

WHITE VENUS ANALYTICS

Client: Longworth Dental Boutique

Full Requirements Document

COIS 4000Y - Fall 2022

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Project Drivers

Purpose of the Project

Every business requires reviewing their data and making decisions for their business based on this data. Solely making decisions based on past data does not produce efficient data. An efficient decision for the business can be made when the business can see what's happening in real-time in context with the historical data. The purpose of this project is developing a Data Analysis Web Application that allows the Business owners to access a comprehensive overview of the company performance through data visualization tools. One platform to be able to track all their patients, to track their service providers' success, and to make informed decisions and come up with solutions based on the analytical visualizations of various condensed reports. This will improve the efficiency and results of the decision making process for the business while also keeping their finances in check.

Goals of the Business Problem

Longworth Dental Boutique hired WHITE VENUS ANALYTICS to build a Web Application that aggregates most of their business metrics in one place and provides the trends and patterns by just one click. WHITE VENUS ANALYTICS did a feasibility study to explore all the possible designs that can improve the business' Data Review Weekly Meetings.

Purpose: To build a web application dashboard that prints business' data

Advantage: To store all business data used for decision making in one place

Measurement: Easy to navigate and operate while taking into consideration all the points that can degrade user-experience.

Purpose: To review the Monthly Revenue reports every week and compare them with previous month's report and the last year's current month's report

Advantage: To compare the trend in the business

Measurement: Visualized data allows the business owner to identify the months when the most patients come and their demographics.

Purpose: To allow all the Business Team members with different user type access level

Advantage: To protect data and accessibility within the business hierarchy

Measurement: The Service Providers of the Clinic (Dentists and Hygienists) will be able to Review their individual Performance Metrics. The Receptionists will access and update all the forms and applications that are required to be sent to the patients. The General Managers and HR of the clinic will use the Generates new client & patient information to build providers schedules. The Marketing Department can import the Reviews and Feedbacks from the Clients. The Technicians and Developers will be able to import source codes, upload new releases and maintain the current version of the platform along with fixing and testing any and all identified bugs.

Purpose: To build firm and non-negotiable firewall security

Advantage: To protect clinic's private data and finances details

Measurement: Applied Password Quality Rules, SQL Injection, Session Cookies, Brute Force Attack testing

Since, the goal and scope of the project is very large, all the features can not be implemented by WHITE VENUS ANALYTICS within the 7-8 months period. Therefore, we will be focusing on a smaller scope of Business Owners and Dentists/Hygienists. The business goal is susceptible to increase upon success of the initial release of the product.

Stakeholder Assessment

Client

Longworth Dental Clinique Boutique is our client that has hired WHITE VENUS ANALYTICS to develop the Web Application Dashboard

Hands on Users/Customers

The customers of this product will be the Business Owners. Their access and permissions will vary according to their positions. There will be the following types of users:

- *Business Owner/Manager*
The business owner/Manager can review the Monthly Revenue reports every week along with the previous month's report and the last year's current month's report to compare the trend in the business. They will have the "views" of all the other Users.
- *Dentists/Hygienists*
Dentists and Hygienists will be able to Review their individual Performance Metrics and Generate Notes for themselves to improve their services.
- *General Managers/HR*
The General Managers and HR of the clinic will use the Generates new client & patient information to build providers schedules.
- *Marketing Staff*
The Marketing Department can import the Reviews and Feedbacks from the Clients and Upload their marketing tactics, ideas and posters that will be accessible to the entire Marketing Department Staff.
- *Receptionists*
The Receptionists will access and update all the forms and applications that are required to be sent to the patients. They will then be able to send these forms and applications to the clients for them to sign these so it's already dealt with before their visit/appointment.

Clinic Patients

The data depends on the patients coming to the clinic for a certain service. This makes the entire data involved in this project entirely dependent on them, making them an important stakeholder. The data depends on the Clinic Patients' frequency of visitation, services they are coming to the clinic for, their preference for any particular doctor/hygienist, and/or their feedback and reviews.

Other Stakeholders

Developers and Technicians will work in a team to create and deliver the system by March 2023. They will import source codes, upload new releases and maintain the current version of the platform along with fixing and testing any and all identified bugs.

Google Review Platform will provide the "Client Reviews and Feedbacks" Data to the platform via API implemented on the platform.

Priorities Assigned to the Users

a. Key Users

Managers:

The Managers own the most percentage of the business and are actively involved in the decision making process of the business. They will have the most priority and permissions across the Dashboard. They will have access to all types of data and user permissions.

b. Secondary Users:

Dentists/ Hygienists:

Dentists and Hygienists are the center of the Business' Revenue. They will have permissions to be able to see Data and Trends related only to the service offered by them individually. This will allow them to evaluate their patients, services and revenues generated by them.

General Managers/HR

The General Managers and HR of the clinic will use the Generates new client & patient information to build providers schedules.

c. Unimportant Users:

Marketing:

Marketing is the third type of user. Their permissions vary greatly compared to the other types of priorities as their target data type is very different.

- *Receptionists*

The Receptionist is another unimportant user that will access and update all the forms and applications that are required to be sent to the patients.

Project Constraints

Solution Constraints

- ❖ The Web Application Web Dashboard being developed should be available on desktops as well as both iOS and Android devices later
- ❖ HTML, CSS, and PHP have to be fully in effect and efficiently written for the project to have its platform ready to use
- ❖ The database that will be implemented later on the project timeline should have optimized queries to have fast and efficient performance
- ❖ The use of existing open-source applications or databases to develop the project may have capacity limitations or hinder the speed of the system.
- ❖ Using minified Javascript and module bundling as language for shorter code that can be parsed faster

Off-the Shelf Software Constraint

- ❖ Associating with the Google My Business API to in-source the reviews and feedbacks from patients for the clinic

Schedule Constraint

- ❖ The final product with narrowed down scope from the full product scope has to be developed by March 2023
- ❖ Each Sprint has a 2-week period for completing all the assigned tasks to the developers
- ❖ The previous sprint must be fully completed to avoid encountering with any delays for the next sprint

Budget Constraint

- ❖ As of the beginning of the project we have no budget constraints regarding the software and tools as all these software and tools are existing open-source and free on the market
- ❖ As the project leaves our hands the client might choose to move the application to a different server which may require payment
- ❖ Financial constraint produced by the labor costs and future web application & database maintenance costs

Legal and Ethical Constraint

- ❖ All patient details are confidential, and can all be seen only by the Manager
- ❖ Dentists and Hygienists have access to their individual profiles which shows them their data and trends

Relevant Facts and Assumptions

- ❖ The Product will visualize the data metrics following the Data Visualization Principles
- ❖ The Entire Product Scope is very large to be able to completed within 7 months of WHITE VENUS ANALYTICS' "hired" period, therefore the requirements and scopes have been narrowed down to fit within this period
- ❖ Data and Math being used for developing performance metrics are provided by the data owners
- ❖ There will be weekly meetings and communications within the executive team and the dentists/hygienists to update any performance metric tracking systems and procedures
- ❖ WHITE VENUS ANALYTICS do not own the statistical data and holds no responsibility over it
- ❖ Open Source Software and Tools are being used with their existing limitations as well as capabilities

Naming Conventions and Terminology

Terminology	Definition
Access Level	Different user type has different authorization to read/create/delete/edit data
Android Devices	Devices with Android Operating Systems
Atlassian	A development and collaborations software that offers tools and practices to software developers, project managers and other software development teams to organize, collaborate and complete work together
Business	Longworth Dental Boutique
Business Owner/ Manager	The staff of the Business that owns the most share of the business and therefore has the most User Permissions across the platform
Business Metrics	The data generated by the business either by their services, shares and investors
Client	Longworth Dental Boutique
Client/Patients	The patients coming to the Longworth Dental Boutique for treatments
Clinic	Longworth Dental Boutique
Condensed Reports	Reports generated with Key Performance Indicators and Business Revenue data that are useful to make informed decisions by the business
CSS	Cascading Style Sheets - The language used to format and design web pages of the application
Current Month's Report	Report generated from data of the current month
Data Analysis	Process of inspecting, cleansing, transforming and modeling data with goal of extracting useful information
Data Review Weekly Meetings	Weekly Meetings within the Decision Making Team of the Business with the agenda of Reviewing Business Data and Performance

Data Visualization Principles	Rules and regulations followed when implementing data visualization to produce most efficient visualization of data
Database	Organized collection of data stored and accessed organically
Decision-making process	Cognitive Process resulting in selection of actions and tasks to improve performance
Dentists	Licensed Doctors of Teeth providing medical services to the patients
Executive Team	Team of employees involved in important decision-making process of the business
Forms and Applications	Documentations required to be filled by every new and/or old patient
General Managers/HR	Human Resources Staff and General Manager Staff responsible for Schedule making and HR responsibilities
Google My Business API	This API provides an interface for managing business location information on Google
Google Review Platform	Google platform where users can put reviews and feedback about a certain business. This platform provides useful information to new prospective users of business
Hands on Users/ Customers	Users that will be using the built-product
“Hired” Period	The time period that the developers and the software company have been hired for building the product. This case 7-8 months
HTML	Hypertext Markup Language - The standardized system used for to design the page framework that will be displayed on the web browser
Hygienists	Licensed Dental Professional that examine patients for signs for oral diseases and educate patients of their oral health
Individual Performance Metrics	Performance Metrics only associated to an individual user
iOS devices	Apple Devices with their device Operating System
Labor Costs	Cost paid as salary to the labor hired by the company/business
Last Year’s Current Month’s Report	If current month = October 2022 then Last Year’s Current Month = October 2021

Maintenance Costs	Money required to maintain a platform
Marketing Staff/ Marketing Department	Staff responsible for marketing portion of the business
Monthly Revenue Reports	Reports generated by the Revenue costs of the month
Narrowed down Scope	Scope to be squeezed in the current ongoing release
Open-source Applications or database	Free and ready-to-use applications and softwares readily available online
Password	The password set up by the individual users of the product to log into the dashboard
PHP	General Purpose Scripting Language used for web development
Platform	In this case - Web Application being developed
Previous Month's Report	If current month = October 2022 then Previous Month = September 2022. Report generated from data of the previous month
Project Timeline	September 2022 - April 2023
Receptionists	The staff handling incoming patients and their files and data
Reviews and Feedbacks	Comments form the users and customers of the business that can be used to improve the business
Requirements	Expected Features of the developing product
Scope/ Scope of the Work	Defined features and functions of a product
Service Providers of the Clinic	Dentists and Hygienists
Sprint	2 week period of development and testing of certain chosen products features in Agile Project Management Process
Stakeholder	Members or groups who directly affect or are affected by the product

SQL	The language used for managing data held in the Database
Technicians /Developers	The software developers responsible for maintaining and developing the software product
Username/Email address	The work email of the individual business users of the product that acts as username to log into the dashboard
WHITE VENUS ANALYTICS	Us. The developers hired to build this product
Web Application	Application Software that runs in a web browser and users can work and edit data on the platform

Scope of the Work

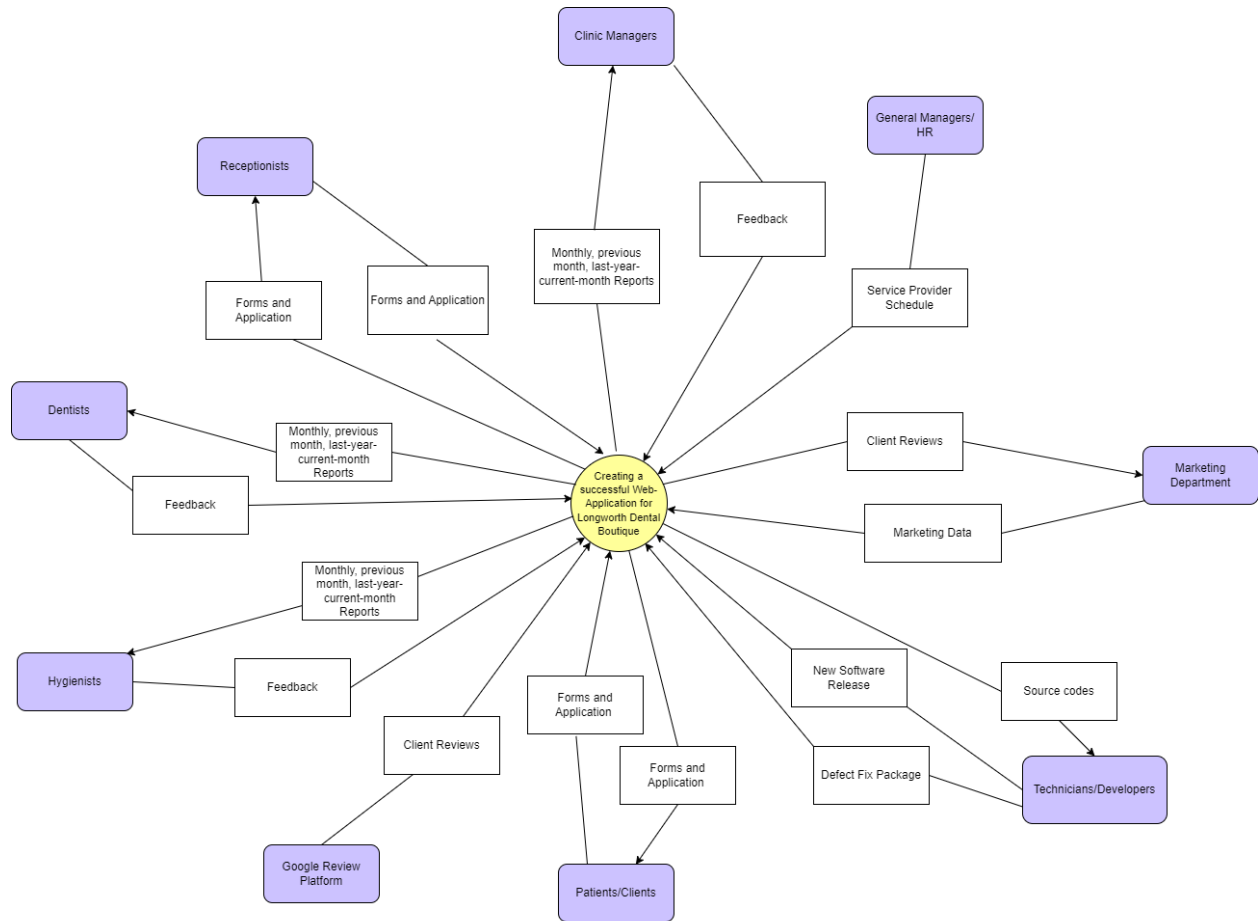


Figure 1: Context Diagram that shows the relationship between the system and all users and adjacent systems - Scope of the Work

Business Data Model

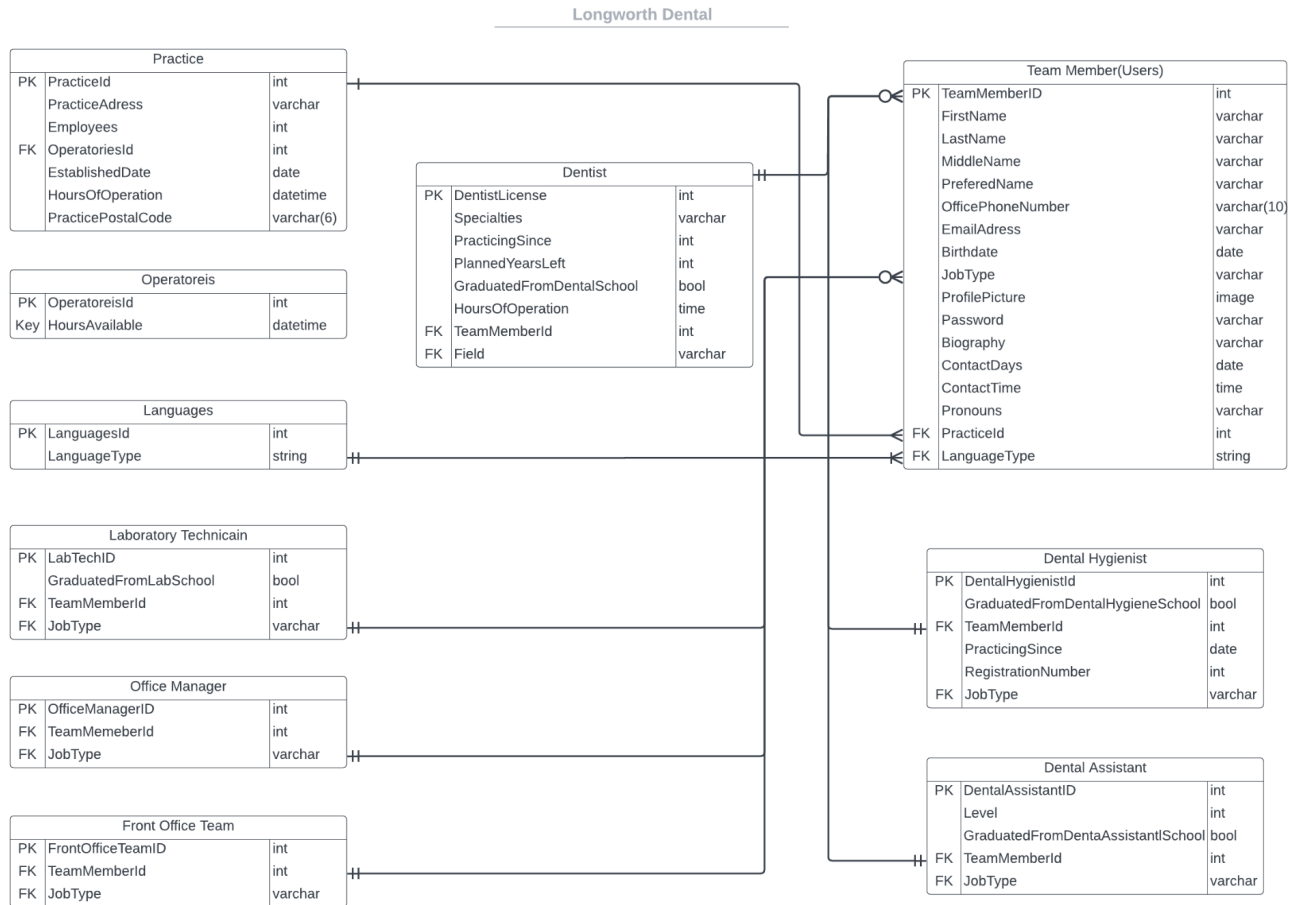


Fig 2: UML Class Diagram of the Longworth Dental for narrowed down scope

Business Events and their Inputs/Outputs

Business Event	Input/Output and Business Use Case
Clinic Managers access and review the Monthly Data, Previous Month's Data and Last Year's Current Month's Data in graphical visualization and tabular form every week.	<i>Output</i> Monthly, Previous Month, Last-year-current-month Report
Clinic Managers make notes, informed decisions and tactics to improve their performance using the metrics	<i>Input</i> Feedback
Clients and Patients receive the forms and applications	<i>Output</i> Forms and Application
Clients and Patients submit completed documents	<i>Input</i> Forms and Application
Dentists review their individual performance metrics	<i>Output</i> Monthly, Previous Month, Last-year-current-month Report
Dentists make notes and tactics to improve their performance	<i>Input</i> Feedback

General Managers/Human Resource Staff Build Service Providers Schedule	<i>Output</i> Service Provider Schedule
Google Review Platform provides Reviews and Feedbacks Information	<i>Input</i> Client Reviews
Hygienists review their individual performance metrics	<i>Output</i> Monthly, Previous Month, Last-year-current-month Report
Hygienists make notes and tactics to improve their performance	<i>Input</i> Feedback
Marketing Staff import the clients/patients' reviews and feedbacks to make informed decisions	<i>Output</i> Client Reviews
Marketing Staff upload marketing tactics, ideas and posters	<i>Input</i> Marketing Data
Receptionists send forms and applications to Clients to fill and send back	<i>Output</i> Forms and Application

Receptionists access and edit the forms and applications	<i>Output</i> Forms and Application
Technicians and developers import source codes	<i>Output</i> Source Codes
Technicians and Developers update and upload new releases	<i>Input</i> New Software Release
Technicians and Developers can Maintain the platform, fix and test the bugs	<i>Input</i> Defect Fix Package

Risk Assessment

The probability of a risk can be low, moderate, or high. The effect of a risk can be insignificant, tolerable, serious, or catastrophic.

Risk: Project has a high scope that might not get completed if requirements had not been reduced

Probability: Moderate

Effect: Moderate

Risk: Teaching the staff how to use and manage the system may be a challenging task.

Probability: Moderate

Effect: Tolerable

Risk: User Permissions are not implemented properly and users from a different department changes values that they should not have access to.

Probability: Moderate

Effect: Serious

Risk: Data related to the business/customer is released without authorization.

Probability: Low

Effect: Catastrophic

Risk: Data gathered may be too little for it to be useful.

Probability: Moderate

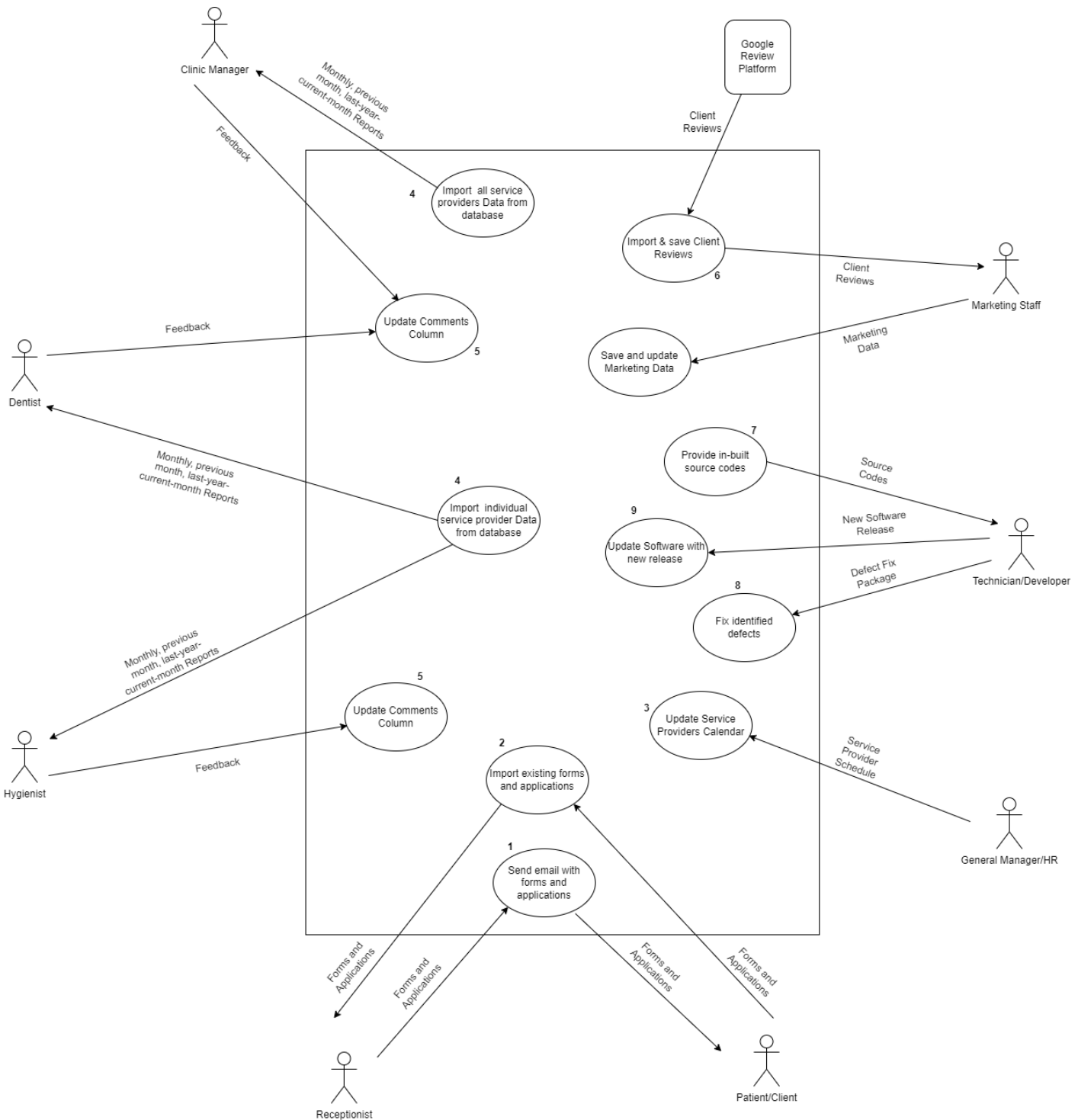
Effect: Serious

Risk: The data that is being displayed is not easily understood by the key and secondary users.

Probability: Moderate

Effect: Serious

Product Use Case Diagram



Product Use Case Scenarios

1. Product Use Case Name: Clinic Manager logs onto the dashboard

Trigger: Clinic Manager opening the web application

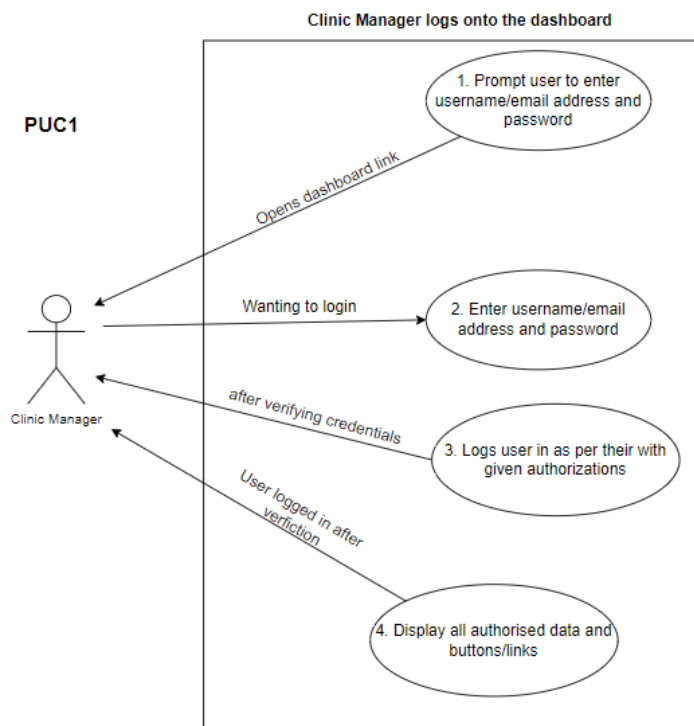
Preconditions: Clinic Manager must have the dashboard link, clinic manager must have access to the dashboard

Interested Stakeholders: Clinic Manager, Dentists, Hygienists

Actor: Clinic Manager

- The product asks clinic manager for their username/email and password
- The Clinic Manager supplies both username/email and password and the product locates the clinic manager's credentials in database
- The product logs the Clinic Manager in according to their "access level"
- The product displays all the data and buttons according to the clinic manager's access level

Outcome: Clinic Manager is logged onto the Dashboard and is able to review all the data



2. Product Use Case Name: Clinic Manager reviews an individual service provider's business and service data

Trigger: Clinic Manager clicks on an individual service provider's name on the side navigation panel

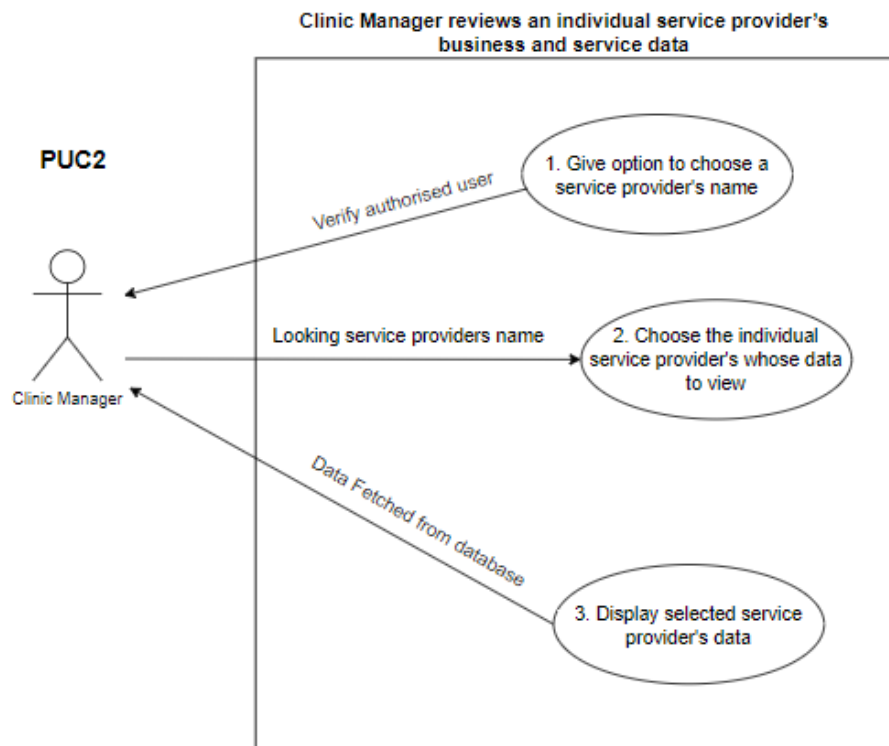
Preconditions: Clinic Manager is logged onto the dashboard, Clinic Manager has the manager (highest) level access

Interested Stakeholders: Clinic Manager, Dentist, Hygienist

Actor: Clinic Manager

- a. Clinic Manager clicks on an individual provider's name on the side navigation panel to look on their data
- b. Product pulls the data of only that particular individual service providers name from the database
- c. The individual service providers name is highlighted on the side navigation panel
- d. Product displays the data of the individual service provider in tabular form

Outcome: Clinic Manager is able to review all the data of the individual service provider through their own user account



3. Product Use Case Name: Clinic Manager reviews the Monthly, Previous Month, Last-year-current-month data

Trigger: Clinic Manager clicked on the visualization button on the top panel

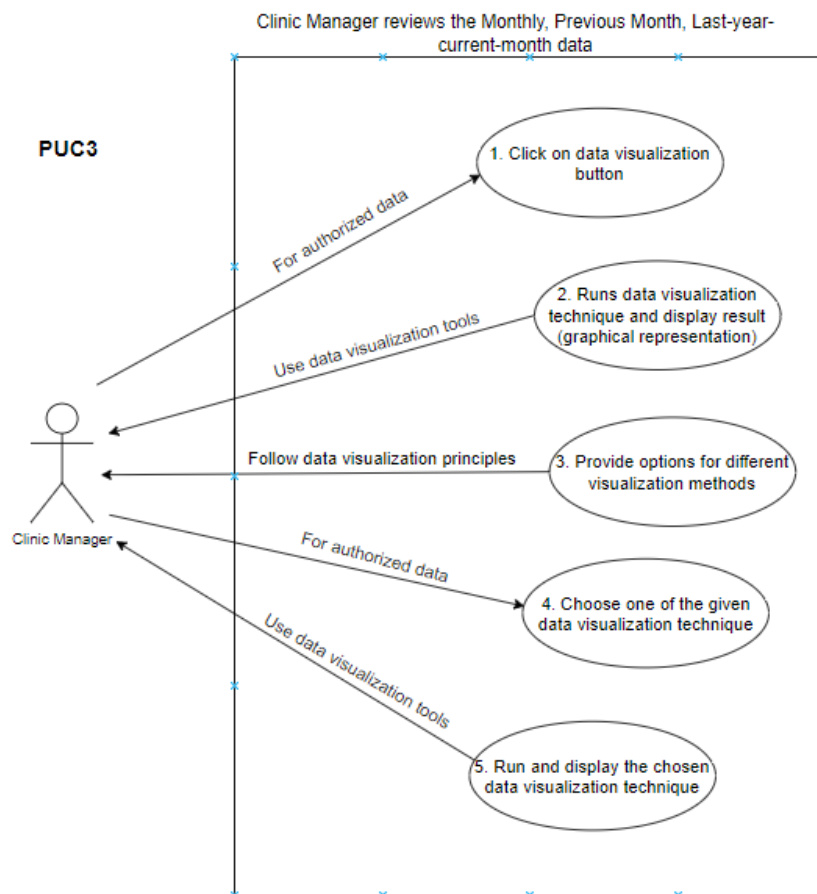
Preconditions: Clinic Manager is logged onto the dashboard

Interested Stakeholders: Clinic Manager, Dentist, Hygienist

Actor: Clinic Manager

- a. Clinic Manager clicked on the visualization button on the side navigation panel
- b. The product fetches the data that was being displayed in tabular format
- c. The product runs the data visualization tool to convert the data table into a data visualization and displays the data as a graphical representation
- d. The product gives option of other data visualization that would provide the most information for data analysis in forms of buttons
- e. Clinic Manager clicks on the other data visualization buttons
- f. The product changes the representation of data according to the chosen data visualization

Outcome: Clinic Manager is able to look at data in various graphical format and make informed decisions



4. **Product Use Case Name:** Clinic Manager makes note and provides feedback

Trigger: Clinic Manager reviewed data and wishes to make note and provide feedback, Clinic Manager clicked on Comments column on the main page

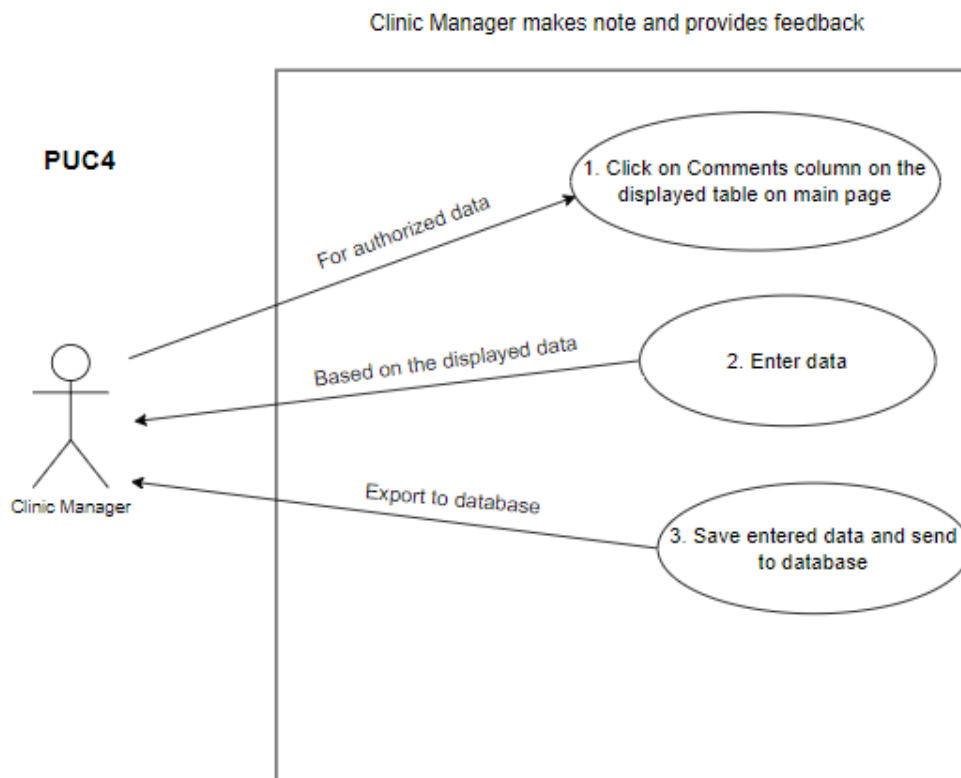
Preconditions: Clinic Manager is logged onto the dashboard, Clinic Manager able to review data properly

Interested Stakeholders: Clinic Manager, Dentist, Hygienist

Actor: Clinic Manager

- a. Clinic Manager clicked on Comments column on the main page
- b. Product allows the Clinic Manager to enter string type data in the field
- c. Clinic Manager finishes entering data and presses enter or presses out of the comments field box
- d. Product sends this newly added data back to the database (SQL)

Outcome: Clinic Manager is able to make notes for an entry and save it globally (in database)



5. Product Use Case Name: Dentist logs into the dashboard

Trigger: Dentist opening the web application

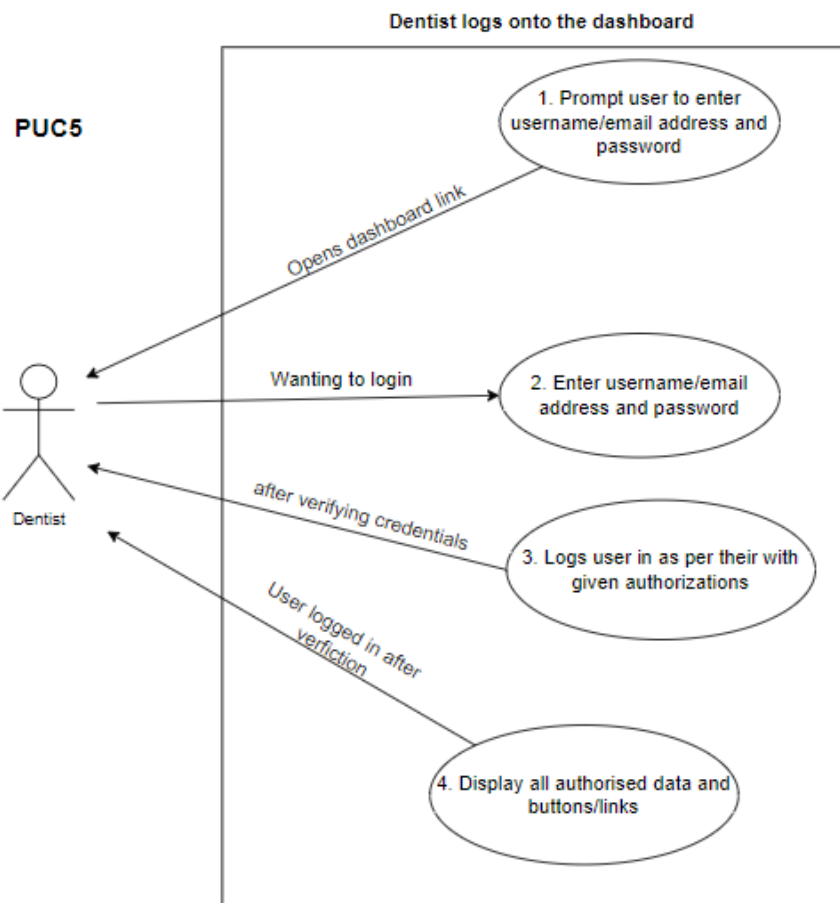
Preconditions: Dentist must have the dashboard link, Dentist must have access to the dashboard

Interested Stakeholders: Dentists, Clinic Manager

Actor: Dentist

- The product asks Dentist for their username/email address and password
- The Dentist supplies both username/email and password and the product locates the dentist's credentials in database
- The product logs the Dentist in according to their "access level"
- The product displays all the data and buttons according to the Dentist's access level

Outcome: Dentist is logged into the Dashboard and is able to review all their individual data.



6. Product Use Case Name: Dentist reviews the Monthly, Previous Month, Last-year-current-month data

Trigger: Dentist clicked on the visualization button on the top panel

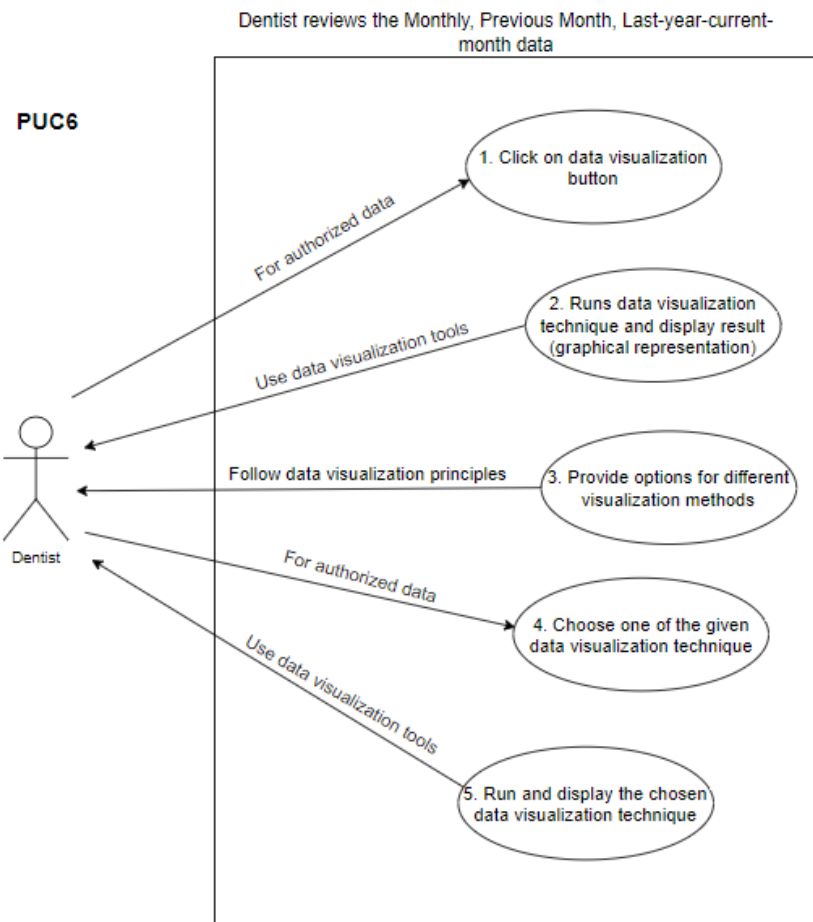
Preconditions: Dentist is logged onto the dashboard

Interested Stakeholders: Dentists, Clinic Manager

Actor: Dentist

- a. Dentist clicked on the visualization button on the side navigation panel
- b. The product fetches the data that was being displayed in tabular format, which is the dentist's individual data in this case
- c. The product runs the data visualization tool to convert the data table into a data visualization and displays the data as a graphical representation
- d. The product gives option of other data visualization that would provide the most information for data analysis in forms of buttons
- e. Dentist clicks on the other data visualization buttons
- f. The product changes the representation of data according to the chosen data visualization

Outcome: Dentist is able to look at their data in various graphical format and make informed decisions



7. Product Use Case Name: Dentist makes note and provides feedback

Trigger: Dentist reviewed data and wishes to make note and provide feedback, Dentist clicked on Comments column on the main page

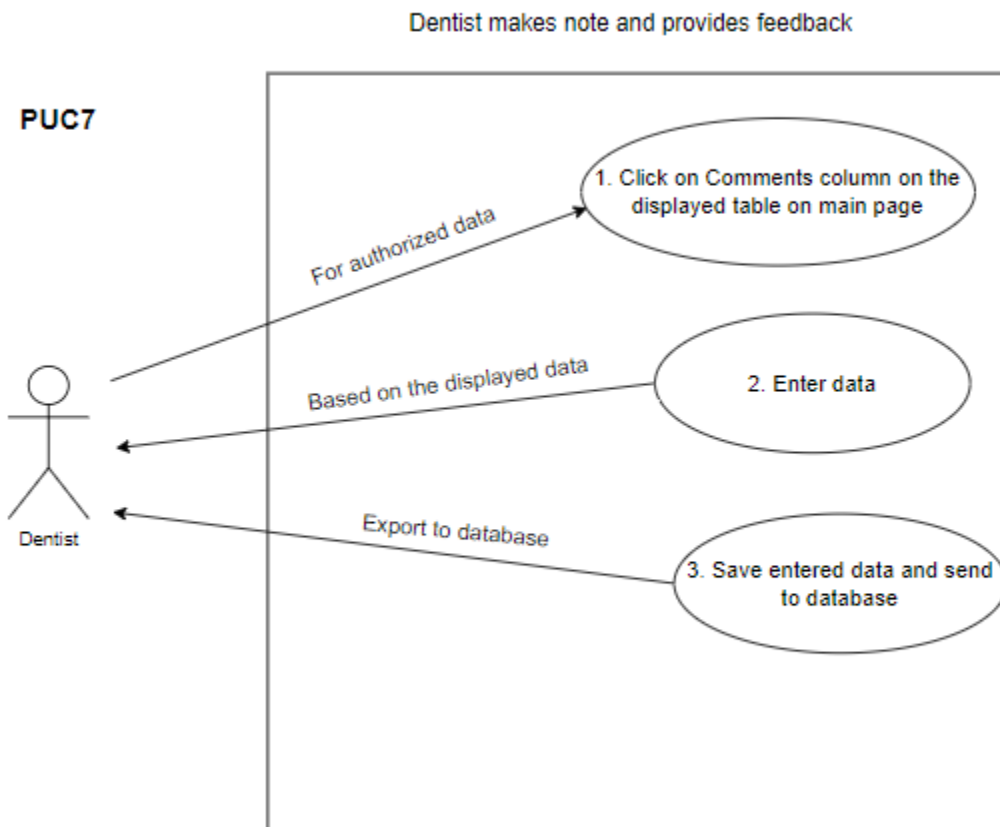
Preconditions: Dentist is logged onto the dashboard, Dentist able to review data properly

Interested Stakeholders: Dentists, Clinic Manager

Actor: Dentist

- a. Dentist clicked on Comments column on the main page
- b. Product allows the Dentist to enter string type data in the field
- c. Dentist finishes entering data and presses enter or presses out of the comments field box
- d. Product sends this newly added data back to the database (SQL)

Outcome: Dentist is able to make notes for an entry and save it globally (in database)



8. Product Use Case Name: Hygienist logs into the dashboard

Trigger: Hygienist opening the web application

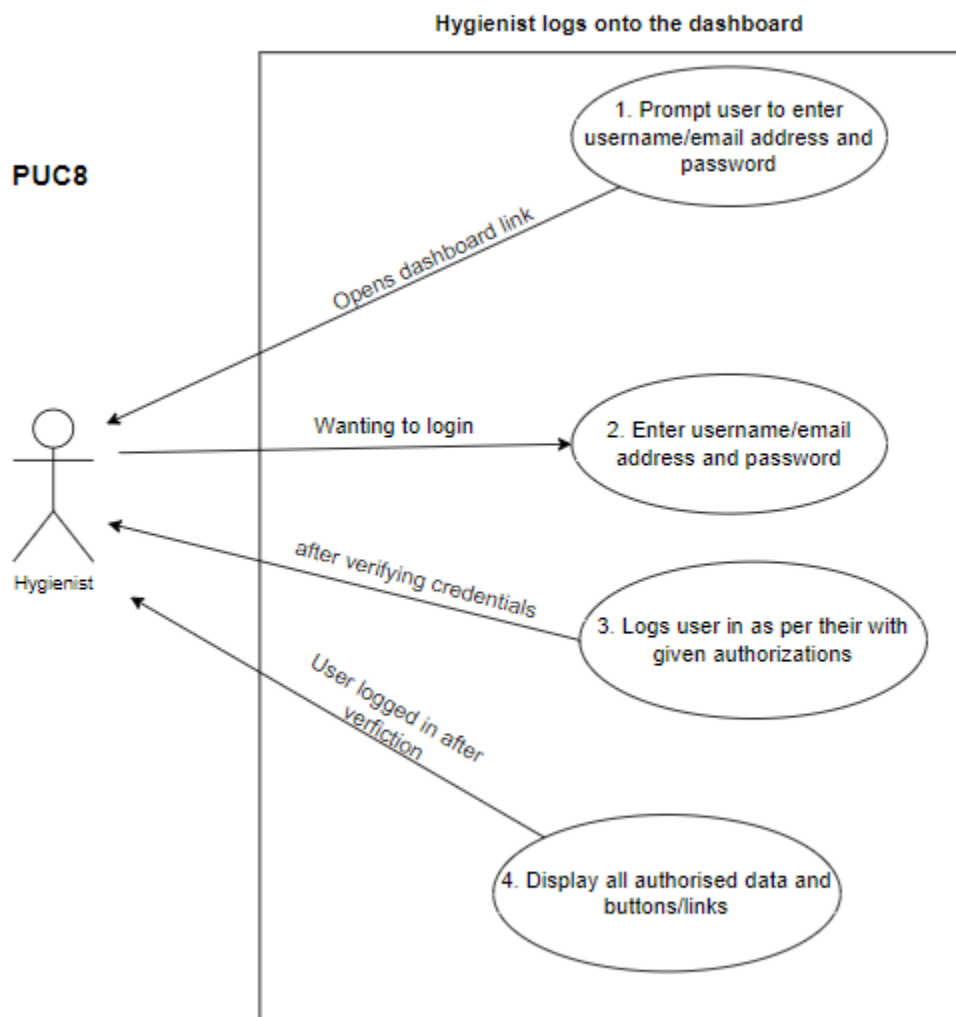
Preconditions: Hygienist must have the dashboard link, Hygienist must have access to the dashboard

Interested Stakeholders: Hygienist , Clinic Manager

Actor: Hygienist

- a. The product asks Hygienist for their username/email address and password
- b. The Hygienist supplies both username/email and password and the product locates the dentist's credentials in database
- c. The product logs the Hygienist in according to their "access level"
- d. The product displays all the data and buttons according to the Hygienist's access level

Outcome: Hygienist is logged into the Dashboard and is able to review all their individual data.



9. Product Use Case Name: Hygienist reviews the Monthly, Previous Month, Last-year-current-month data

Trigger: Hygienist clicked on the visualization button on the top panel

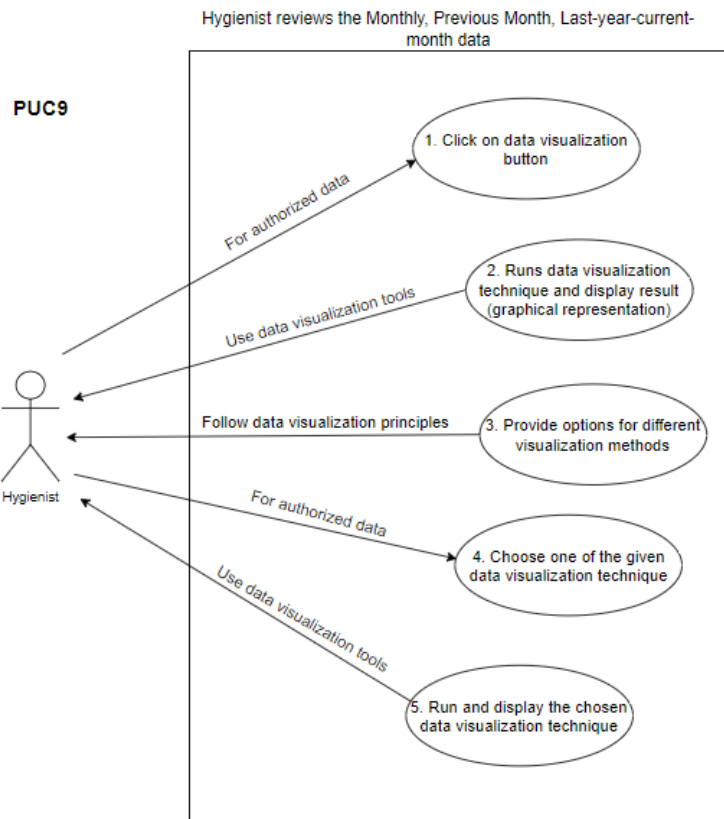
Preconditions: Hygienist is logged onto the dashboard

Interested Stakeholders: Hygienist, Clinic Manager

Actor: Hygienist

- a. Hygienist clicked on the visualization button on the side navigation panel
- b. The product fetches the data that was being displayed in tabular format, which is the hygienist's individual data in this case
- c. The product runs the data visualization tool to convert the data table into a data visualization and displays the data as a graphical representation
- d. The product gives option of other data visualization that would provide the most information for data analysis in forms of buttons
- e. Hygienist clicks on the other data visualization buttons
- f. The product changes the representation of data according to the chosen data visualization

Outcome: Hygienist is able to look at their data in various graphical format and make informed decisions



10. Product Use Case Name: Hygienist makes note and provides feedback

Trigger: Hygienist reviewed data and wishes to make note and provide feedback, Hygienist clicked on Comments column on the main page

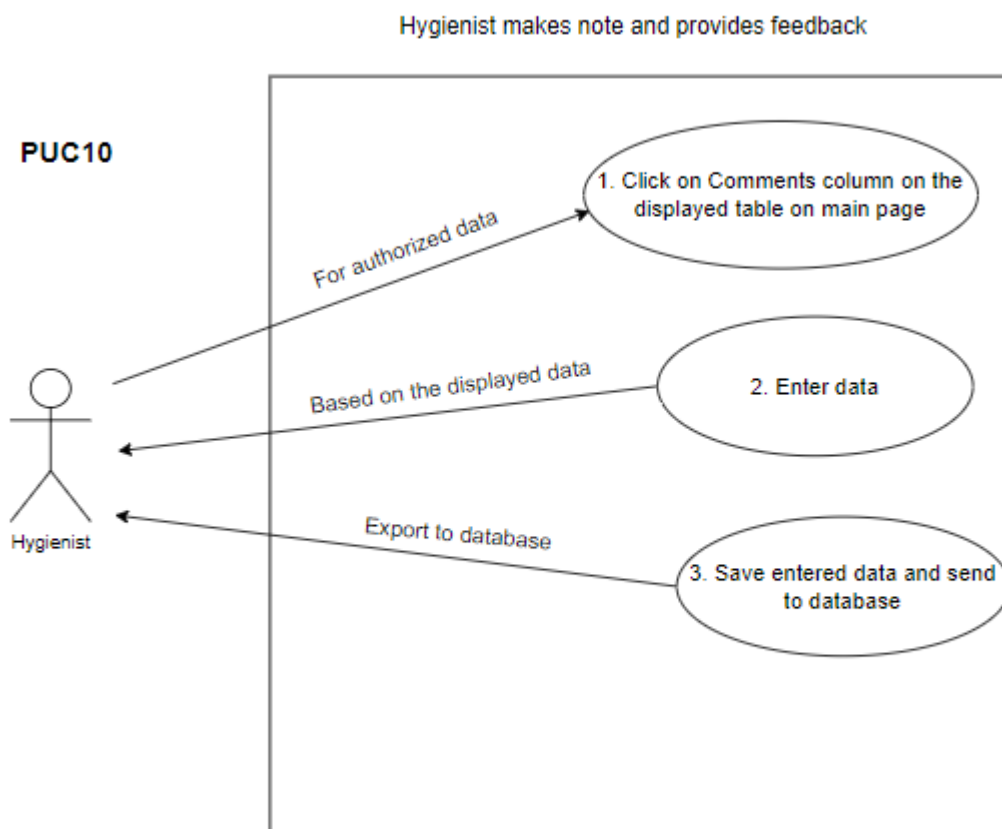
Preconditions: Hygienist is logged onto the dashboard, Hygienist able to review data properly

Interested Stakeholders: Hygienist, Clinic Manager

Actor: Hygienist

- a. Hygienist clicked on Comments column on the main page
- b. Product allows the Hygienist to enter string type data in the field
- c. Hygienist finishes entering data and presses enter or presses out of the comments field box
- d. Product sends this newly added data back to the database (SQL)

Outcome: Hygienist is able to make notes for an entry and save it globally (in database)



11. Product Use Case Name: Receptionist logs into the dashboard

Trigger: Receptionist opening the web application

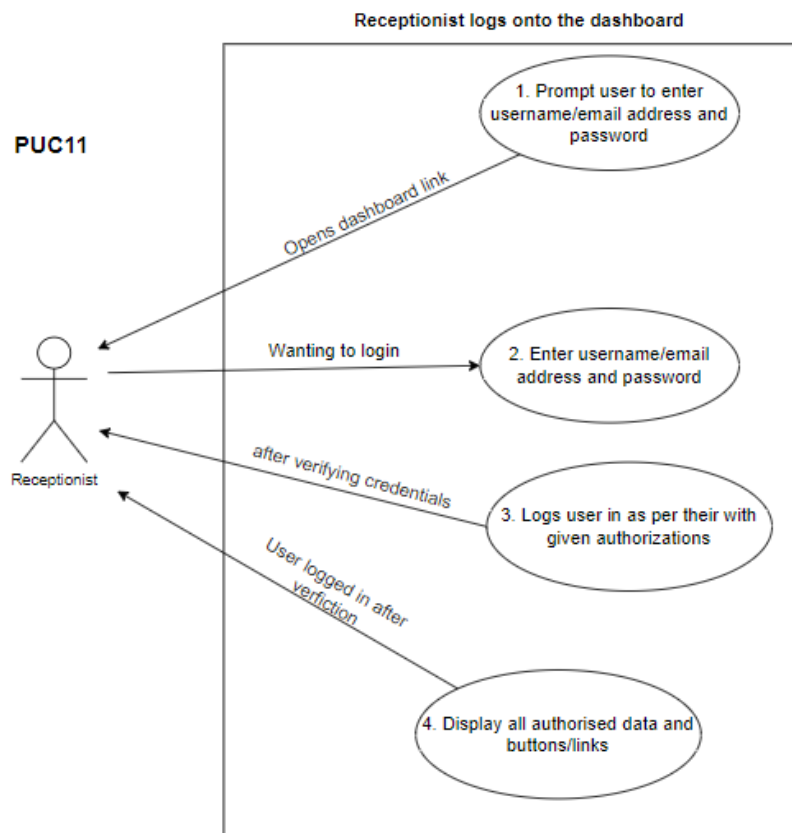
Preconditions: Receptionist must have the dashboard link; Receptionist must have access to the dashboard

Interested Stakeholders: Receptionist, Clinic Managers

Actor: Receptionist

- a. The product asks Receptionist for their username/email address and password
- b. The Receptionist supplies both username/email and password and the product locate the Receptionist's credentials in database
- c. The product logs the Receptionist in according to their "access level"
- d. The product displays all the data and buttons according to the Receptionist's access level

Outcome: Receptionist is logged into the Dashboard and is able to review all their individual data



12. Product Use Case Name: Receptionist adds new client/patient to the system

Trigger: New Client/patient wants to consult with a service provider

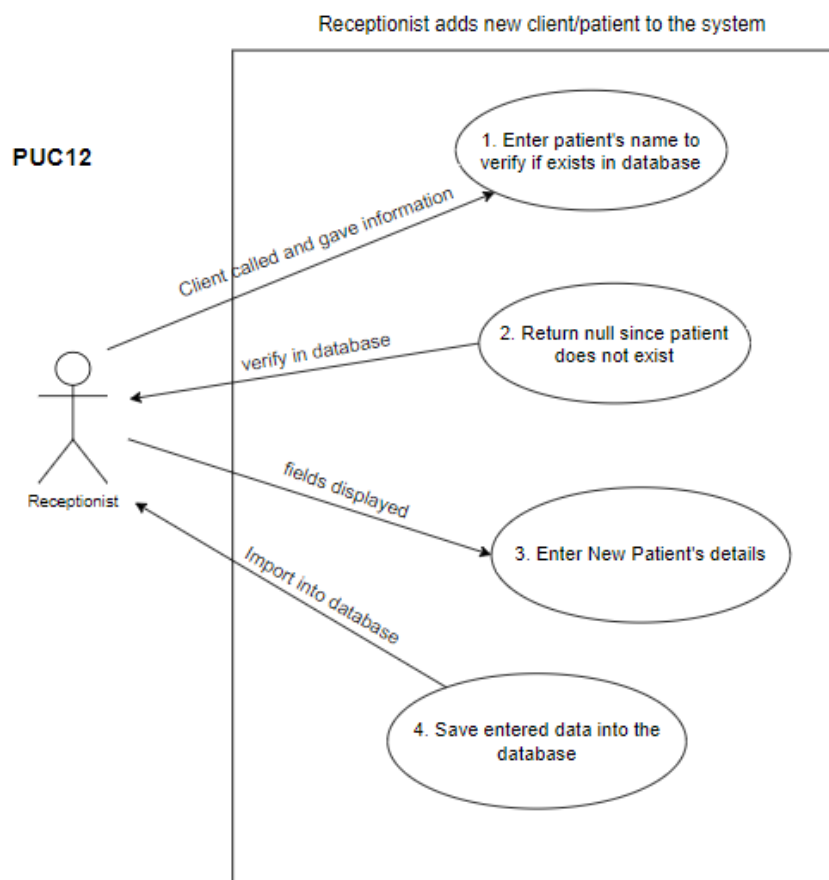
Preconditions: The client/patient does not exist in the system

Interested Stakeholders: Receptionist, New Client/Patient, Clinic Manager

Actor: Client

- a. Client/Patient calls to book an appointment for a consultation with a service provider
- b. Receptionist asks the patient if they are new or existing patient
- c. Client/Patient answers they are new patient
- d. Receptionist asks the client for their name, email and phone number
- e. Client/Patient answers the above information
- f. Receptionist confirms that the patient does not exist in the database
- g. Receptionist adds the Client in the database by clicking on the Add button on the top of the page and entering the asked information
- h. The product adds the information to the database
- i. Client is added to the table

Outcome: New client/patient is added to the database



13. Product Use Case Name: Receptionist sends forms and applications to the Clients/patients to complete and send back

Trigger: Client/ Patient calls to book appointment with a service provider

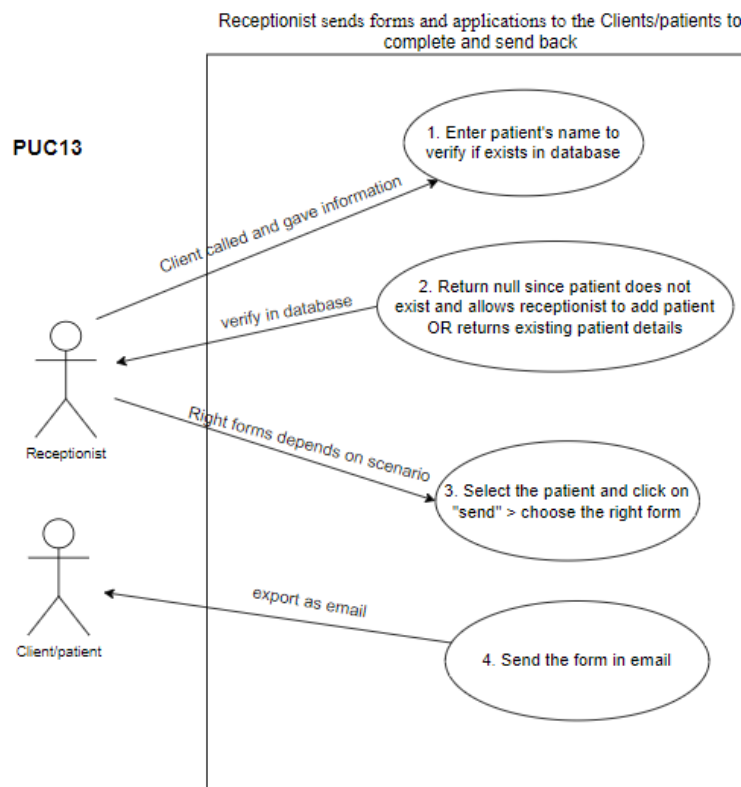
Preconditions: Receptionist has access to the dashboard, Receptionist is logged onto the dashboard, Receptionist has knowledge about the right forms and the procedure

Interested Stakeholders: Client/Patient, Receptionist, Clinic Manager

Actor: Receptionist

- a. Client/Patient calls to book an appointment for a consultation with a service provider
- b. Receptionist asks the patient if they are new or existing patient
- c. Client/Patient answers if they are new patient or existing
- d. Receptionist asks the client for their name, email and phone number
- e. Client/Patient answers the above information
- f. Receptionist confirms if the patient is new or not. If new then the receptionist adds the new patient. If not then Receptionist pulls up the patient details
- g. Receptionist selects the added patient and clicks on the send button on top panel, chooses the right forms, and press send
- h. The product sends the email to the patient with the forms for them to fill out

Outcome: The Receptionist is able to send forms and applications to the patients to fill before their appointment



14. Product Use Case Name: Receptionists access and edit the forms and applications
Trigger: The existing forms and applications needs to be edited with changing business requirements

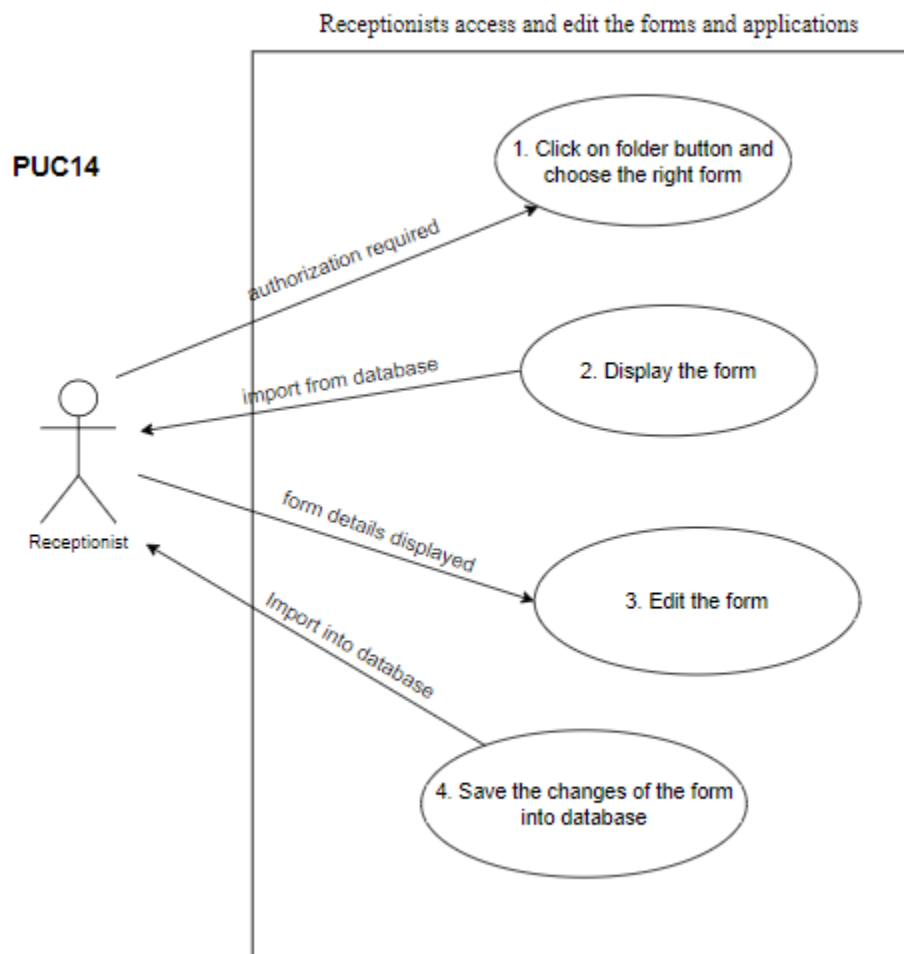
Preconditions: Receptionist has access to the dashboard, Receptionist is logged onto the dashboard

Interested Stakeholders: Receptionist, Clinic Manager

Actor: Receptionist

- a. Clinic Manager informs Receptionist about the changes to be applied in the forms and applications
- b. Receptionist clicks on the folder button on the left navigation panel
- c. The product displays the folder contents - all the forms and applications
- d. Receptionist chooses the form to edit and clicks on the edit button on the top panel
- e. The product changes from viewer mode to edit mode
- f. Receptionist makes the necessary changes and hits Save
- g. The product saves the new changes

Outcome: Receptionist is able to edit forms and applications on the dashboard



15. Product Use Case Name: General Managers/HR logs onto the dashboard

Trigger: General Managers/HR opening the web application

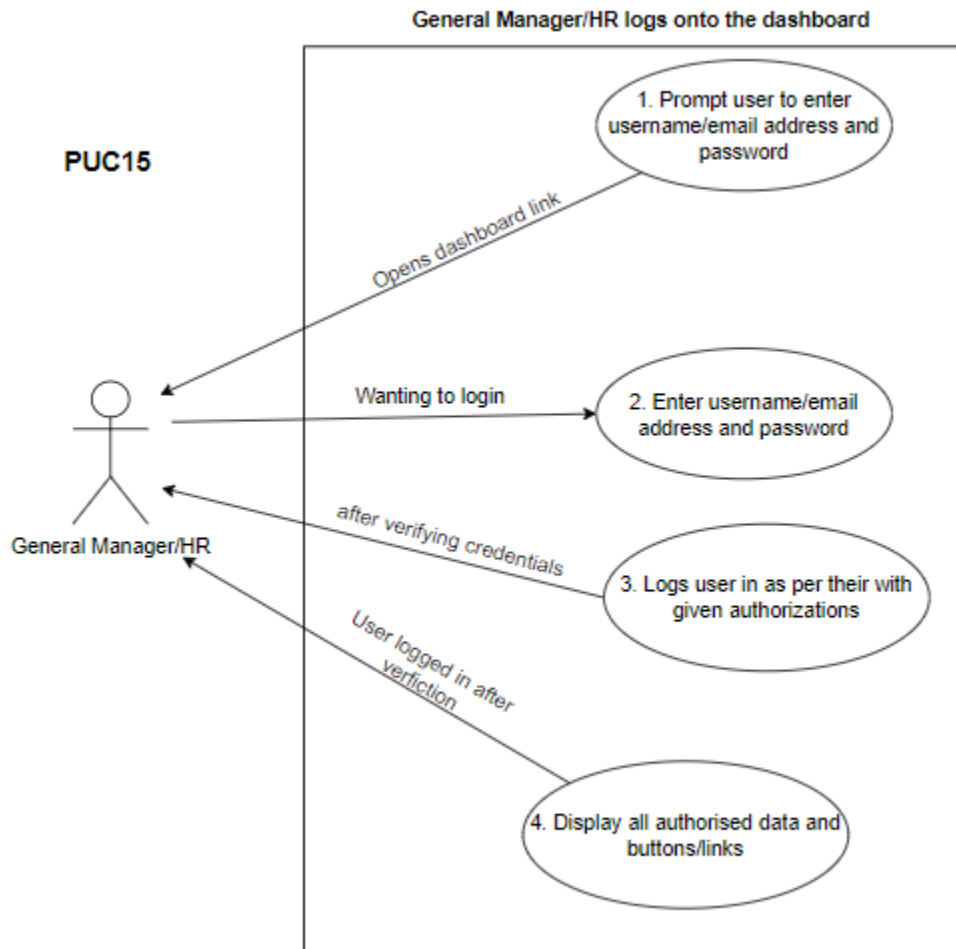
Preconditions: General Managers/HR must have the dashboard link, General Managers/HR must have access to the dashboard

Interested Stakeholders: General Managers/HR, Clinic Manager

Actor: General Managers/HR

- a. The product asks General Managers/HR for their username/email address and password
- b. The General Managers/HR supplies both username/email and password and the product locates the General Managers/HR's credentials in database
- c. The product logs the General Managers/HR in according to their "access level"
- d. The product displays all the data and buttons according to the General Managers/HR's access level

Outcome: General Managers/HR is logged into the Dashboard and is able to review all their individual data.



16. Product Use Case Name: General Managers/HR builds service providers schedule

Trigger: All new appointments have been added and it's time to build schedule

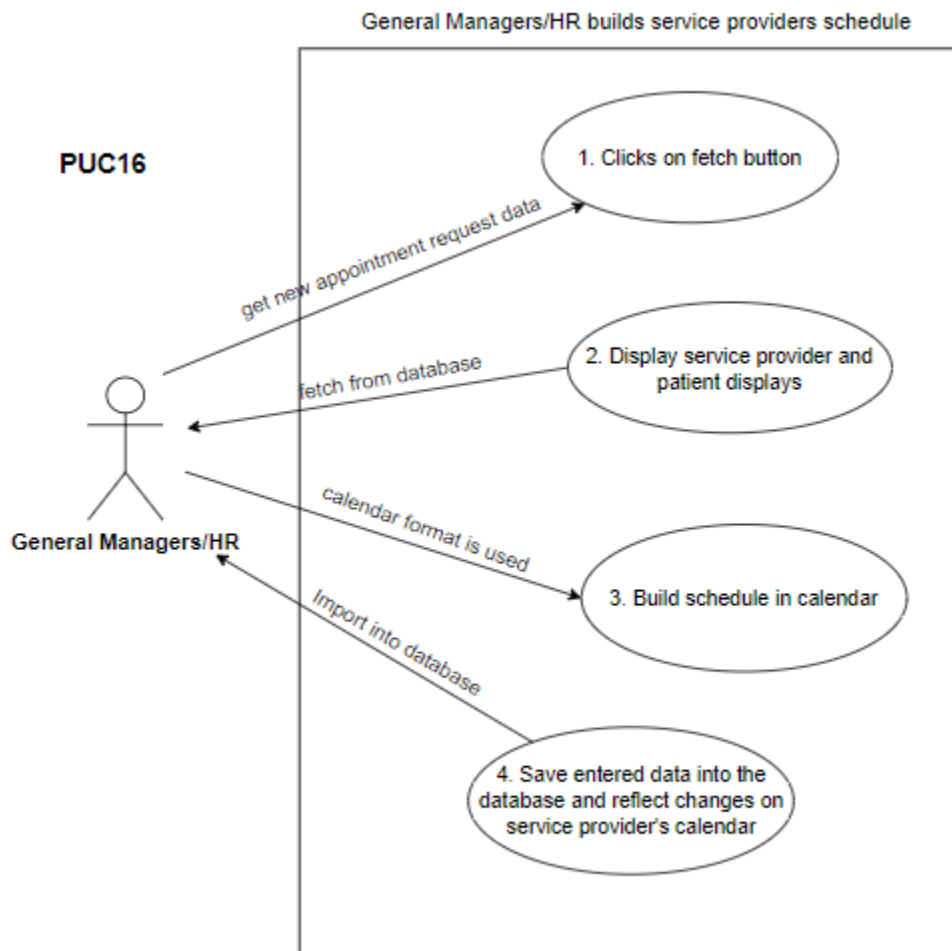
Preconditions: General Managers/HR has access to the dashboard

Interested Stakeholders: General Managers/HR, Dentist, Hygienists, Clients/Patients, Clinic Managers

Actor: General Managers/HR

- a. General Managers/HR clicks on the 'fetch' button
- b. The product fetches all the information about new clients/patients who needs appointment for next week
- c. General Managers/HR presses on the calendar button
- d. The product displays the calendar view with all service providers name on the left side as a new window
- e. General Managers/HR build the schedule as per the information gathered
- f. The product saves all information globally in the calendar
- g. Everyone is able to view this calendar in their personal/individual user account

Outcome: General Managers/HR are able to build the schedule for the service providers



17. Product Use Case Name: Marketing Dept Staff logs into dashboard

Trigger: Marketing Dept Staff opening the web application

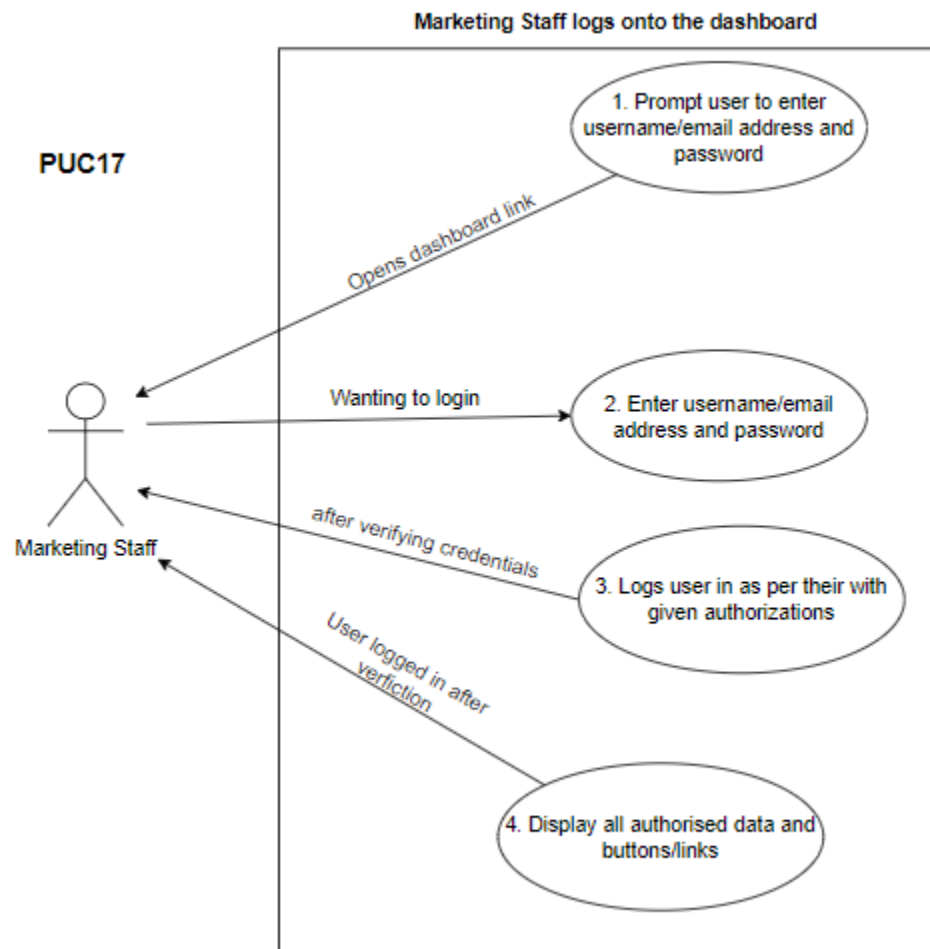
Preconditions: Marketing Staff must have the dashboard link, Marketing Staff must have access to the dashboard

Interested Stakeholders: Marketing Staff, Clinic Manager

Actor: Marketing Staff

- a. The product asks the Marketing Staff for their username/email address and password
- b. The Marketing Staff supplies both username/email and password and the product locates the Marketing Staff's credentials in the database
- c. The product logs in the Marketing Staff according to their "access level"
- d. The product displays all the data and buttons according to the Marketing Staff's access level

Outcome: Marketing Staff is logged onto the dashboard and is able to review all their individual data



18. Product Use Case Name: Marketing Dept Staff import the clients/patients' reviews and feedbacks to make informed decisions

Trigger: Marketing Staff clicking on the review button

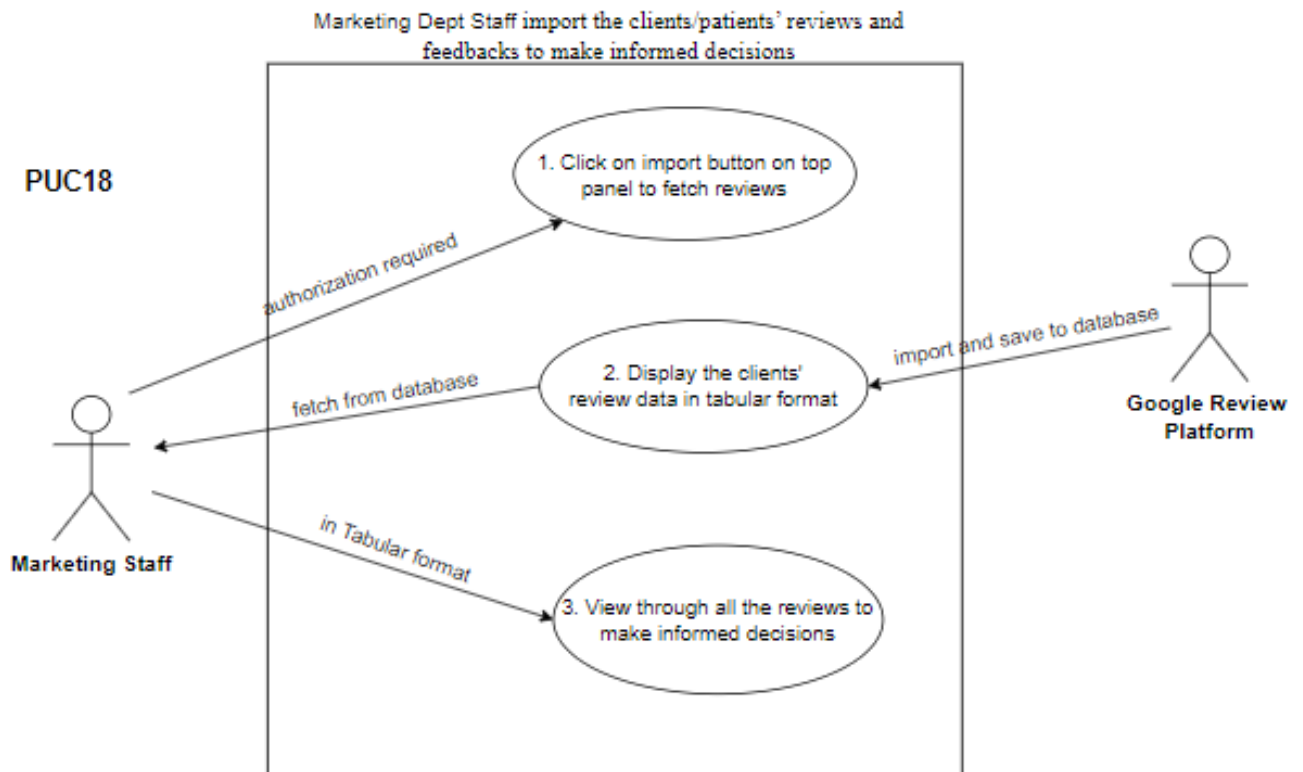
Preconditions: Marketing Staff must have access to dashboard, product is able to import data from google review

Interested Stakeholders: Marketing Staff, Clinic Manager

Actor: Marketing Staff

- a. Marketing Staff clicks on the import button on the top panel
- b. The product connects to the Google Review platform and fetches all the reviews on the business and displays as a tabular format on the dashboard
- c. Marketing Staff is able to scroll through all reviews and make informed decisions

Outcome: Marketing Staff is able to look through all the reviews of the business



19. Product Use Case Name: Marketing Dept Staff upload marketing tactics, ideas, posters

Trigger: Marketing Staff looked through the google reviews about the business

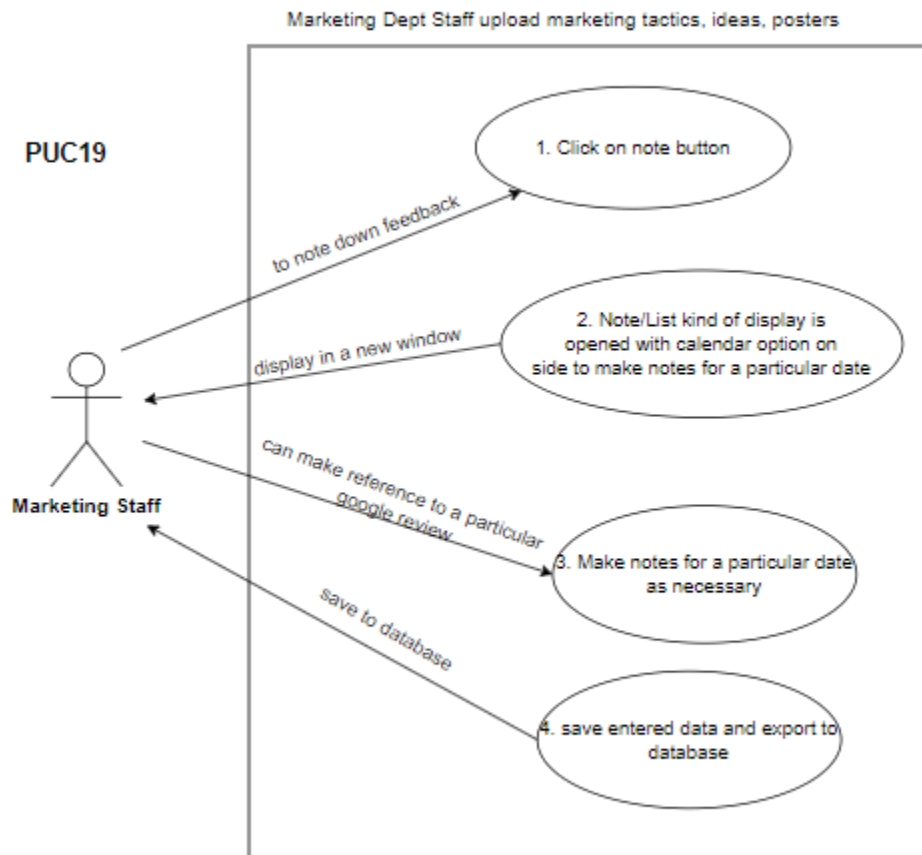
Preconditions: Marketing Staff has access to the dashboard, Marketing Staff is logged into dashboard, product is able to import data from google review

Interested Stakeholders: Marketing Dept, Clinic Managers

Actor: Marketing Staff

- a. Marketing Staff clicks on the note button on the side navigation panel
- b. Product opens the list kind of display in a new window with a calendar on the side navigation panel
- c. Marketing Staff is able to note down their thoughts, marketing tactics as they review the client feedbacks on the main page
- d. Marketing Staff is able to choose another date from the calendar on the side panel to look at their notes from another day
- e. The product saves the note under the current day's date into the database

Outcome: Marketing Staff is able to upload marketing tactics, ideas and posters on the dashboard



20. Product Use Case Name: Patients/Clients receive forms and applications in email

Trigger: Client/Patient wants to book an appointment with a service provider

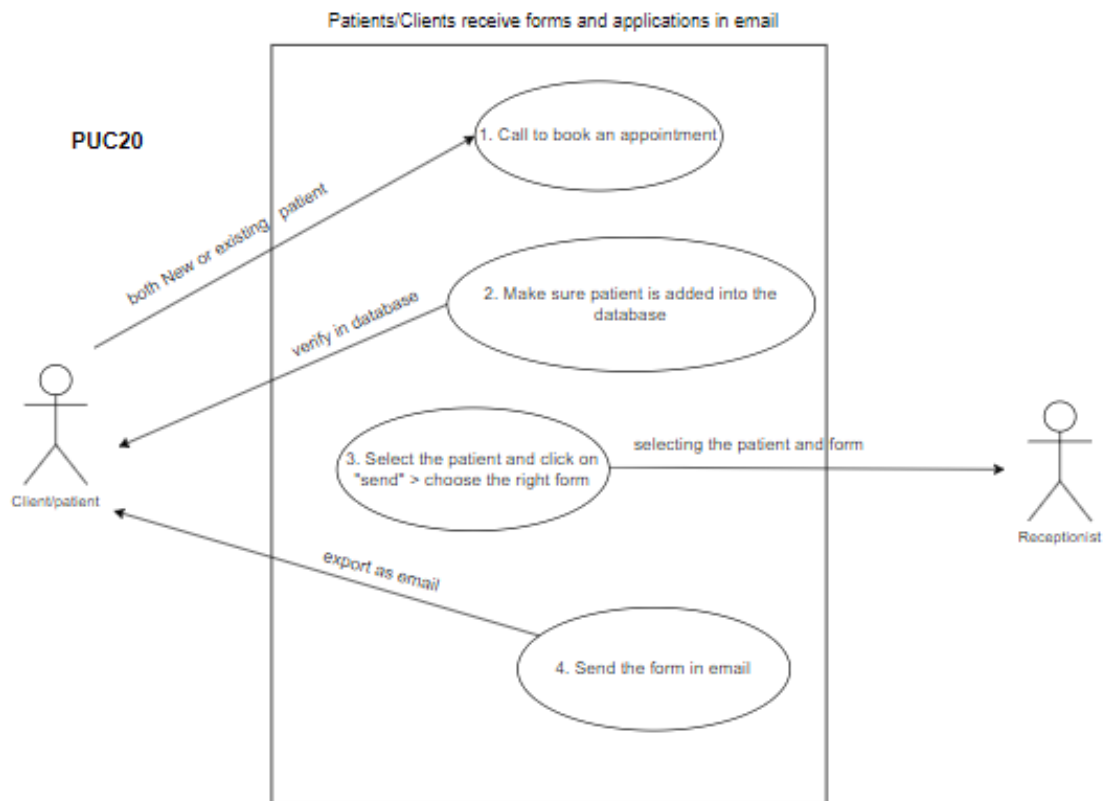
Preconditions: Receptionist is able to access dashboard

Interested Stakeholders: Client/patients, receptionist, dentist, hygienist, clinic manager

Actor: Client/Patient

- a. Client/Patient calls the clinic to book an appointment
- b. Receptionist asks for details and send the forms and application
- c. Product functions on the receptionist's side and sends the Client/Patient an email with the correct form
- d. The Client/Patient receives email with the forms and application to be filled out

Outcome: The Client/Patient receives an email with the forms and application when booking a new appointment



21. Product Use Case Name: Patients/Clients send completed forms and applications back

Trigger: Client/Patient wants to book an appointment with a service provider

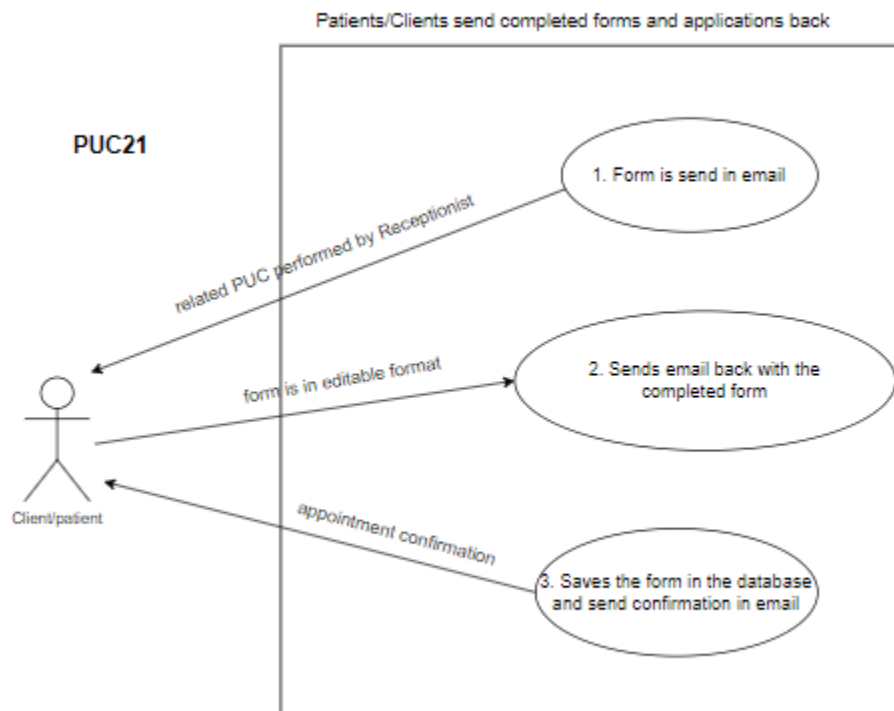
Preconditions: Receptionist is able to access dashboard, Client/Patient received email with the forms and applications

Interested Stakeholders: Client/patients, receptionist, dentist, hygienist, clinic manager

Actor: Client/Patient

- a. The Client/Patient receives email with the forms and application to be filled out
- b. Client/Patient is able to edit the forms and application and send it back to the email address they received it from
- c. Product sends a notification to the Receptionist's account
- d. Receptionist is able to see the forms and email on the dashboard

Outcome: Patients/Clients send completed forms and applications back



22. Product Use Case Name: Technicians/Developers deploys defects fix package

Trigger: Defects were identified by clinic manager

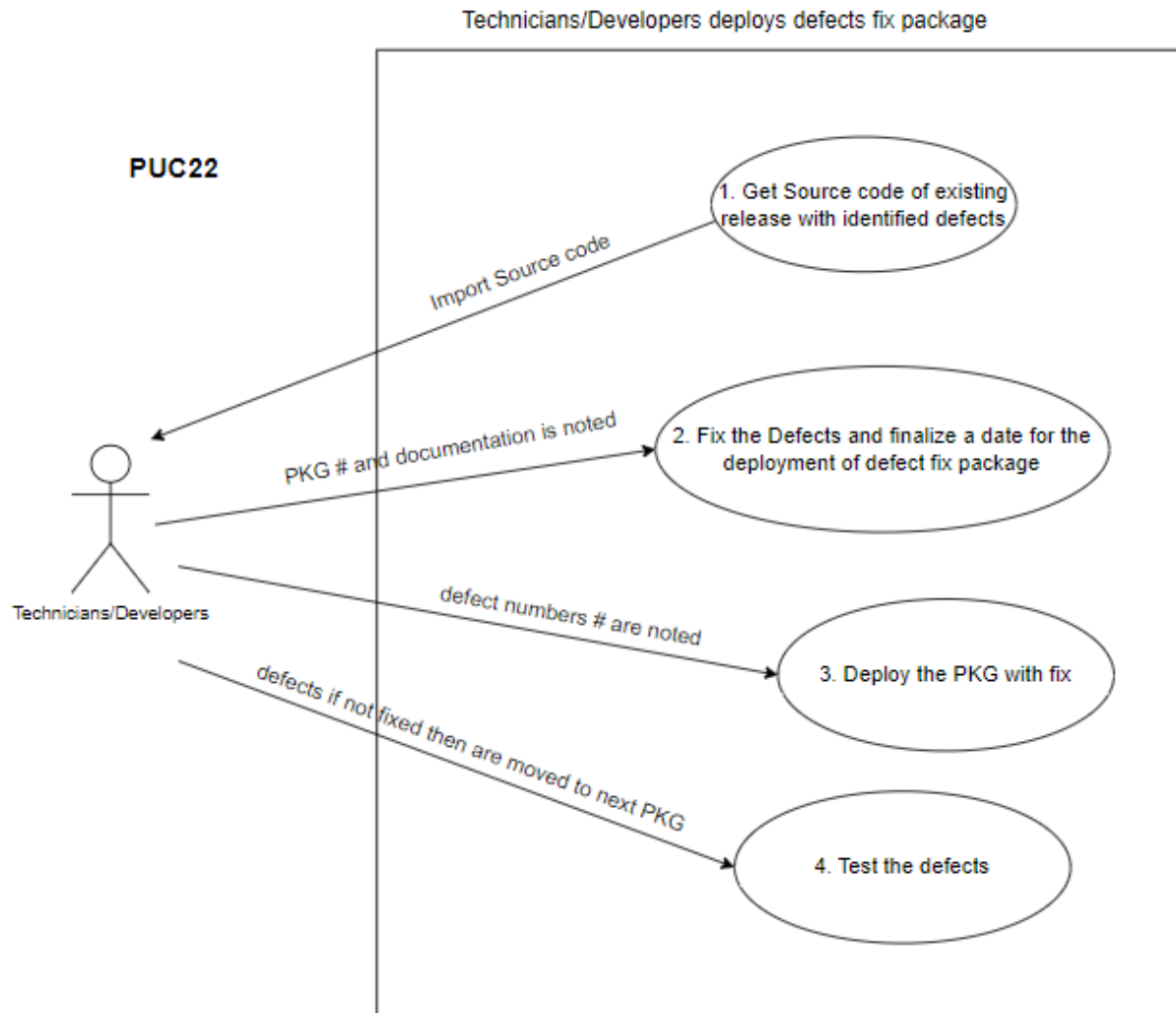
Preconditions: Technician/Developers received all the defects from clinic manager, Technician/Developers were able to fix the defects

Interested Stakeholders: Technician/Developers, Clinic Manager

Actor: Technician/Developers

- a. Technician/Developers received defect list form the Clinic Manager
- b. Technician/Developers were able to fix the defects
- c. Technician/Developers tested the source code in TEST environment
- d. A set date and time was fixed after discussion with Clinic Manager to deploy the fix package
- e. Technician/Developers deploy the source code with the fix to the software
- f. Technician/Developers test the newly deployed source code
- g. The software is updated across the business for all team members

Outcome: The product has updated software with all the existing defects fixed



23. Product Use Case Name: Technicians/Developers uploads new software release

Trigger: Clinic Manager wants new features in the product software

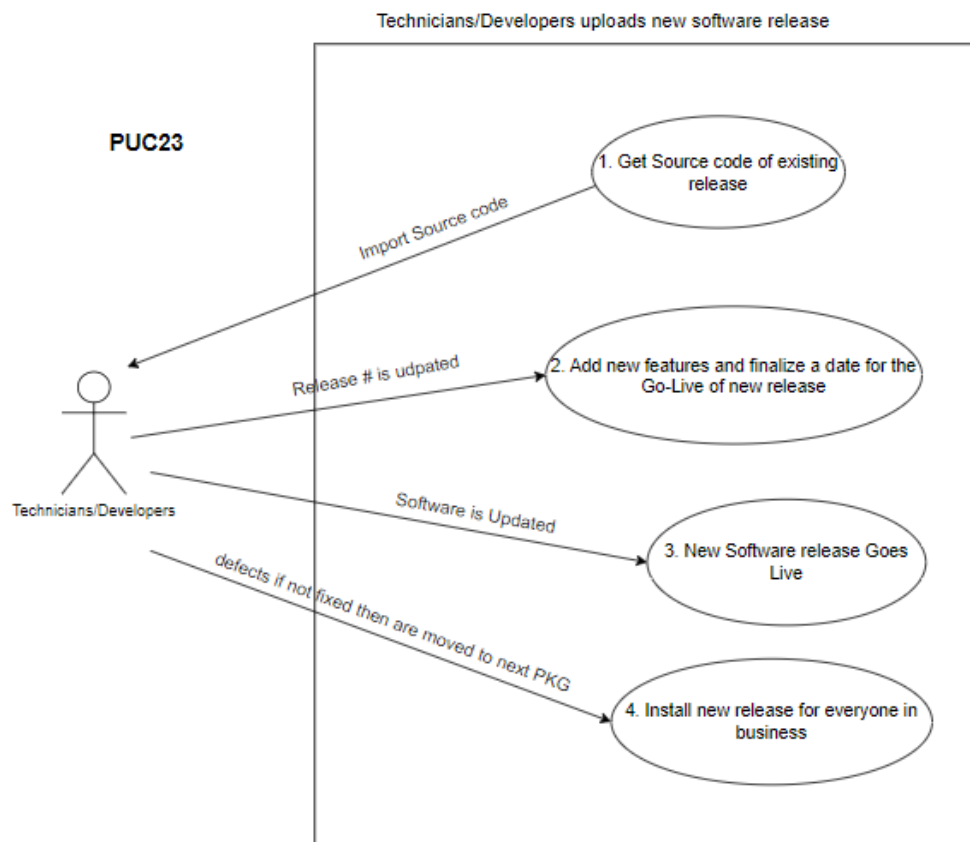
Preconditions: Technician/Developers received all the requirements from clinic manager, Technician/Developers were able to create the source for the new features

Interested Stakeholders: Technician/Developers, Clinic Managers, Dentists, Hygienists, Receptionist, Marketing Staff, General Manager/HR

Actor: Technician/Developers

- a. Technician/Developers received the list of new features and requirements from the clinic manager
- b. Technician/Developers were able to build the source code for these new features
- c. Technician/Developers tested the source code in TEST environment
- d. A set date and time was fixed after discussion with Clinic Manager to deploy the new release
- e. Technician/Developers deploy the source code of the new Software release
- f. Technician/Developers test the newly deployed source code
- g. The software is updated across the business for all team members

Outcome: The product has updated software with new release that applied new features



Non-Functional Requirements

Look and Feel Requirements

Requirement #: 1

Description: The product should be compliant with the branding standards of the client's business

Rationale: The product is going to be owned by the business and used by everyone in the business

Source: Requirement meeting with client

Fit Criterion: The product shall be certified as complying with this year's business's branding standards by the head of communications

Customer Satisfaction: 3

Customer Dissatisfaction: 3

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Requirement #: 2

Description: The product has an expensive appearance and is pleasing to eyes

Rationale: The employees will be using this product 90% of the work day and should feel motivated to keep working

Source: Discussion about web design with client

Fit Criterion: The product can be used 20 minutes continuously without feeling strain on eyes (as per office ergonomics rules)

Customer Satisfaction: 4

Customer Dissatisfaction: 3

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Usability and Humanity Requirements

Requirement #: 3

Description: The product shall be intuitive and easy to train

Rationale: The business employees must find it easy and intuitive; otherwise they will not use it

Source: Requirement meeting with client

Fit Criterion: The business employees must be able to reduce their time previously wasted on finding documents and details by 30%

Customer Satisfaction: 3

Customer Dissatisfaction: 2

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Requirement #: 4

Description: The product shall provide the preferred way of working for the personnel

Rationale: To build the personnel's confidence in the product

Source: Discussion about various user types

Fit Criterion: 70% of the personnel shall switch to using the product after a 4-week familiarization period

Customer Satisfaction: 3

Customer Dissatisfaction: 4

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Performance Requirements

Requirement #: 5

Description: The response should be fast enough to avoid interrupting user's flow of thought

Rationale: The product is going to be used to track business data and make informed decision for the business

Source: Discussion about efficiency of the product

Fit Criterion: The response time shall be no more than 0.5 second for 95% of responses, and no more than 2 seconds for remainder

Customer Satisfaction: 3

Customer Dissatisfaction: 3

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Requirement #: 6

Description: The product shall accommodate large database of patient details

Rationale: To allow business employees to easily look up historical data as well as current data

Source: Discussion about data visualization of current data being compared to last year's data

Fit Criterion: The product should be able to fetch and display rows of patients without trouble from the database

Customer Satisfaction: 4

Customer Dissatisfaction: 5

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Requirement #: 7

Description: The product shall be available during all weekdays

Rationale: There should not be any maintenance activity interrupting in the clinic's activity

Source: Discussion about the product's usage

Fit Criterion: The business is able to utilize the product at least 95% of the week without interruption

Customer Satisfaction: 5

Customer Dissatisfaction: 5

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Operational and Environmental Requirements

Requirement #: 8

Description: The product shall be used during bad weather like rainstorms, snow, and freezing conditions

Rationale: The business employees must be able to continue working despite bad weather

Source: Discussion about tech stack of the product

Fit Criterion: The product shall not have network connection issues from its side

Customer Satisfaction: 3

Customer Dissatisfaction: 4

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Maintainability and Support Requirements

Requirement #: 9

Description: The product shall have quick maintain response time

Rationale: The business employees must not face long interruptions in their work

Source: Discussion about the product's user types

Fit Criterion: The mean time to restore the system must not be greater than 10 minutes

Customer Satisfaction: 4

Customer Dissatisfaction: 4

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Security Requirements

Requirement #: 10

Description: The product should ensure only authorized users have access to the patient's data

Rationale: The product contains patient private and confidential information

Source: Discussion about the product's data

Fit Criterion: The confidential information shall only be accessed by authorized users

Customer Satisfaction: 5

Customer Dissatisfaction: 5

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Requirement #: 11

Description: The product shall prevent all personal and confidential patient's data from being printed

Rationale: The leakage of this data will have catastrophic effect

Source: Discussion about the type of data

Fit Criterion: The product shall deliver data in a manner than prevents further or second-hand use by unauthorized people

Customer Satisfaction: 5

Customer Dissatisfaction: 5

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Cultural Requirements

Requirement #: 12

Description: The product shall not be offensive to any religion or ethnic group

Rationale: To respect users of all ethnicities, cultures, races and religions

Source: Patient Data includes personal details

Fit Criterion: The product shall not display any religious symbols or words associated with mainstream religions and also not show any favoritism, bias or discrimination against any particular demographic group

Customer Satisfaction: 4

Customer Dissatisfaction: 4

Dependencies: None

Conflicts: None

Supporting Materials: Work Context Diagram

History: Created October 21, 2022

Legal Requirements

Requirement #: 13

Description: The product should be fully compliant with the privacy laws of Canada

Rationale: The product should not violate any laws and maintain privacy for the comfort of users

Source: Discussion about type of data product includes

Fit Criterion: The product shall meet all required guidelines set by the Government of Canada when dealing with patient's details/data

Customer Satisfaction: 5

Customer Dissatisfaction: 5

Dependencies: None

Conflicts: None

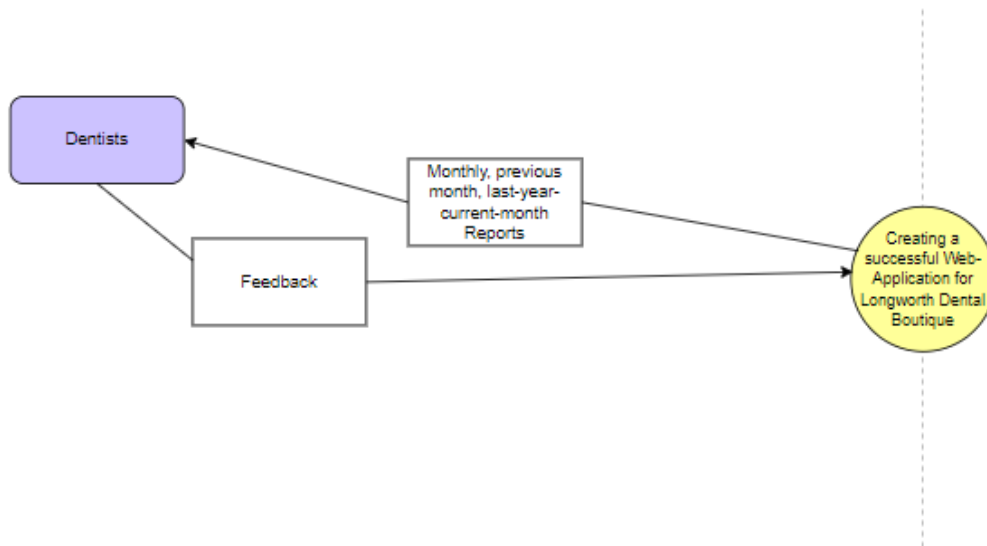
Supporting Materials: Criminal Code of Canada, Work Context Diagram

History: Created October 21, 2022

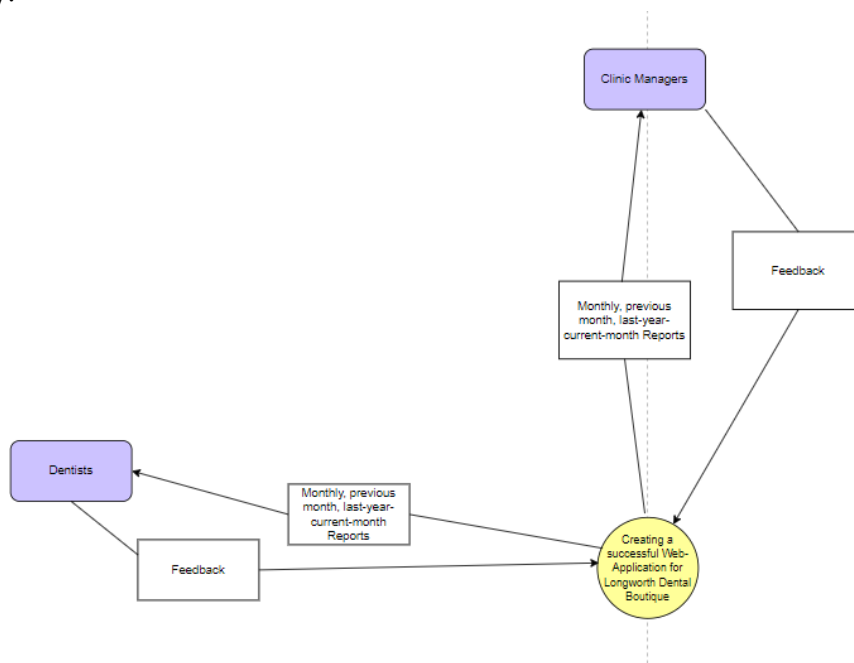
(Not part of the official document. Just a note to Prof)

Narrowed Down Scope/Requirements

This project has a large scope that can't be completed successfully within 8 months. After a discussion with the client, we have decided on a narrowed down scope.



Followed by:



This is because Dentist's Data are a part of Clinic Managers Data. So if successfully implemented, that would also be easy to implement.