FIT5032 Design Report

Major Application Development

High Distinction

Tamrul General Practice Innovations

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Contents

Web Application Title and Description

Title

Tamrul General Practice Innovations

Description

Online Booking System for Large General Practice Clinic. Customers can contact reception staff, who fill out a meeting between the client and the doctor. Reception staff have the highest level of security, doctors have the next step down, and then patients have little to nothing. Patients can login to their booking number and date and cancel/move the appointment. The website also allows patients to lookup location and opening times of the clinic.

User Stories and Use Case Diagram

User Stories

(All portraits generated using AI on generated.photos)

As an aging father, I want to be able to have a history of all of my past doctor's certificates so that my and my children's financial wellbeing aren't on the line if my employer ever asks for a forgotten doctor's appointment.

(https://generated.photos/face/neutral-white-middle-aged-male-with-short-brown-hair-and-brown-eyes--5e6888dd6d3b380006f21a91)

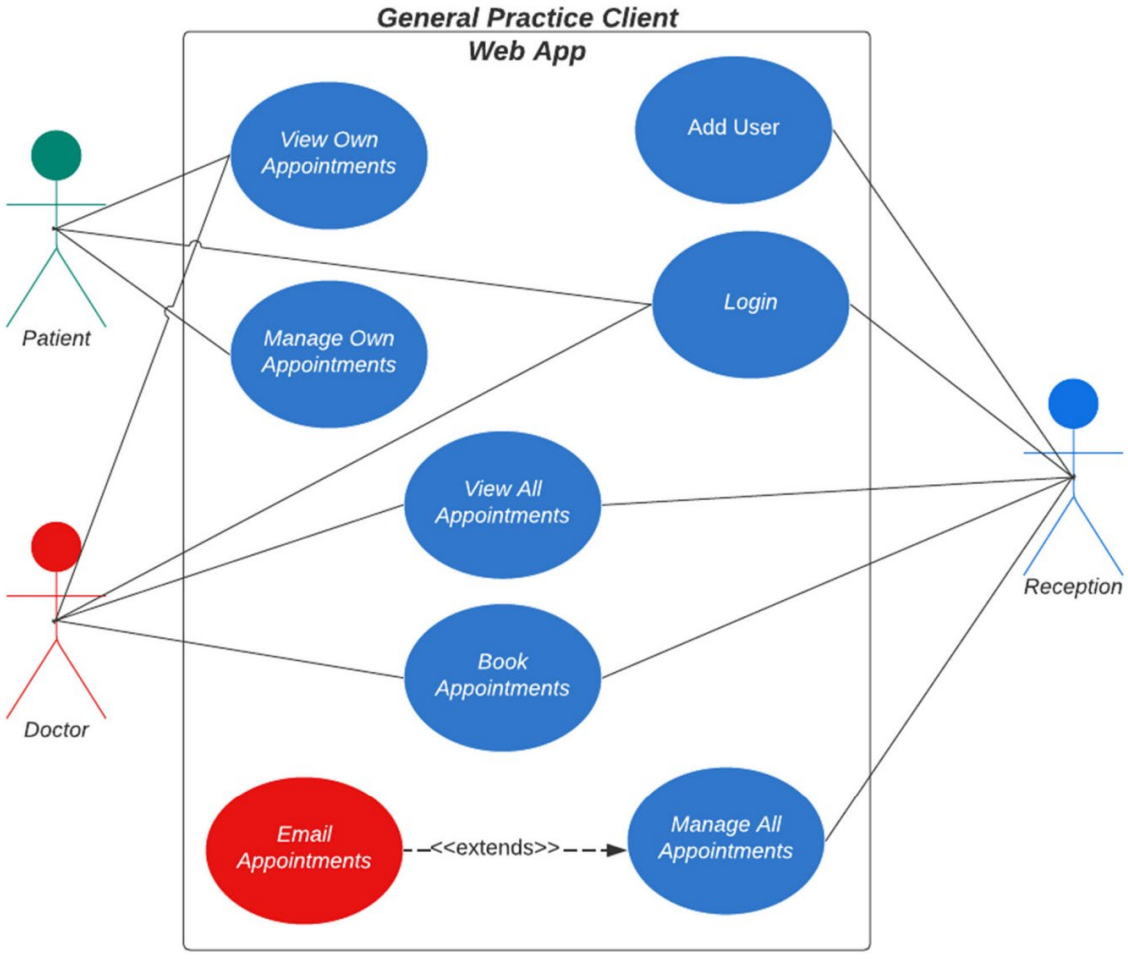
As a GP reception working, I want to be able to easily add new clients and doctors to our records without having to print off physical paper so that we don't need to waste any additional paper and create additional paperwork.

(https://generated.photos/face/joyful-white-middle-aged-female-with-short-brown-hair-and-brown-eyes--5e6886566d3b380006f18667)

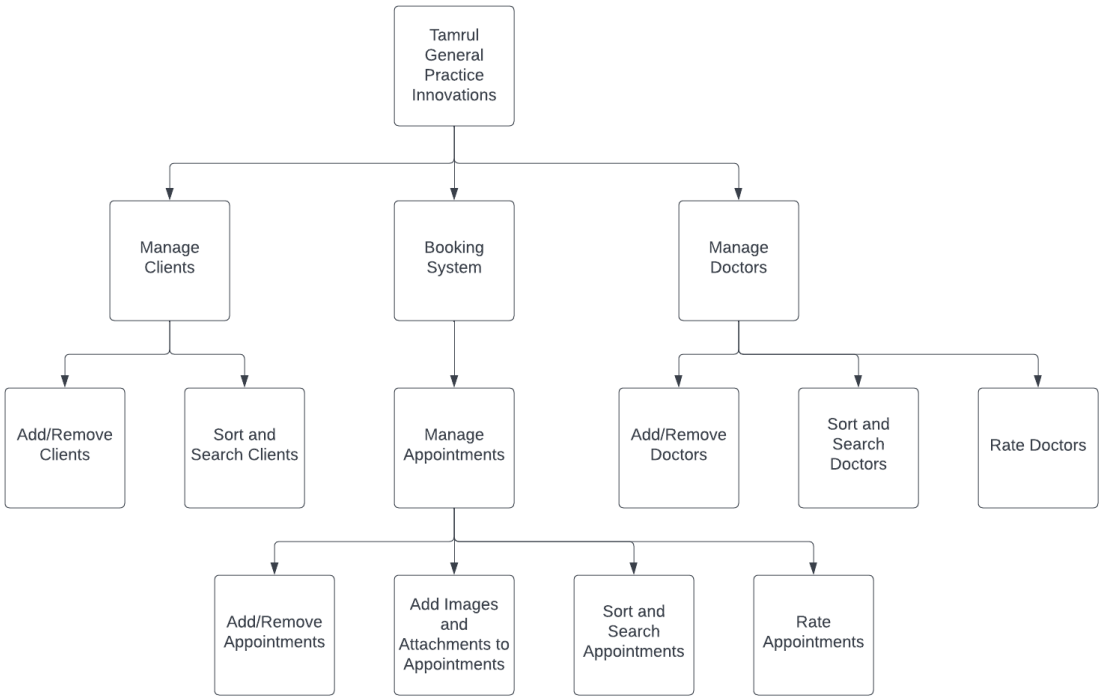
As a busy university student, I want to be able to receive calendar invites when I am booked into an appointment, as I easily forget exactly what date and time I have commitments.

(https://generated.photos/face/joyful-asian-young-adult-female-with-medium-brown-hair-and-brown-eyes--5e6889316d3b380006f22d51)

Use Case Diagram



Block/Functional Diagram

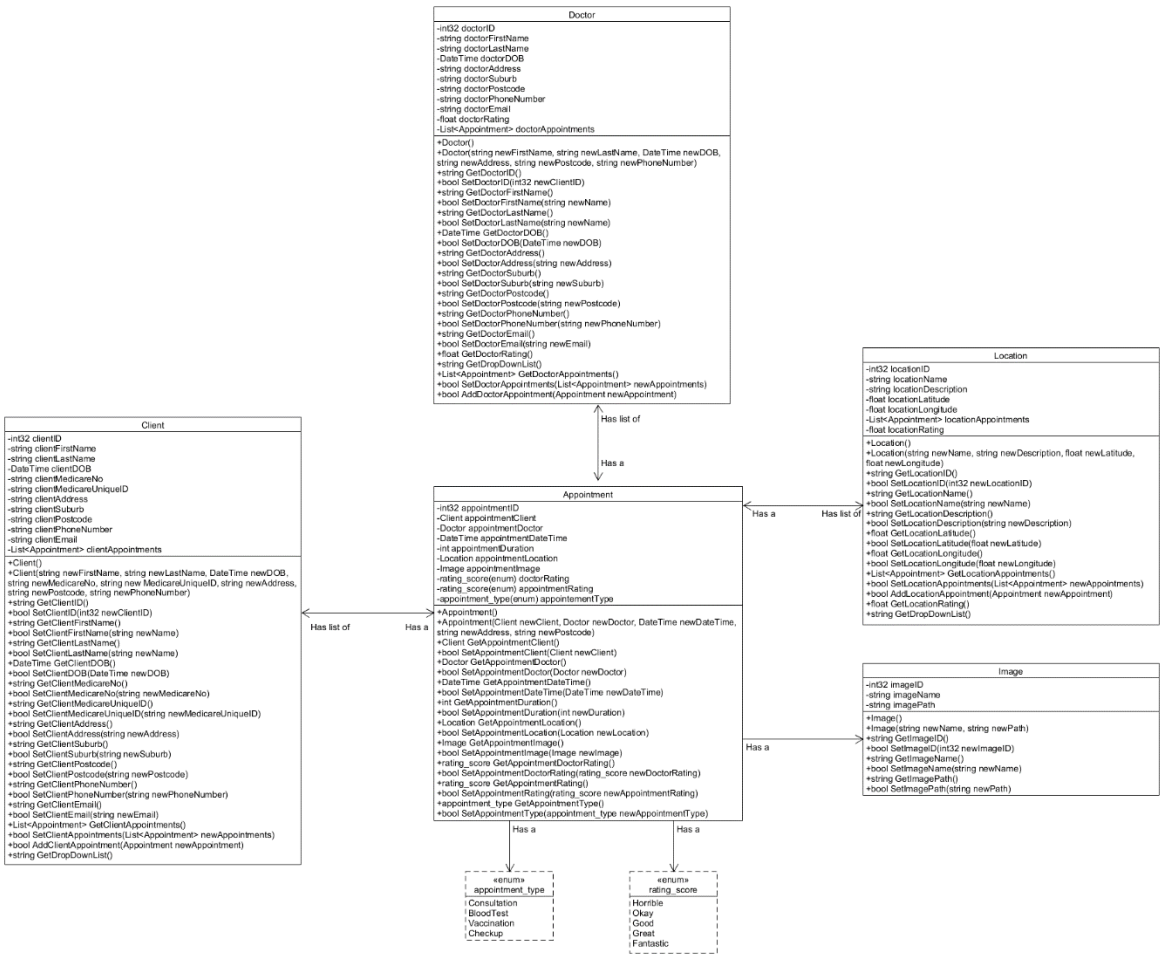


Your Selected Approach when Constructing the Application

I decided upon using Code First for my selected approach with constructing the application as I feel that you have significantly more control over the application development in C#, and I am much more familiar with C# than the other languages like SQL.

On top of this, validation and validation messages are much easier to navigate and flexible using C# and the code first approach than Database First and Model First.

UML Class Diagram



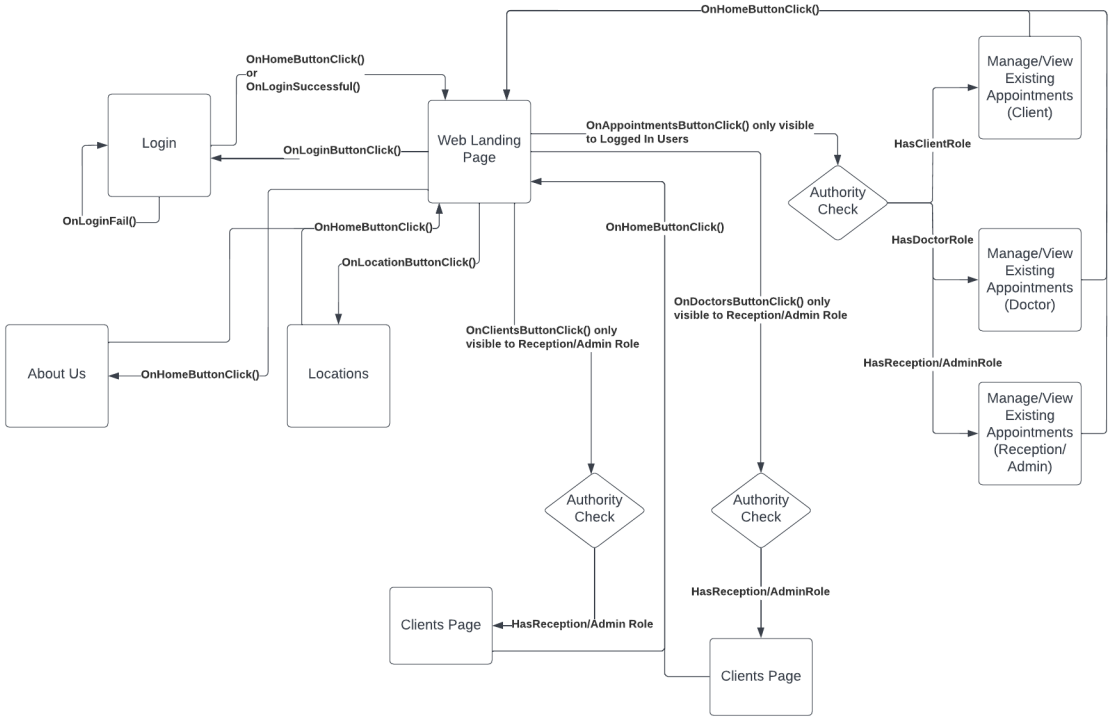
Data Dictionary

Field Name	Data Type	Data Format	Field Size	Decription	Example	Justifcation
First Name	String		50	Fist Name for Clients & Doctors	Nicolas	String used as names are arrays of characters
Last Name	String		50	Last Name for Clients & Doctors	Pallant	String used as names are arrays of characters
DOB	DateTime	DD/MM/YYYY		Date of Birth for Clients & Doctors	25/01/1999	
MedicareNo	Int	NNNNNNNNN	9	Medicare Number for Clients	111111111	
MedicareUniqueID	Int	N	1	Medicare Unique Identifier for Clients	1	
Address	String		100	Address for Clients & Doctors	21 Berringarra Road	String used as addresses are arrays of characrters, can have numbers and letters
Suburb	String		50	Suburb for Clients & Doctors	Officer	String used as suburbs are arrays of characters
Postcode	String	NNNN	4	Post Code for Clients & Doctors	3809	String used as Post codes can have a leading 0
PhoneNumber	String	NNNNNNNNNN	10	Phone Number for Clients & Doctors	0422592901	String used as Phone numbers regularly have a leading 0
Email	String			Email Address for Clients & Doctors (Used for login)	npal0002@student.monash.edu	String used as emails are made up from arrays of characters
DropDownList	String			Concatanation for FirstName + " " + LastName for Dropdown lists	Nicolas Pallant	Concatanation of strings, so a string made sense
Appointments	List<Appointment>			List of Appointments for Clients, Doctors, and Locations		Lists are dynamic, so size can be dynamically adjusted

Rating	Float			A rating score derived from the average of rating_score enums	2.56	An average of an enum / amount of appointments, so float made sense as can be a decimal number
Appointment_type	Enum			Enum for type of appointment	Consultation	Enum used as only certain specific options allowed
Rating_score	Enum			Enum for rating of Doctors & Apppointments	Horrible	Enum used as only certain specific options allowed
Client	Client			Client attending the Appointment	N/A	N/A
Doctor	Doctor			Doctor attending the Appointment	N/A	N/A
DoctorRating	Rating_score			Rating of the Doctor	Great	Rating_score enum used as rating can only be from specific options
AppointmentRating	Rating_score			Rating of the Appointment	Fantastic	Rating_score enum used as rating can only be from specific options
AppointmentType	Appointment_type			Type of the Appointment	Bloodtest	appointment_type enum used as certain appointment types can only be from specific options
ClientString	String			Concatanation of Client's FirstName + " " + LastName	Nicolas Pallant	Concatanation of strings, so a string made sense
DoctorString	String			Concatanation of Doctor's FirstName + " " + LastName	Kristopher Pallant	Concatanation of strings, so a string made sense
LocationString	String			Concatanation of Location's Name + " " + Description	Healthcare Services Clayton Practice	Concatanation of strings, so a string made sense
Location	Location			Location of the Appointment	N/A	N/A

DateAndTime	DateTime	DD/MM/YYYYTHH:MM		Date and Time of the Appoitnment	23/10/2022 05:00PM	As appointments are made up of a date and also a specific time, DateTime made sense
Duration	Int			Duration in minutes of the Appointment	20	This clinic's appointment duration can only be a number of minutes, not decimals, so integer made sense
Image	Image			Image uploaded to Appointment	N/A	N/A
Name	String		100	Name of Image/Location	Certificate	String used as names are arrays of characters
Description	String		100	Description of Location	Clayton Practice	String used as descriptions are arrays of characters
Latitude	Float	0:###.########		Location's Latitude bearing	-35.2453	Float used as latitude can consist of decimals
Longitude	Float	0:###.########		Location's Longitude bearing	146.3245	Float used as longitude can consist of decimals
Path	String			Image's file path on the server	/Uploads/d27da623 add72367d	String used as file paths are combination of letters and numbers

Mockup Prototype and implementation with user Registration & Authentication




```
public class HomeController : Controller
{
    public ActionResult Index()
    {
        return View();
    }

    public ActionResult About()
    {
        ViewBag.Message = "Your application description page.";

        return View();
    }

    public ActionResult Contact()
    {
        ViewBag.Message = "Your contact page.";

        return View();
    }

    public ActionResult Clients(Client client)
    {
        try
        {
            string clientFirstName = client.clientFirstName;
            string clientLastName = client.GetClientLastName();

            ViewBag.CurrentClient = clientFirstName + " " +  clientLastName;
        }
        catch
        {

        }
        if (User.IsInRole("Reception"))
        {
            ViewBag.Message = "List of all Clients";
        }
        else if (User.IsInRole("Doctor"))
        {
            ViewBag.Message = "List of your current Clients";
        }
        else
        {
            ViewBag.Message = "";
        }
        return View();
    }

    public ActionResult Appointments()
    {
        if (User.IsInRole("Reception"))
        {
            ViewBag.Message = "List of all Appointments";
        }
        else if (User.IsInRole("Doctor") || User.IsInRole("Client"))
        {
            ViewBag.Message = "List of all of your Appointments";
        }
        else
        {
            ViewBag.Message = "";
        }
        return View();
    }
}
```

Git

https://github.com/Ryukawastaken/FIT5032-Internet-Apps-Dev/tree/main/FinalAssignment

Usability Design Review

The usability of my current web application is very in-depth, such as what is currently included in my Client class. My client class currently features many constraints which don't allow users to input invalid options, like entering a negative number for a phone number, or not including an @ symbol in an email field.

On top of this, my web application uses visibility to its advantage by always including the navigation menu on the top of the page to allow the user to know that they can always move around. This also falls under the usability principle of consistency, as this is a point of the website that is always in the exact same spot every time, giving the user a sense of familiarity and consistency.

Another usability principle my web application adheres to is the concept of feedback, as whenever the user hovers over one of the navigation bar buttons, they highlight themselves and also become a different colour, this is to indicate that they can be pressed, and that the user is doing the correct thing by hovering over them.

Development Methodology

The code-and-fix model has been used for the development of this web application solution. The reason why this was used is because I find it much simpler to be able to try and code as much as I can, try it out, and then fix the issues that occur along the way.

On top of this, I do not have the time, money, or resources to be able to plan out far in advance, get user data, collect testing data, so it was much more attainable for this style of development methodology.

Versioning

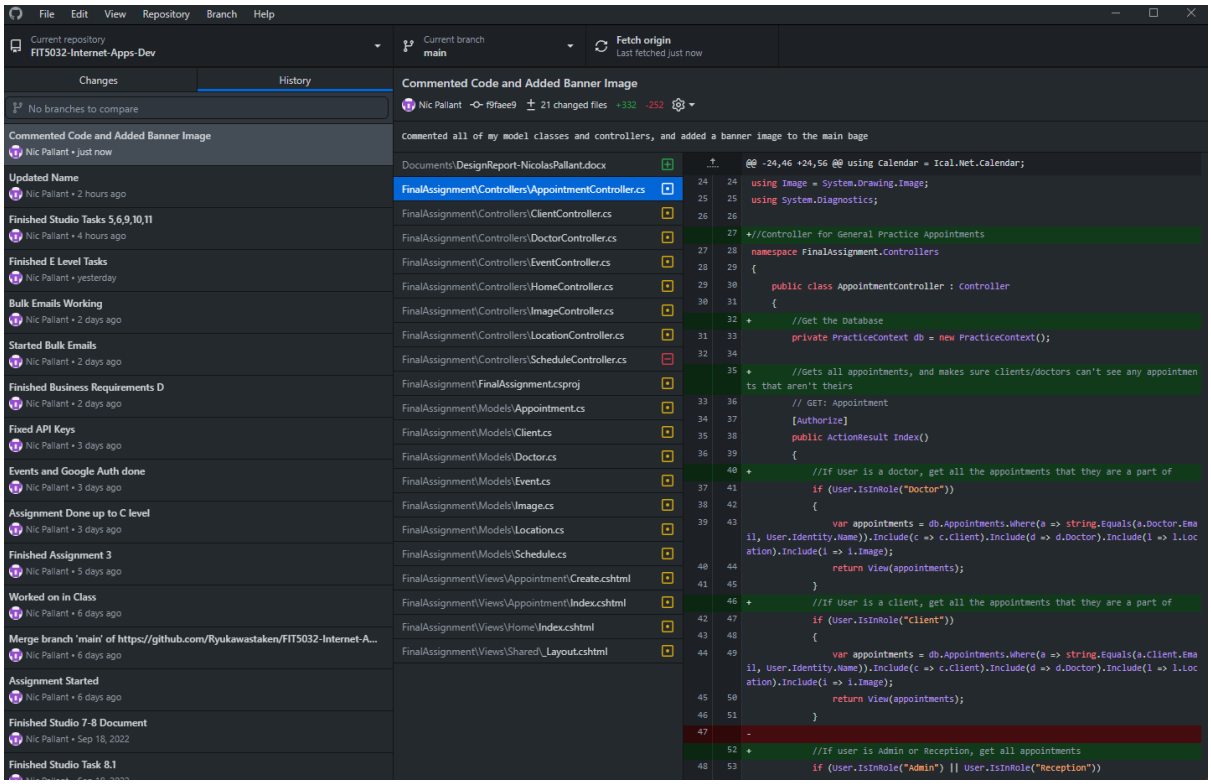
Git has been used for versioning of the project with commits made every time I completely certain functionality of the project. No branches were used. If a mistake was made and the project was unrecoverable, the repository was rolled back to a previous commit.

Specifically GitHub Desktop was used as it is a free option for a Git GUI. GitLFS has not been used as commits have been less than 100mb.

Git repository

https://github.com/Ryukawastaken/FIT5032-Internet-Apps-Dev/tree/main/FinalAssignment

Commits



Checklist of Site Functionality

1. (Layout Page)	
Good Design	✓
Stylesheet	✓
JavaScript	✓
Menu	✓
2. (Home page)	
Design and content	✓
Banner Image	✓
3. (User Log in)	
Web form and validation controls	✓
Formatted data entry display	✓
Overall page design	✓
4. (Customised Views and Controllers)	
Customised Views	✓
Customised Controllers	✓
Other customisations	✓
5. (Documentation)	
Code Comments	✓
Attribution of Source of any code used	✓
6 Business Requirements	
BR(A1): for P	✓
BR(A2): for P	✓
BR(B1): for C to C+	✓
BR(B2): for C to C+	✓
BR(C1): for C+ to C++	✓
BR(C2): for C+ to C++	✓
BR(C3): for C+ to C++	✓
BR(C4): for C+ to C++	✓
BR(D1): for D to D++	✓
BR(D2): for D to D++	✓
BR(D3): for D to D++	✓
BR(D4): for D to D++	✓
BR(E1): for HD to HD+	✓
BR(E2): for HD to HD+	✓
BR(F1): for HD+ to HD++	
Audit	
No breaking of copyright	✓