

## **Criteria B - Design**

### **Classes and their functionality**

GUI: Generates the GUI interface

Manager: Manages all the doctors, patients, appointments, clinical examinations possible and the pharmacist class which contains information about the medicines

Patient: contains basic information about itself and its owner

Doctor: knows assigned patients and treatments needed to be performed

Accountant: generates bill based on days stayed in hospital by the patient and the treatments performed on the patient

Receptionist: Creates appointments and assigns rooms to patients

Appointment: knows the doctor and patient involved in appointment; may be diagnosis or treatment

Pharmacist: Manages the different medicines and their quantity

Medicine: knows its type and its quantity

PatientRecord: includes information regarding the patient's medical history, symptoms and expected clinical examinations

Examination: knows its type and whether it has been performed on a specific patient

### **Algorithms and User Interface**

Figure 1. The algorithm for adding a new patient

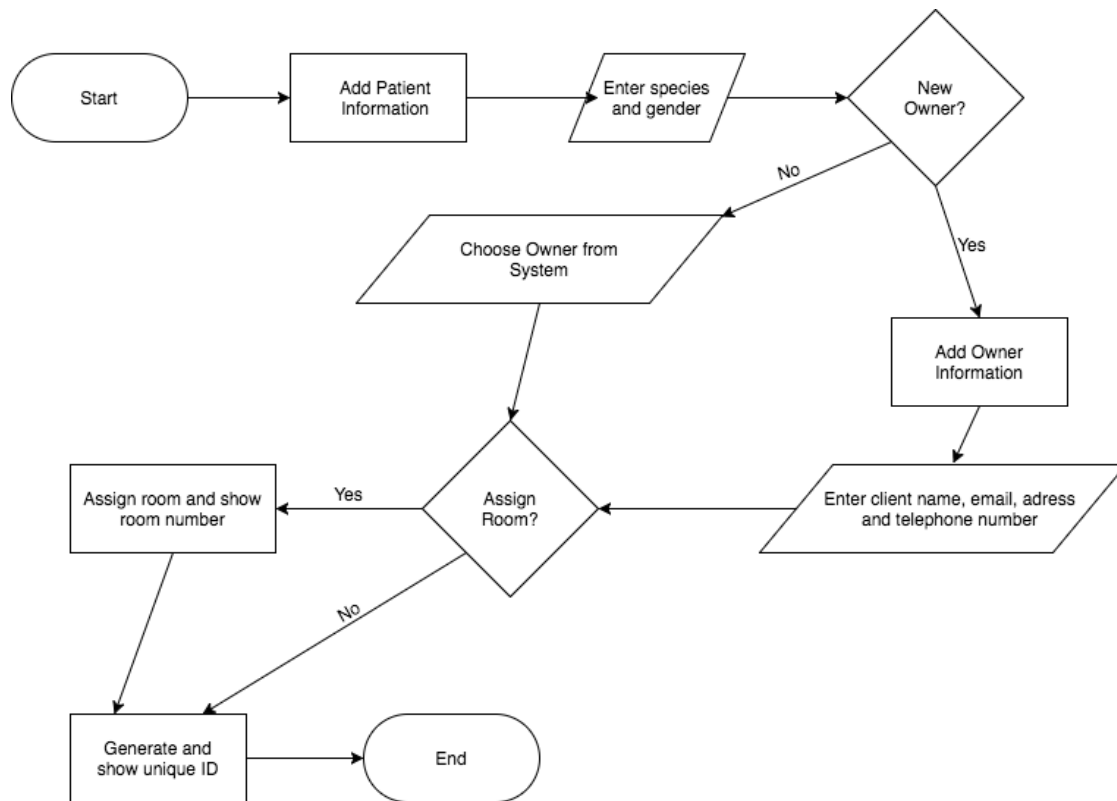


Figure 2. The algorithm for adding a new appointment

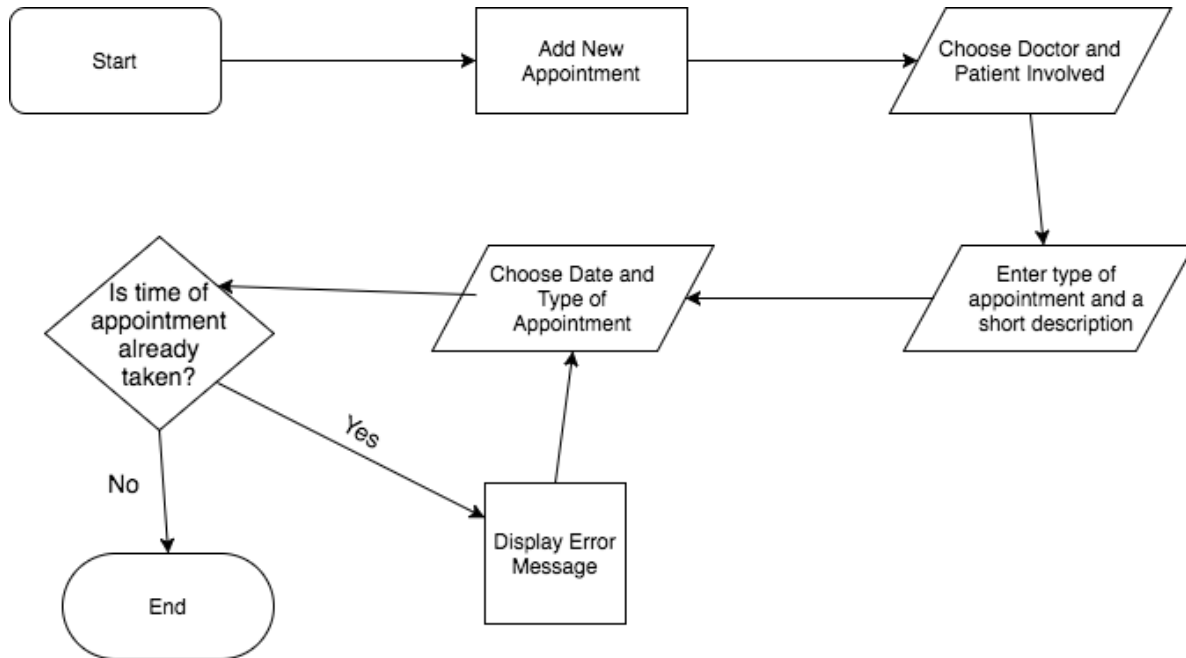


Figure 3. The algorithm for adding or removing medicine

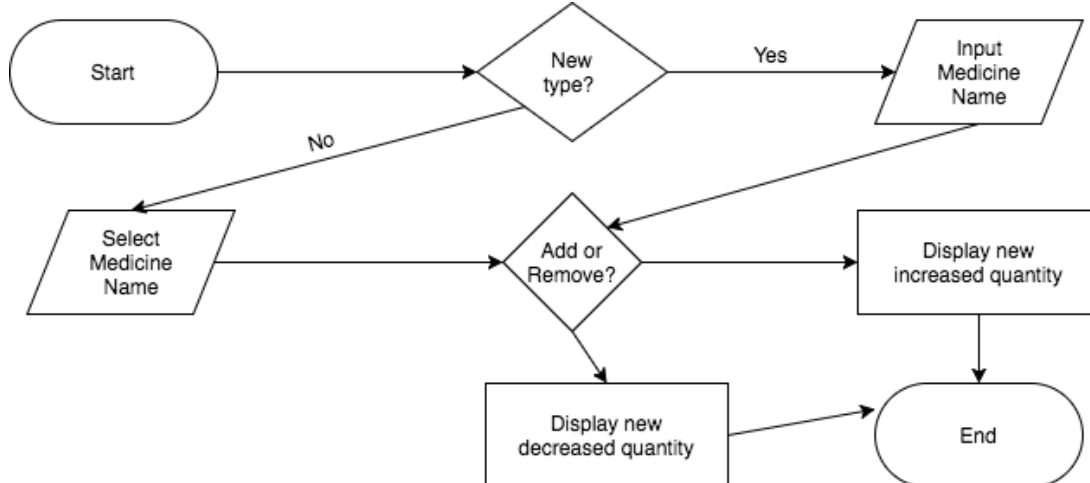



Figure 4. The main-menu with selected section “Doctors & Patients”

Doctors & Patients	Appointments	Stock Management	Settings
<div>Owner: Abigail Thorpe      Patient: Abby      Cat(Feline - Domestic) </div>			
<div>Owner: Ostrich Penny      Patient: Buster      Dog(Canine - Domestic)</div>			
<div>Owner: Tom Fieldhead      Patient: Carly      Cat(Feline - Domestic)</div>			
<div>Owner: Jimmy Tonder      Patient: Cooper      Cat(Feline - Domestic)</div>			
<div>Owner: David Dier      Patient: Custil      Cat(Feline - Domestic)</div>			
<div>Owner: David Toom      Patient: Goofy      Cat(Feline - Domestic)</div>			
<div>Search: <input type="text"/></div>		<div><div>Doctor</div><div>Patient</div></div>	
		<div><div>Add Doctor</div><div>Add Patient</div></div>	

Click box to edit Patient

Usually displays patients in alphabetical order unless searched for doctors

Click button to specify whether to search for a doctor or patient

Click to add either a new doctor (Figure 10) or new patient (Figure 8)

Figure 5. The main menu with selected section “Appointments”

Doctors & Patients	<b>Appointments</b>	Stock Management	Settings
<div>Date: 26/11/2017      Doctor: Jordan Bacherish      Patient: Abby</div>			
<div>Date: 31/11/2017      Doctor: Jacob Jacksoner      Patient: Buster</div>			
<div>Date: 5/12/2017      Doctor: Zumaha Tiyara      Patient: Carly</div>			
<div>Date: 6/12/2017      Doctor: Rachel Osterlich      Patient: Cooper</div>			
<div>Date: 8/12/2017      Doctor: Jacob Jacksoner      Patient: Custil</div>			
<div>Date: 9/12/2017      Doctor: Jordan Bacherish      Patient: Goofy</div>			
Sort By: <input type="button" value="Patient"/> <input type="button" value="Doctor"/> <input type="button" value="Date"/>			<input type="button" value="New Appointment"/>

Click button to create a new appointment (Figure. 11)

Figure 6. The main menu with selected section “Stock Management”

Doctors & Patients	Appointments	<b>Stock Management</b>	Settings
<div>Acetazolamide / Diamox      Quantity: 132 g</div>			
<div>Anipryl / Selegiline      Quantity: 40 g</div>			
<div>Baytril / Enrofloxacin      Quantity: 25 g</div>			
<div>Clavamox      Quantity: 66 g</div>			
<div>Clemastine      Quantity: 45 g</div>			
<div>Diphenhydramine      Quantity: 12 g</div>			
Search: <input type="text"/> <input type="button" value="Enter"/>		<input type="button" value="Add Medicine"/>	

Click button to add or remove medicine (Figure. 12)

Figure 7. The main menu with selected section “Settings”

Doctors & Patients	Appointments	Stock Management	<b>Settings</b>
<div><div><div>Tax prices</div><div><div>▼</div><div>included</div></div></div><div><div>Weight Unit</div><div><div><input type="radio"/> lbs</div><div><input type="radio"/> kg</div></div></div><div><div>Currency</div><div><div>▼</div><div>EUROS</div></div></div><div><div>Temperature Unit</div><div><div><input type="radio"/> lbs</div><div><input type="radio"/> kg</div></div></div></div> <div><div>Edit Clinical Examinations</div><div>Edit Room Settings</div><div>Save</div></div>			

Click button to edit the clinical examinations performed in the hospital (Figure .14)

Click button to edit the rooms in the veterinary hospital (Figure .13)

Figure 8. Adding a new patient (part 1)

**Patient Information**

Name:	<input type="text"/>	Sex:	<input type="text"/>
Species:	<input type="text"/>	Breed:	<input type="text"/>
Colour:	<input type="text"/>	Date of Birth:	<input type="text"/>
Age:	<input type="text"/>	Weight:	<input type="text"/>
Owner Name:	<input type="text"/>	*Leave blank if owner is not yet in the system	

Only go to Figure 9. If Owner name is not chosen from system and it is left blank.

Figure 9. Adding a new patient (part 2)

**Owner Information**

First Name:	<input type="text"/>	Last Name:	<input type="text"/>
Email:	<input type="text"/>	Telephone Number:	<input type="text"/>
Address:	<input type="text"/>		
Assign Room	<input type="text"/>	*Leave blank to automatically assign a room	

Figure 10. Adding a doctor

Doctor Information

First Name:


Last Name:

Email:

Telephone Number:

Address:

Attach Resume:



Cancel

Save

Figure 11. Adding a new appointment



**Appointment Information**

Appointment type:  Purpose:

Veterinarian:  Client:

Appointment Description:

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Date:  Start Time:

End Time:

A calendar will be shown when clicked here and thus the calendar will show appointments already created.

Figure 12. Adding a quantity of medicine

**Medicine Information**

Name:  Quantity

If the name entered does not exist in system, add a new medicine with that name.

Figure 13. Editing the rooms in the veterinary hospital

Rooms

A001  
A002  
A003  
A004  
A005  
A101

Room Number:

Cost per Day:

Spots Available:

Add Room

▼

Delete Room

Back

Choose a room number/  
name from a list shown  
on the left as well.

Figure 14. Editing the clinical examinations possible in the hospital

Examination  
Types

Temperature  
Heart Rate  
Respiratory Rate

Examination:

Add

▼

Delete

Back

Choose an examination  
from a list shown on the  
left as well.

Action being tested	Test method
GUI elements are performing their respective functions	Enter all the information and click the buttons and observe whether they are performing the required functions
Treatment bill is generated appropriately	Do this by manually calculating expected bill (by looking at days stayed and treatments performed) and comparing it with the generated bill
Empty rooms are assigned based on disease type and animal type	Check that rooms do not have two animals at once and the correct rooms are assigned based on the animals by adding various animals and noting whether the right room is given and that the same room isn't given multiple times.
All the required information is entered when adding a new patient or creating a new appointment.	An error message is displayed notifying the user of the information they have not entered and warn them to fill in all the required information.
All the patient information is correctly entered and stored	Display warning messages if certain information have numbers if they are not supposed to have them (name, breed). Ensure that two patients do not have the same information by displaying a message that the patient has already been added.
Appointments are properly ordered and removed once its date has passed	Ensure that the appointments are displayed properly in the order of date or doctor based on the option chosen in the main GUI appointment display. Order the appointments by date and check that all the appointments are from either today's date or coming up.
Quantity of medicines are changed based on user refill or usage	If user takes out medicine, reduce that amount in database. Display error message when user attempts to take out more medicine than there is. If user restocks a type of medicine, add that amount. This can be easily checked by manually
Each doctor has patients assigned to them	Edit a doctor's profile and ensure that their assigned patients are shown and their respective examinations needed to be performed are also shown. Make sure that once a patient is removed from the system, he/she is removed from the doctor's assigned list.

Input Data

<p>The information regarding a new patient coming to the hospital is entered.</p> <p>Example  Name: Anna  Sex: female  Species: dog  Breed: pug  Colour: white  Birthdate: 7/12/2016  Weight(lb): 14  Owner: David Barton</p>	<p>Comments</p> <p>This information is obtained from text fields as the program is run. It is then stored inside a text file after the program is quitted. Each patient is assigned a unique ID in order to identify them more easily.</p>
<p>The information regarding the owner of a new patient.</p> <p>Example  First Name: David  Last Name: Barton  Email: davidbarton1@gmail.com  Telephone Number: 949-623-2337  Address: 3967 Beech Street  Oakland, CA 94607</p>	<p>Comments</p> <p>This information is also obtained from text fields as the program is run. It is then stored inside a text file after the program is quitted. The user is only asked for this information is the patient belongs to a new owner who does not have any other animals as patients. Otherwise, this information is not required and the owner name can just be selected from a list.</p>
<p>The information about a new doctor arriving in the hospital is entered.</p> <p>Example  First Name: Patrick  Last Name: Arnold  Email: arnoldpat3@gmail.com  Telephone Number: 309-288-7088  Address: 4690 Apple Lane  Mineral, IL 61344</p>	<p>Comments</p> <p>This information is obtained from text fields as the program is run. It is then stored inside a text file after the program is quitted. Each doctor is assigned a unique ID in order to identify them more easily.</p>
<p>The information regarding a new appointment is entered.</p> <p>Example  Appointment Type: Vaccination  Main Purpose: Annual Vaccination  Doctor: Patrick Arnold  Patient: Oreo  Appointment Description: rabies intramuscular injectable vaccine  Year: 2017</p>	<p>Comments</p> <p>This information is obtained from text fields as the program is run. It is then stored inside a text file after the program is quitted. When storing inside text files the unique IDs of the doctors and patients involved are stored along with the information of this appointment.</p>

Month:03 Day: 12 Start time: 12:00 (Estimated) End time: 12:30	
The information regarding the arrival of a new medicine in stock is entered.  Example Name: Midazolam (5mg/mL) 2mL x 10 Quantity: 14 Description: used for anesthesia	Comments This information is obtained from text fields as the program is run. It is then stored inside a text file after the program is quitted. If the quantity is 0, then the medicine is automatically removed from the system.

#### Output Data

The information about a patient is displayed if their button is clicked.	Comments  The information for all of this data is stored in text files. As the program is first opened all the data is extracted from the text files into the program thus this information can be displayed as the program is running.
The information about a doctor is displayed if their button is clicked.	
The information about a medicine can be displayed if its button is clicked.	
The information about an appointment can be displayed if its button is clicked	

Word count: 150