

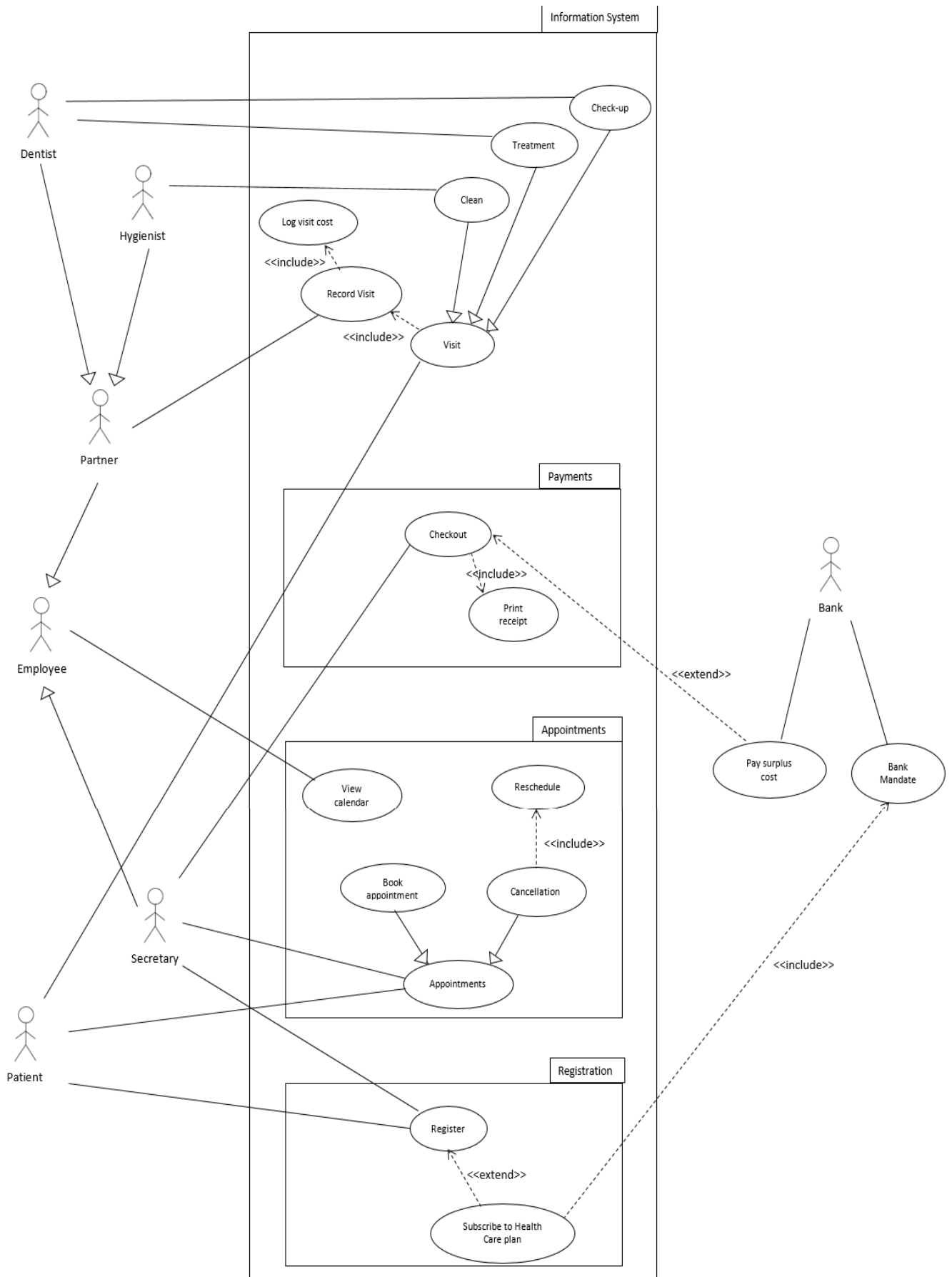
Human Centred Systems Design

Group 9 Project Report

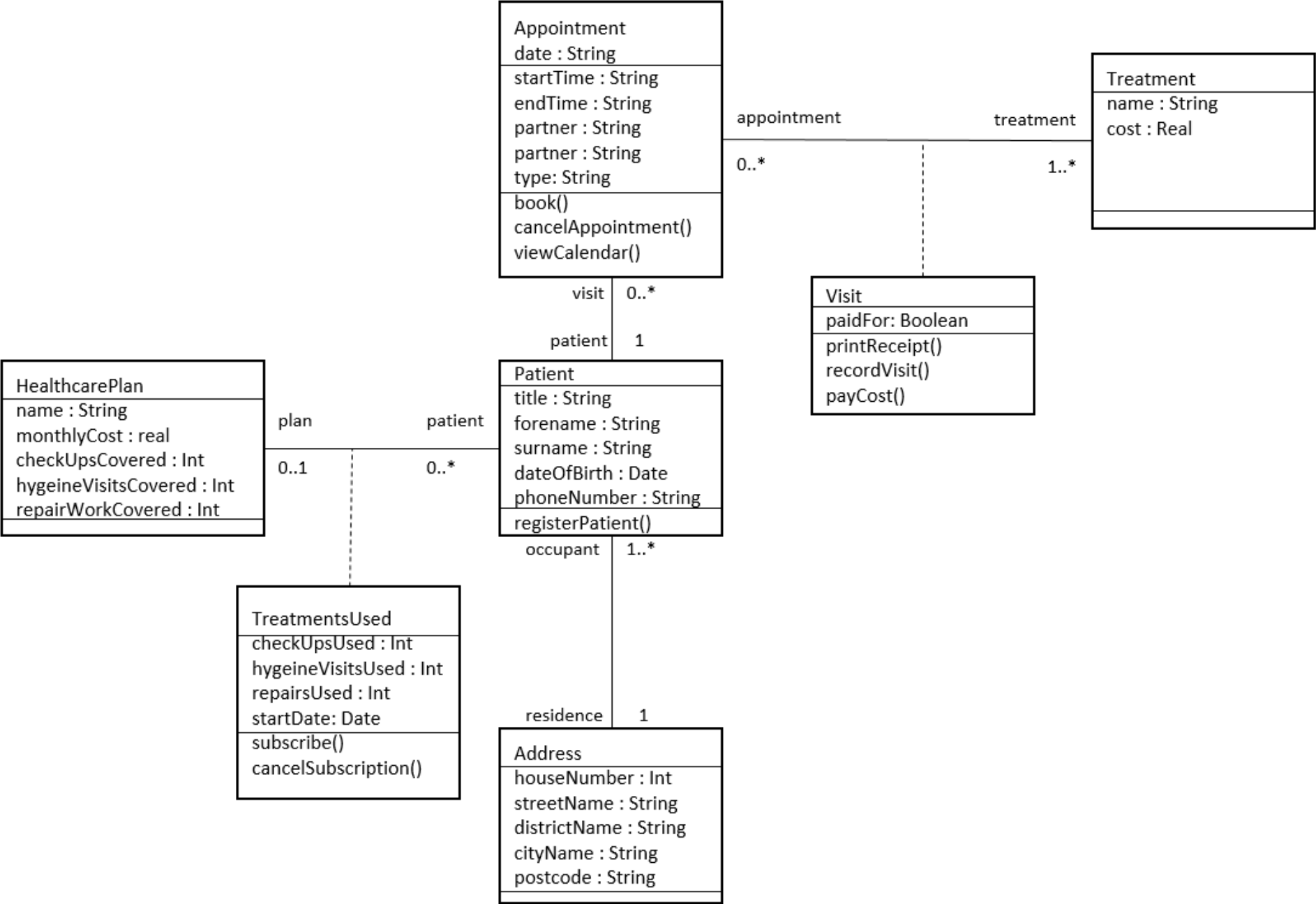
Introduction:

We met every week to discuss our progress on the project. To begin with, we split into pairs and assigned each pair one of either the use case or information model diagram, meeting the following week to review the work and give feedback on each other's designs. At first, we tried using third party software such as UMLet to create our UML diagrams but in the end decided to do the diagrams within Microsoft based software because it was easier to work with the file types and we were all more familiar with using it. We then, in our pairs, individually did the normalised data model and met up to discuss and compare to produce our final solution. We then made mock ups of the user interfaces and created the database. In the following week, we split the work up and began implementing our design. We decided to use eclipse to build the project in Java as this was something we were all comfortable with using as a result of our first-year java course. In order to collaborate effectively on the working of the Java project we decided to use GitHub as a version control solution, this was easy to use because Git is included within eclipse. When implementing the forms/jframes we used eclipse windows builder as this allowed us to create elegant interfaces that would have otherwise been difficult to hard code. We then met over the following weeks to check up on progress and make sure we were on track. Furthermore, over the duration of the weekly meetings we kept discussing our diagram designs in order to come up with the final designs that we were all happy with. We then had a final group meeting to consolidate all the work and produce the final report.

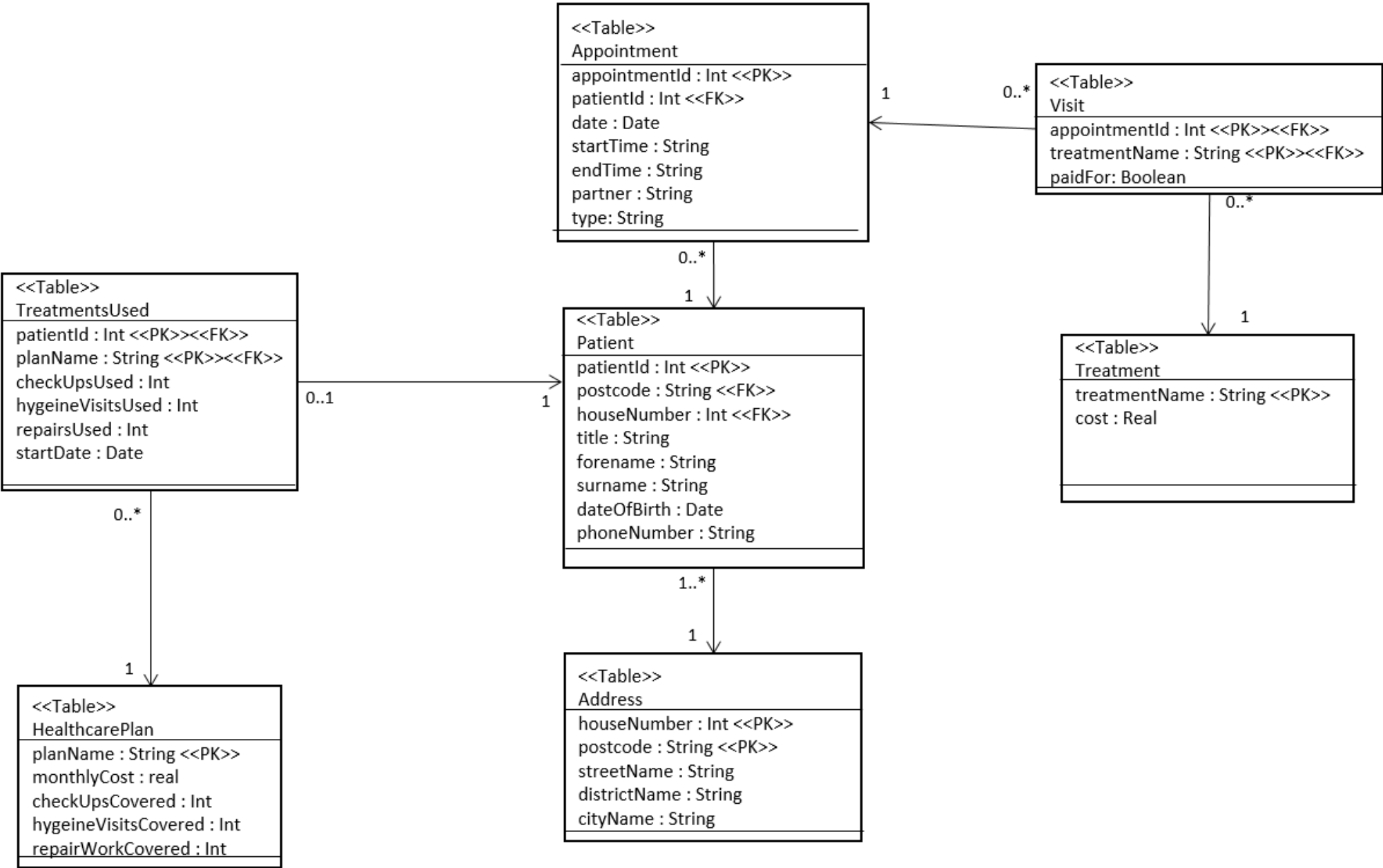
Use Case Diagram



Information Model



Normalised Data Model



Secretary User Interface

To support the secretary’s duties in the system we have designed the UI pages regarding his/her duties with desktop/laptop use in mind. We tried to make the use of the pages intuitive, by keeping buttons that do similar things in the same place, for example the home button is always in the top left corner so that the system can be learnt and used easily

Sheffield Dental Care

View Calendar

Welcome

View Calendar

Manage Appointment...

Manage Patient

Book Holiday

Billing

Dentist

Hygienist

Home

Select Start Date: 2017-11-20 Display

(displays a weeks worth of appointments)

Dentist:

Forename	Surname	Date	Start Time	End Time
hyun	han	2017-11-21	19:00	19:20
Leon	Singleton	2017-11-22	16:00	16:20
Leon	Singleton	2017-11-22	11:00	12:00

Hygienist:

Forename	Surname	Date	Start Time	End Time
hyun	han	2017-11-22	15:00	15:20

Appointment Management

Home

Select a row to view a patients' current appointments:

Search For a Patient:

Forename: Surname: Search

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Leon	Singleton	1997-11-22	07890882956	50	S3 7LA	Darwin Road	Yorkshire	Sheffield
Mr	hyun	han	1995-08-30	07561346592	24	s10 1gt	sackvillRd	yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-18	0789065425	50	S3 7LH	sheffield road	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-19	07957118543	8	S3 7SY	Broomhall Str...	South Yorkshire	Sheffield

Appointments booked for Leon Singleton:

Date	Starttime	End time	Type	Partner
2017-11-22	16:00	16:20	Check Up	Dentist
2017-11-22	11:00	12:00	Repair	Dentist

Book a Holiday

Home

Select a plan:

Select Employee: Select Date: Book Holiday

Register Patient

Register a Patient:

Forename: Surname: Title: Phone no: Date of Birth: House no: Street Name: District: City: Postcode: Clear Register

My Appointments

Home

Today's Appointments:

Title	Patient Forename	Patient Surname	Start Time	End Time	Appointment Type
Mr	Leon	Singleton	11:00	12:00	Repair
Mr	Leon	Singleton	16:00	16:20	Check Up

Next Appointment:

Your next appointment is with Mr Leon Singleton at 16:00 until 16:20.

Record Visit

Billing

Home

Search For a Patient: Forename: Surname: Search

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Leon	Singleton	1997-11-22	07890882956	50	S3 7LA	Darwin Road	Yorkshire	Sheffield
Mr	hyun	han	1995-08-30	07561346592	24	s10 1gt	sackvillRd	yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-18	0789065425	50	S3 7LH	sheffield road	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-19	07957118543	8	S3 7SY	Broomhall Str...	South Yorkshire	Sheffield

Unpaid treatments for hyun han

Date	Time	Treatment	Cost	Covered in Plan?
2017-11-21	19:00	Check-up	45	

Costs:

Absoloute Total: £45

Plan Deductions: £0

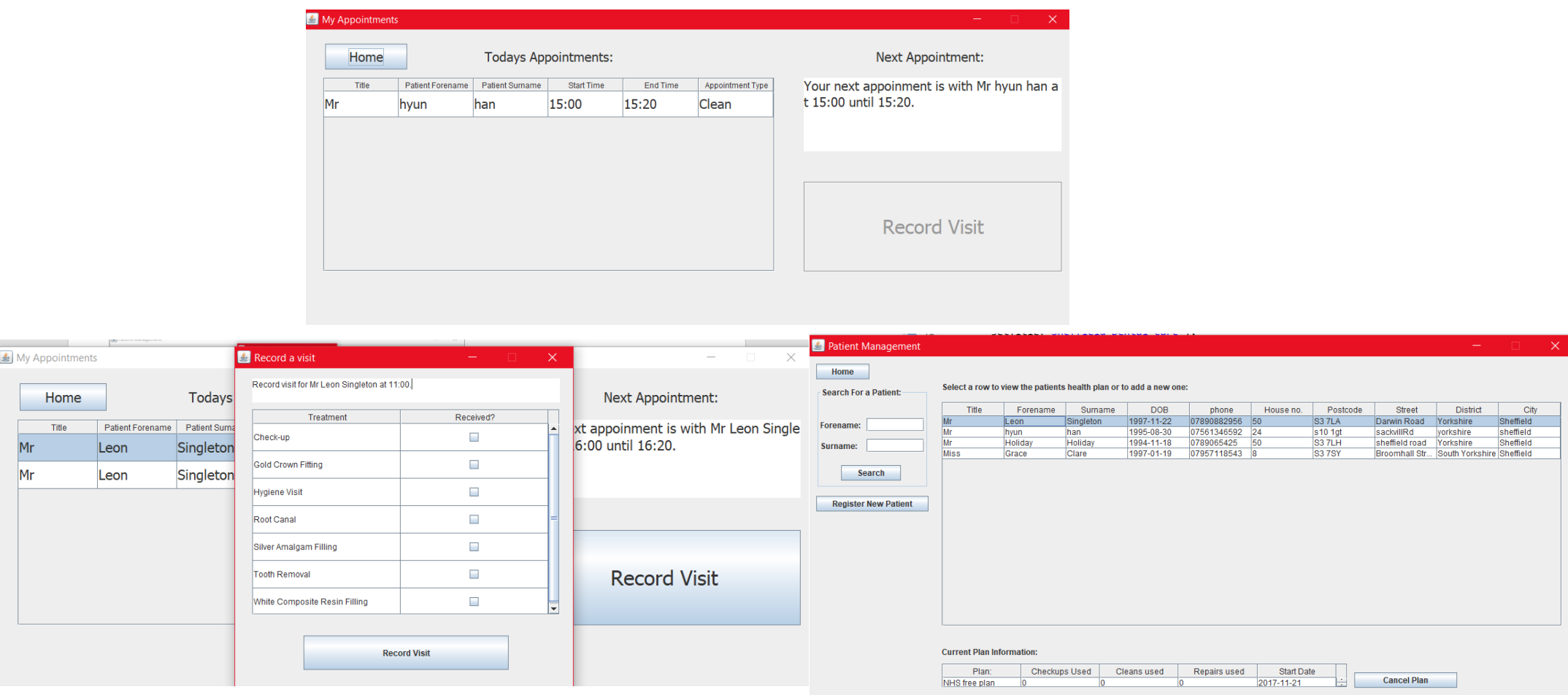
Total After Deductions: £45

Pay Bill

Partner User Interface

To support the fact that the partners use the system on a touch screen device, the interface has been designed so that it has large text and buttons. It also does not require any typing from the user making using it on a smaller device simpler.

We also tried to keep the interface from being too cluttered so that the partner does not accidentally press the wrong button or get confused. We made sure that the rows in the record visit form are large enough that the partner won't accidentally select the wrong treatment.



Evidence of Query Processing:

Registering a new patient and then showing that the new patient exists in the DB:

The screenshot shows the 'Patient Management' application interface. On the left, there is a 'Search For a Patient' section with fields for Forename and Surname, and a 'Register New Patient' button. A green circle highlights the 'Register New Patient' button. An arrow points from this button to a 'Register Patient' dialog box. The dialog box contains fields for Forename (Lottie), Surname (Funnell), Title (Miss), Phone no. (0123456789), Date of Birth (1995-08-15), House no. (24), Street Name (Netherthorpe Street), District (South Yorkshire), City (Sheffield), and Postcode (S3 7YJ). A green circle highlights the 'Register' button in the dialog. An arrow points from the 'Register' button to a 'Confirmation' dialog box that says 'Registration Successful!' with an 'OK' button. A green circle highlights the 'OK' button. An arrow points from the 'OK' button to the main 'Patient Management' window, which displays a table of patients. A green circle highlights the row for Miss Lottie Funnell, indicating that the new patient has been successfully added to the database.

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Leon	Singleton	1997-11-22	07890882956	50	S3 7LA	Darwin Road	Yorkshire	Sheffield
Mr	hyun	han	1995-08-30	07561346592	24	s10 1gt	sackvillRd	yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-18	0789065425	50	S3 7LH	sheffield road	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-19	07957118543	8	S3 7SY	Broomhall Str...	South Yorkshire	Sheffield
Miss	Lottie	Funnell	1995-08-15	0123456789	24	S3 7YJ	Netherthorpe ...	South Yorkshire	Sheffield

Subscribing a patient to a healthcare plan and then showing that the patient is linked with the relevant plan in the DB, through a new record of relevant treatment-credits for the plan, for the current year :

In our system, the credits are initialisd at 0 and increase with every treatment used by the patient.

The screenshot shows the 'Patient Management' application interface. On the left, there is a 'Search For a Patient' section with fields for Forename and Surname, and an 'Add Healthcare Plan' button. A green circle highlights the 'Add Healthcare Plan' button. An arrow points from this button to a 'Subscribe to a Healthc...' dialog box. The dialog box contains a 'Select a plan:' section with a dropdown menu showing 'NHS free plan'. Below this, there are fields for 'Treatments Covered' (6), 'Check-ups Covered' (2), and 'Hygiene Visits Covered' (2). A green circle highlights the 'Subscribe' button. An arrow points from the 'Subscribe' button to a 'Confirmation' dialog box that says 'Subscription Successful!' with an 'OK' button. A green circle highlights the 'OK' button. An arrow points from the 'OK' button to the main 'Patient Management' window, which displays a table of patients. A green circle highlights the row for Miss Lottie Funnell, indicating that the new patient has been successfully added to the database. Below the table, there is a 'Current Plan Information:' section with a table showing the plan details for the selected patient.

Plan	Checkups Used	Cleans used	Repairs used	Start Date
NHS free plan	0	0	0	2017-11-21

Creating an appointment for a patient to see the dentist and showing that this appointment appears in the receptionist’s week-to-view calendar for the dentist, and also appears in the dentist’s appointments for that day:

Appointment Management

Home

Search For a Patient:

Forename:

Surname:

Search

View Calendar

Select a row to view a patients' current appointments:

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Leon	Singleton	1997-11-22	07890882956	50	S3 7LA	Darwin Road	Yorkshire	Sheffield
Mr	hyun	han	1995-08-30	07561346592	24	s10 1gt	sackvillRd	Yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-18	07890665425	50	S3 7LH	sheffield road	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-19	07957118543	8	S3 7SY	Broomhall St...	South Yorkshire	Sheffield
Miss	Lottie	Funnell	1995-08-15	0123456789	24	S3 7YJ	Netherthorpe ...	South Yorkshire	Sheffield

Book Appointment

Book a New Appointment:

Choose a date: 2017-11-22

Choose a start time: 13:00

Appointment type: Check-up

Clear

Book

Future appointments booked for Grace Clare:

Date	Start time	End time	Type	Partner
2017-11-22	15:00	16:00	Treatment	Dentist
2017-11-23	09:40	10:40	Treatment	Dentist

Book a New Appointment

View Calendar

Home

Select Start Date: 2017-11-22

Display

(displays a weeks worth of appointments)

Dentist:

Forename	Surname	Date	Start Time	End Time
Leon	Singleton	2017-11-22	11:00	12:00
Grace	Clare	2017-11-22	13:00	13:20
Grace	Clare	2017-11-22	15:00	16:00
Leon	Singleton	2017-11-22	16:00	16:20
Grace	Clare	2017-11-23	09:40	10:40

Hygienist:

Forename	Surname	Date	Start Time	End Time
hyun	han	2017-11-22	15:00	15:20

My Appointments

Home

Today's Appointments:

Title	Patient Forename	Patient Surname	Start Time	End Time	Appointment Type
Mr	Leon	Singleton	11:00	12:00	Repair
Miss	Grace	Clare	13:00	13:20	Check-up
Miss	Grace	Clare	15:00	16:00	Treatment
Mr	Leon	Singleton	16:00	16:20	Check Up

Next Appointment:

You have no more appointments today

Record Visit

Attempting to create two appointments for a patient that are refused, either because the patient or the partner already have appointments at this time:

Appointment Management

Home

Search For a Patient:
Forename:
Surname:
Search

View Calendar

Select a row to view a patients' current appointments:

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Leon	Singleton	1997-11-22	0789082956	50	S3 7LA	Darwin Road	Yorkshire	Sheffield
Mr	Hyun	han	1995-08-30	07561346592	24	s10 1gt	sacovillRd	Yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-18	0789065425	50	S3 7LH	sheffield road	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-19	07957118543	8	S3 7SY	Broomhall Str	South Yorkshire	Sheffield
Miss	Lottie	Funnell	1995-08-15	0123456789	24	S3 7YJ	Netherthorpe	South Yorkshire	Sheffield

Book Appointment

Book a New Appointment:
Choose a date: 2017-11-22
Choose a start time: 13:00
Appointment type: Treatment
Clear Book

Future appointments booked for Grace Clare:

Date	Start time	End time	Type	Partner
2017-11-22	13:00	13:20	Check-up	Dentist
2017-11-22	15:00	16:00	Treatment	Dentist
2017-11-23	09:40	10:40	Treatment	Dentist

Book a New Appointment

Appointment Management

Home

Search For a Patient:
Forename:
Surname:
Search

View Calendar

Select a row to view a patients' current appointments:

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Leon	Singleton	1997-11-22	0789082956	50	S3 7LA	Darwin Road	Yorkshire	Sheffield
Mr	Hyun	han	1995-08-30	07561346592	24	s10 1gt	sacovillRd	Yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-18	0789065425	50	S3 7LH	sheffield road	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-19	07957118543	8	S3 7SY	Broomhall Str	South Yorkshire	Sheffield
Miss	Lottie	Funnell	1995-08-15	0123456789	24	S3 7YJ	Netherthorpe	South Yorkshire	Sheffield

Book Appointment

Book a New Appointment:
Choose a date: 2017-11-22
Choose a start time: 13:00
Appointment type: Check-up
Clear Book

Future appointments booked for Lottie Funnell:

There are no current appointments for this patient

Book a New Appointment

Clash

The patient already has an appointment for this time, please consult the calendar

OK

Clash

The Dentist already has an appointment for this time, please consult the calendar

OK

Booking two days holiday for the hygienist and then showing that blank appointments fill the relevant two days on the hygienist's week-to-view calendar:

The screenshot illustrates the process of booking a holiday for a hygienist. It features three overlapping 'Book a Holiday' windows. The first window shows 'Select Employee: Hygienist' and 'Select Date: 2017-11-23'. The 'Book Holiday' button is circled in green. A green arrow points from this button to the 'OK' button in a 'Booking Confirmation' pop-up window that says 'Booking Successful!'. Another green arrow points from the 'Book Holiday' button of the second window to the 'OK' button of its corresponding 'Booking Confirmation' pop-up. The third window shows the date '2017-11-24'. Below these, the 'View Calendar' window displays a weekly appointment schedule. The 'Hygienist' section of the calendar shows two days of holiday (2017-11-23 and 2017-11-24) with 'Holiday' listed as the treatment. The 'OK' button from the confirmation pop-up is circled in green, with a green arrow pointing to the 'Holiday' entry in the calendar.

Forename	Surname	Date	Start Time	End Time
Leon	Singleton	2017-11-22	11:00	12:00
Grace	Clare	2017-11-22	13:00	13:20
Grace	Clare	2017-11-22	15:00	16:00
Leon	Singleton	2017-11-22	16:00	16:20
Grace	Clare	2017-11-23	09:40	10:40
Hyun	Han	2017-11-22	15:00	15:20
Holiday	Holiday	2017-11-23	09:00	18:00
Holiday	Holiday	2017-11-24	09:00	18:00

Recording two treatments given by the dentist to a patient and then showing that these have been added to the bill for the appointment;

The screenshot illustrates the process of recording a visit and generating a bill. It features four overlapping windows. The 'My Appointments' window shows a list of appointments for 'Today', including 'Miss Grace Clare' at 15:00. The 'Record a visit' window shows a table of treatments for 'Miss Grace Clare at 15:00'. The 'Record Visit' button is circled in green. A green arrow points from this button to the 'OK' button in a 'Confirmation' pop-up window that says 'Visit Recorded Successfully!'. Another green arrow points from the 'OK' button to the 'Billing' window. The 'Billing' window shows a table of 'Unpaid treatments for Grace Clare' with two entries: 'Gold Crown Fitting' and 'Root Canal'. The 'Pay Bill' button is circled in green.

Treatment	Received?
Check-up	<input type="checkbox"/>
Gold Crown Fitting	<input checked="" type="checkbox"/>
Hygiene Visit	<input type="checkbox"/>
Root Canal	<input checked="" type="checkbox"/>
Silver Amalgam Filling	<input type="checkbox"/>
Tooth Removal	<input type="checkbox"/>
White Composite Resin Filling	<input type="checkbox"/>

Date	Time	Treatment	Cost	Covered in Plan?
2017-11-22	15:00	Gold Crown Fitting	500	<input checked="" type="checkbox"/>
2017-11-22	15:00	Root Canal	150	<input checked="" type="checkbox"/>

Displaying the total cost of an appointment for a patient who is on a healthcare plan, showing the total cost of treatments and the amount owed by the patient;

Billing

Home

Search For a Patient:

Forename:

Surname:

Search

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Holiday	Holiday	1994-11-...	0789065...	50	S3 7LH	sheffield...	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-...	0795711...	8	S3 7SY	Broomh...	South Yo...	Sheffield
Miss	Lottie	Funnell	1995-08-...	0123456...	24	S3 7YJ	Netherth...	South Yo...	Sheffield

Unpaid treatments for Lottie Funnell

Date	Time	Treatment	Cost	Covered in Plan?
2017-11-22	10:00	Check-up	45	<input checked="" type="checkbox"/>
2017-11-22	10:00	Gold Crown Fitting	500	<input type="checkbox"/>

Costs:

Absoloute Total:

£545

Plan Deductions:

£45

Total After Deductions:

£500

Pay Bill

Processing a payment by a patient who is on a healthcare plan, showing how their treatment-credits for that year are adjusted, and that they now owe nothing:

Billing

Home

Search For a Patient:
Forename: Surname:

Search

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	hyun	han	1995-08-...	0756134...	24	s10 1gt	sackvillRd	yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-...	0789065...	50	S3 7LH	sheffield...	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-...	0795711...	8	S3 7SY	Broomh...	South Yo...	Sheffield

Unpaid treatments for Grace Clare

Date	Time	Treatment	Cost	Covered in Plan?
2017-11-22	12:00	Tooth Removal	30	<input type="checkbox"/>
2017-11-22	13:00	Check-up	45	<input checked="" type="checkbox"/>

Costs:

Absolute Total: £75

Plan Deductions: £45

Total After Deductions: £30

Pay Bill

Confirmation

i

Bill Paid Successfully!

OK

Billing

Home

Search For a Patient:
Forename: Surname:

Search

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	hyun	han	1995-08-...	0756134...	24	s10 1gt	sackvillRd	yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-...	0789065...	50	S3 7LH	sheffield...	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-...	0795711...	8	S3 7SY	Broomh...	South Yo...	Sheffield

Unpaid treatments for Grace Clare

Date	Time	Treatment	Cost	Covered in Plan?
------	------	-----------	------	------------------

Costs:

Absolute Total: £0

Plan Deductions: £0

Total After Deductions: £0

Pay Bill

Patient Management

Home

Search For a Patient:
Forename: Surname:

Search

Register New Patient

Select a row to view the patients health plan or to add a new one:

Title	Forename	Surname	DOB	phone	House no.	Postcode	Street	District	City
Mr	Leon	Singleton	1997-11-22	07890882956	50	S3 7LA	Darwin Road	Yorkshire	Sheffield
Mr	hyun	han	1995-08-30	07561346592	24	s10 1gt	sackvillRd	yorkshire	sheffield
Mr	Holiday	Holiday	1994-11-18	0789065425	50	S3 7LH	sheffield road	Yorkshire	Sheffield
Miss	Grace	Clare	1997-01-19	07957118543	8	S3 7SY	Broomhall Str...	South Yorkshire	Sheffield
Miss	Lottie	Funnell	1995-08-15	0123456789	24	S3 7YJ	Netherthorpe ...	South Yorkshire	Sheffield

Current Plan Information:

Plan:	Checkups Used	Cleans used	Repairs used	Start Date
Maintenance plan	1	0	0	2017-11-22

Cancel Plan

Effort Declaration:

The diagrams were split evenly between the group, and we all worked equally producing these with no issue. The user interface was split between everyone evenly but due to some errors other members of the group assisted with the view calendar and manage appointments pages. Overall, we worked effectively as a team and produced the required content in a timely manner.

Hyun Han	<ul style="list-style-type: none">• Use Case Model• Normalised Data Model• Book Holiday Form• View Calendar
Leon Singleton	<ul style="list-style-type: none">• Use Case Model• Normalised Data Model• UI Mock Ups• Manage Patient page (manage healthcare plans, register patients)• View Calendar
Grace Clare	<ul style="list-style-type: none">• Information Model• Normalised Data Model• Created Database• Partner user interface• Billing Page• Manage Appointments Page
Lottie Funnell	<ul style="list-style-type: none">• Information Model• Normalised Data Model• Manage Appointments Page

Hyun Han	100
Leon Singleton	110
Grace Clare	120
Lottie Funnell	70

All members of the group agree with this declaration:

Grace Clare

Leon Singleton

Hyun Han

Lottie Funnell