

Virtual Animal Health Clinic

A desktop application to facilitate managing medical care-related resources for pets.

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Background, high-level view

The Virtual Animal Health Clinic provide solutions to the following problems:



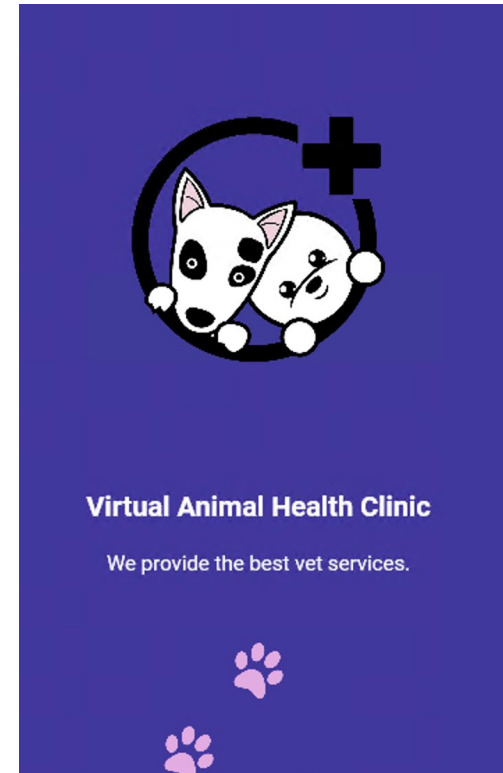
- Duplicate profiles
- Dated contact information
- No way to connect members of admin team with tasks
- No way to manage medication inventory
- Incomplete pet medical histories



Solution overview

Members of the in-person clinic's reception and veterinary teams can access the application as administrators.

Registration and login require a valid email address and password, and the application assigns each user a unique ID.



Email

tom@email.com

Password

●●●●●●●●

[Log In](#) or [Sign up](#)

Features and functionalities: veterinarian

Create, read, update, delete the following:

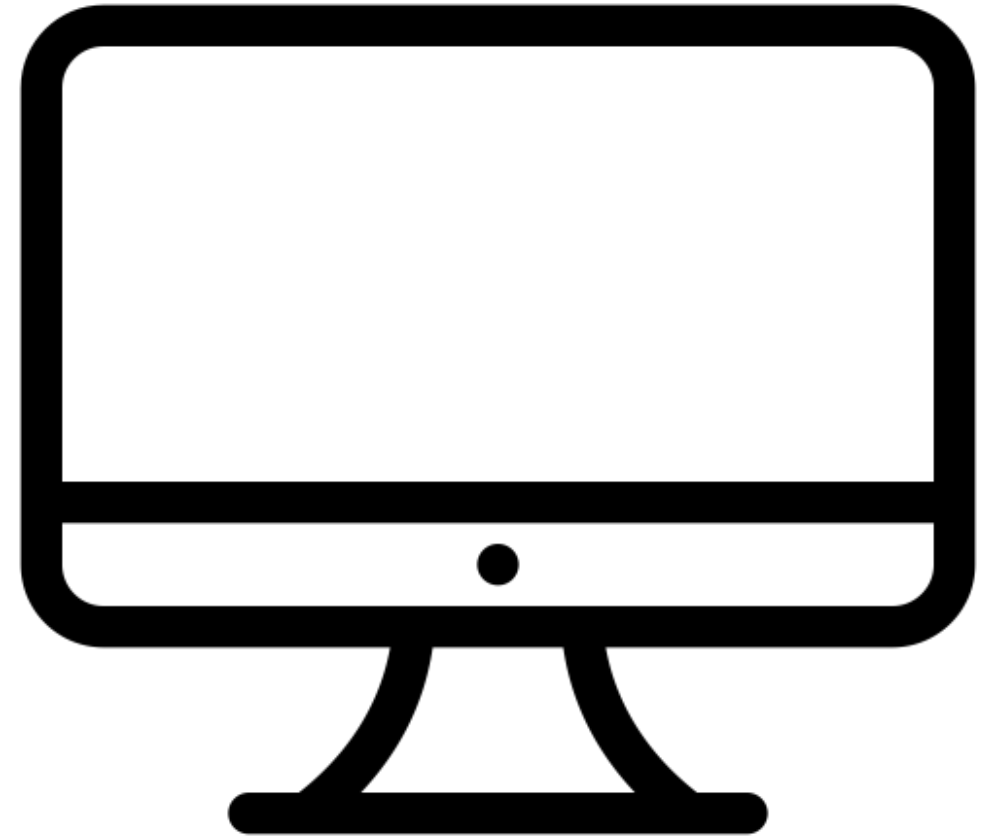
- Prescriptions
- Notes in animal's medical history



Features and functionalities: receptionist

Create, read, update, delete the following:

- Owner, pet, veterinarian profiles
- Medication inventory
- Appointments




Implementations (1 of 2)

- Register, login
- User, owner, pet profiles



| Add or Edit User | | | | | | |
|------------------|----------|--------|--------------------|-------------|------------|------|
| User Id | Username | Name | Email | Password | Phone | Role |
| 1 | Tom | Tom | tom@email.com | Aaaaa1111** | 1234567890 | 1 |
| 5 | Tom1 | Tom | tom1@email.com | Aaaaa1111** | 1234567890 | 1 |
| 6 | Tom3 | Tom3 | tom3@email.com | Aaaaa1111** | 1234567890 | 1 |
| 7 | TomVet | TomVet | tomVet@email.com | Aaaaa1111** | 1234567890 | 1 |
| 10 | TomAdmin | Tom | tomAdmin@email.com | Aaaaa1111** | 1234567890 | 0 |
| 11 | Kristy | Tom | kristy@email.com | Aaaaa1111** | 1234567890 | 0 |
| 12 | Kristy1 | Tom | kristy1@email.com | Aaaaa1111** | 1234567890 | 0 |

Implementations (2 of 2)




Prescriptions

Add Drug

Add Appointment

Cancel



Appointment

| Appoint | Vet ID | Owner ID | Pet ID | When | Note |
|---------|--------|----------|--------|------------------------|-----------------|
| 6 | 1 | 6 | 6 | 10/19/2022 11:07:55 AM | Need medical ca |
| 7 | 1 | 6 | 6 | 10/19/2022 11:08:08 AM | Need medical ca |
| 8 | 1 | 6 | 6 | 10/19/2022 1:01:55 PM | Need medical ca |

Edit Prescription

| ID | Appointment ID | Drug ID | Quantity |
|----|----------------|---------|----------|
| 4 | 6 | 1 | 2 |
| 6 | 7 | 1 | 3 |
| 7 | 7 | 4 | 2 |
| 8 | 8 | 5 | 3 |

Status

- Appointments (manage and schedule)
- Prescriptions

Technologies used

```
<StackPanel Margin="0 10 0 0" VerticalAlignment="Top">
  <StackPanel Orientation="Horizontal">
    <Image Source="/images/pic.png" Margin="0 0 0 40" Width="80" Height="80"/>
    <TextBlock FontWeight="Bold" FontSize="23" Text="Admin Panel" Foreground="■" "#ffff" Height="57"/>
  </StackPanel>
  <Button x:Name="BtnVets" Content="Users" materialDesign:ButtonAssist.CornerRadius="22" FontSize="26" Height="45" Width="111" Foreground="■" "#ffff" Click="BtnVets_Click" Style="{StaticResource MaterialDesignFlatButton}"/>
  <Button Name="BtnOwners" Content="Owners" materialDesign:ButtonAssist.CornerRadius="22" FontSize="26" Height="45" Width="141" Margin="0 10 0 0" Foreground="■" "#ffff" Click="BtnOwners_Click" Style="{StaticResource MaterialDe
```

We used many technologies, including WPF, C#, Entity Framework, multiple windows, StackPanel, GridSplitter, LINQ, SQL Database via Azure, and the Material Design Toolkit.

We also implemented authentication for administrators.

Image support????, UserControl?

Challenges and solutions

- Challenge: Program will not start as a result of errors (specifically, .obj and .bin)
- Explanation: The .gitignore only applies to untracked files. If a file has been committed and is then edited, the .gitignore will have no effect.
- Solution: Create new repository with .gitignore file before committing any other file. (We learned the hard way 😞).

Challenges and solutions — challenge name

- Challenge: How to choose a specific value from a ComboBox
- Solution: ComboBox.SelectedValue

```
if (ComboBoxDrug.SelectedItem != null)
{
    string drugIdStr = ComboBoxDrug.SelectedValue.ToString();
    int drugId = Convert.ToInt32(drugIdStr);

    int.TryParse(ComboBoxDrug.SelectedValuePath, out int drug_id);
    int price = 20;

    Prescription newPrescription = new Prescription(currAppointment.id, drugId, quantity, price);
    Globals.dbContext.Prescriptions.Add(newPrescription);
    Globals.dbContext.SaveChanges(); // SystemException
}
```

Challenges and solutions

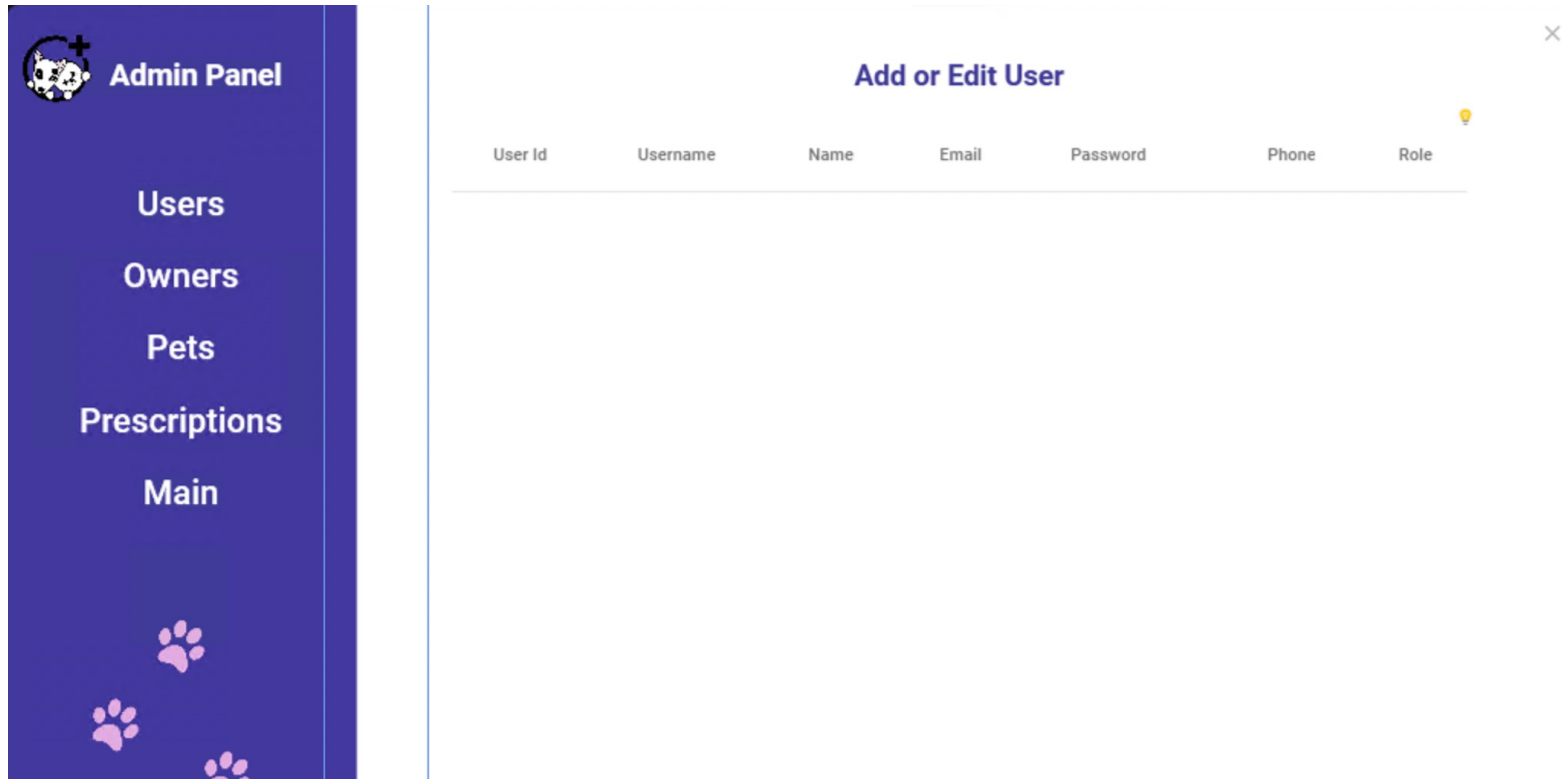
- Challenge: Using User Control for navigation with a transparent home page
- Solution: Set up User Control pages (windows), add them over the main window

What we learned — StackPanel, GridSplitter

- At first difficult to visualize window as grid system, StackPanel as a layout control that holds other controls within it
- Multiple StackPanels (children) to create complex design
- Basic example:

```
<Grid>
    <StackPanel Margin="0 10 0 0" VerticalAlignment="Top">
        <StackPanel Orientation="Horizontal">
            <Image Source="/images/vet.png"/>
            <TextBlock Text="Our veterinarians"/>
        </StackPanel>
        <Button x:Name="BtnVets" Content="See list of vets"/>
    </StackPanel>
</Grid>
```

What we learned — StackPanel, GridSplitter



Another example of using GridSplitter and StackPanel to control the layout of a window

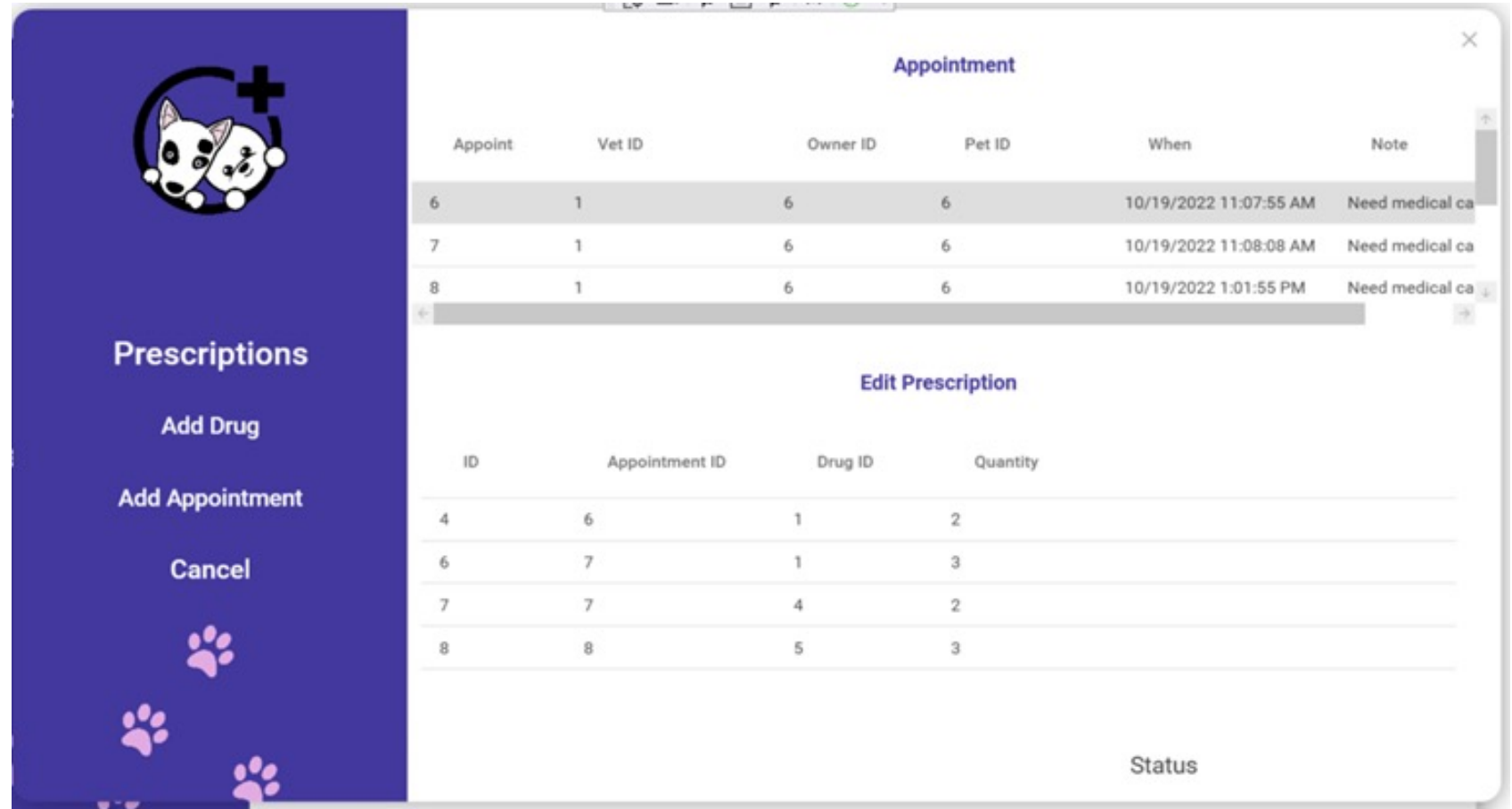
What we learned — Material Design

An example of code from Material Design, what we learned was the library for UI:

```
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
xmlns:materialDesign="http://materialdesigninxaml.net/winfx/xaml/themes"
FontSize="18" FontFamily="{DynamicResource MaterialDesignFont}" ResizeMode="NoResize"
WindowStartupLocation="CenterScreen" WindowStyle="None" AllowsTransparency="True" Background="Transparent"
-- ... --
```

What we learned — Material Design

The result:

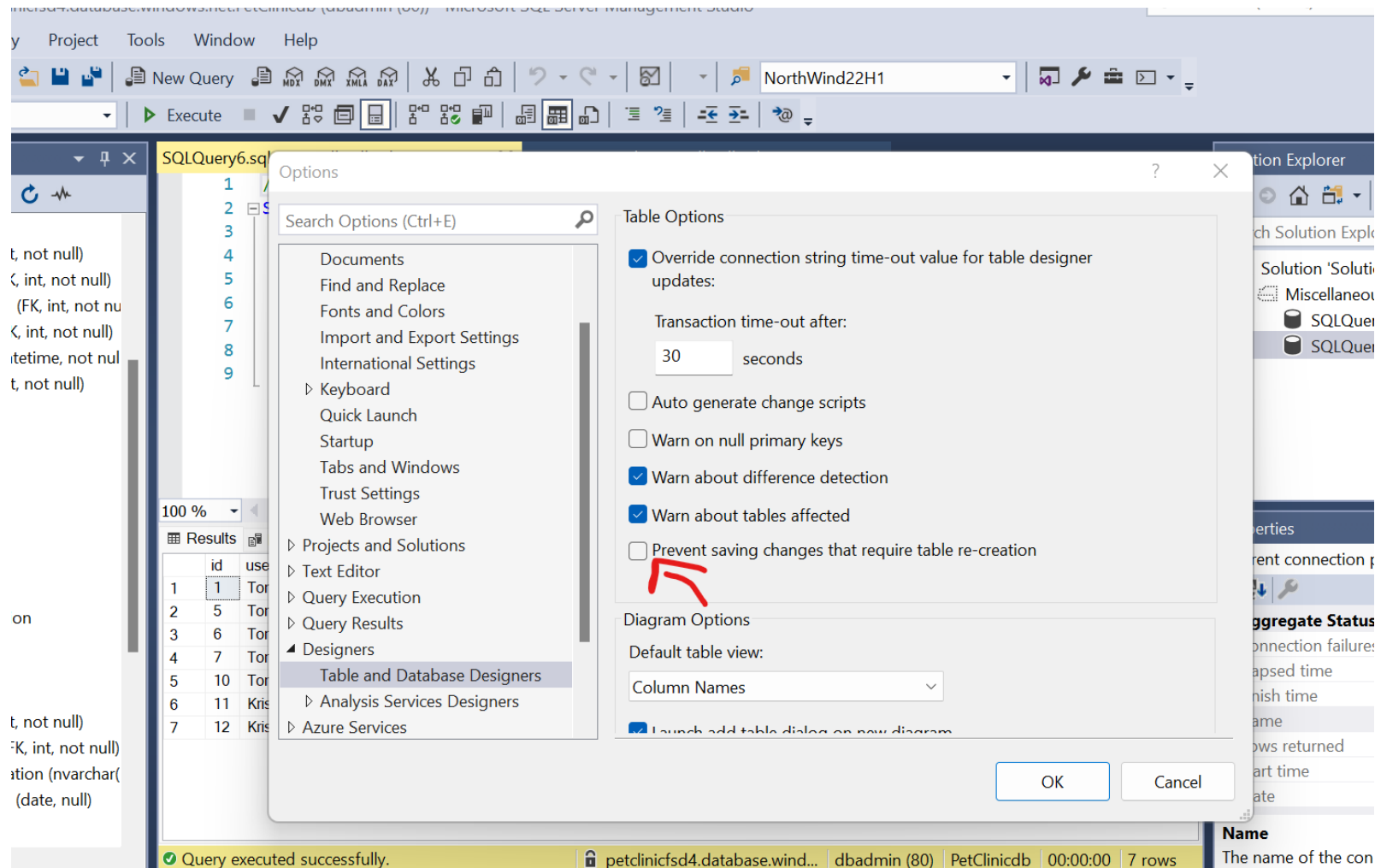


What we learned — Changing DB in SQL

In a nutshell, these were the steps:

- Tools -> Options -> Designer (uncheck “prevent saving changes)
- From there, add indexes and keys and increment using this method

What we learned — Changing DB in SQL



Future work

- Include animals' avatars in their profile: accessing avatars (BLOBs) separately from list of animals to conserve memory and prioritize speed.
- Convert prescriptions to PDF files
- Export lists (medication inventory, for example) to Excel



Summary

- Created a desktop application to manage several aspects of a veterinary clinics that are at risk of disorganization.
- Fulfilled basic aspirations (scheduling/managing appointments, tracking medication inventory, profiles).
- Aimed high for special features (animal avatars, prescription PDFs, lists to Excel), and did not quite reach them.

