
Development	74	14.8	$1,200.00	$88,800.00
Configuration	25	5	$1,200.00	$30,000.00
Testing	30	6	$800.00	$24,000.00
Management	35	7	$1,600.00	$56,000.00
Time Buffer	32	6.4	$1,200.00	$38,400.00
Total				$237,200.00

Team

- Junior Developer, Salary $12,000 monthly
- Mid Developer, Salary $25,000 monthly
- Project Manager, Salary $28,000 monthly
- Tester, Salary $ 15,000 monthly

A month has approximately 4.35 weeks.

Distribution Team

Description	Weeks	Total
Configuration		
Mid Developer	5	$28,736.00
Development		
Mid Developer	7	$40,240.00
Junior Developer	10	$27,587.00
Testing		
Tester	6	$20,690.00
Management		
Project Manager	7	$45,058.00
Total internal Cost		**$162,311.00**

Duration

The baseline project has an estimation of 8 months

New Feature - Multi-location Clinic

The client wants to add a new feature to the system. Since the client has many clinics in Jalisco. So, the client wants to differentiate the sessions and patients from each clinic.

New Requirements

Multi Location

- Each Clinic has its patients and sessions.
- Professionals could attend only patients from the clinic assigned.

Modules affected

- **Authentication**: Professional will see only the information based on the clinic assigned.
- **Patient Profile Management:** Patient will be assigned only one clinic
- **Dashboard**: Display information only for the clinic assigned to the professional
- **Progress Tracking**: Device has to know which clinic is set for it

Multi Locations

Task	Estimation
Add clinic relationship with patients and sessions	3 days
Assign professionals to a clinic	5 days
Redirect professionals based on the clinic assigned	4 days
Display information on dashboard only for the professional's clinic	5 days
Add clinic to API requests	10 days

The new feature will be completed in 2 months.

New feature costs

Project cost

Description	Days	Weeks	Cost per day	Total
Development	27	5.4	$1,200.00	$32,400.00
Testing	12	2.4	$800.00	$9,600.00
Management	10	2	$1,600.00	$22,400.00
Time Buffer	7	1.4	$1,200.00	$8,400.00
Total				**$72,800.00**

Internal cost

Description	Weeks	Total
Development		
Mid Developer	2	$11,500.00
Junior Developer	4	$11,000.00
Testing		
Tester	2.4	$8,300.00
Management		
Project Manager	2	$12,900.00
Total internal Cost		**$43,700.00**

The revenue of the new feature is **$29,100.**