Customer Relationship Management (CRM)

- **What is CRM?**

Customer relationship management (**CRM**) is a technology to manage and analyze customer interactions throughout the customer lifecycle, with the goal of improving business relationships with current customers and potential customers.

B y :

Vajiheh Seyedzadeh

Winoto Janputra

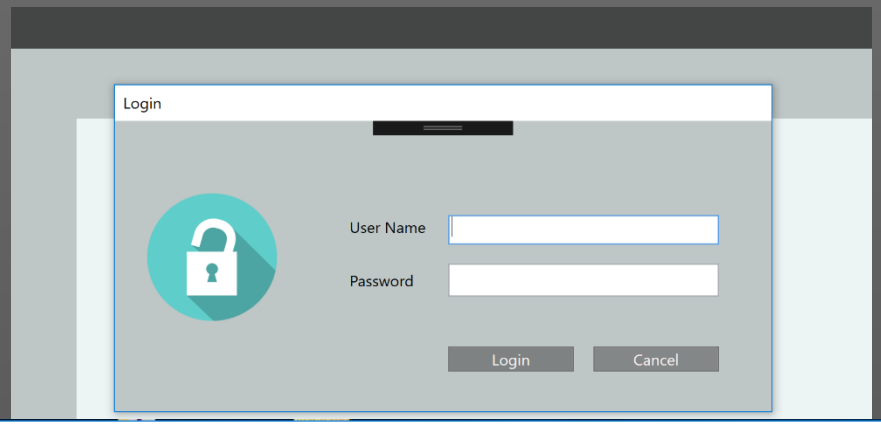
Fall - 2017

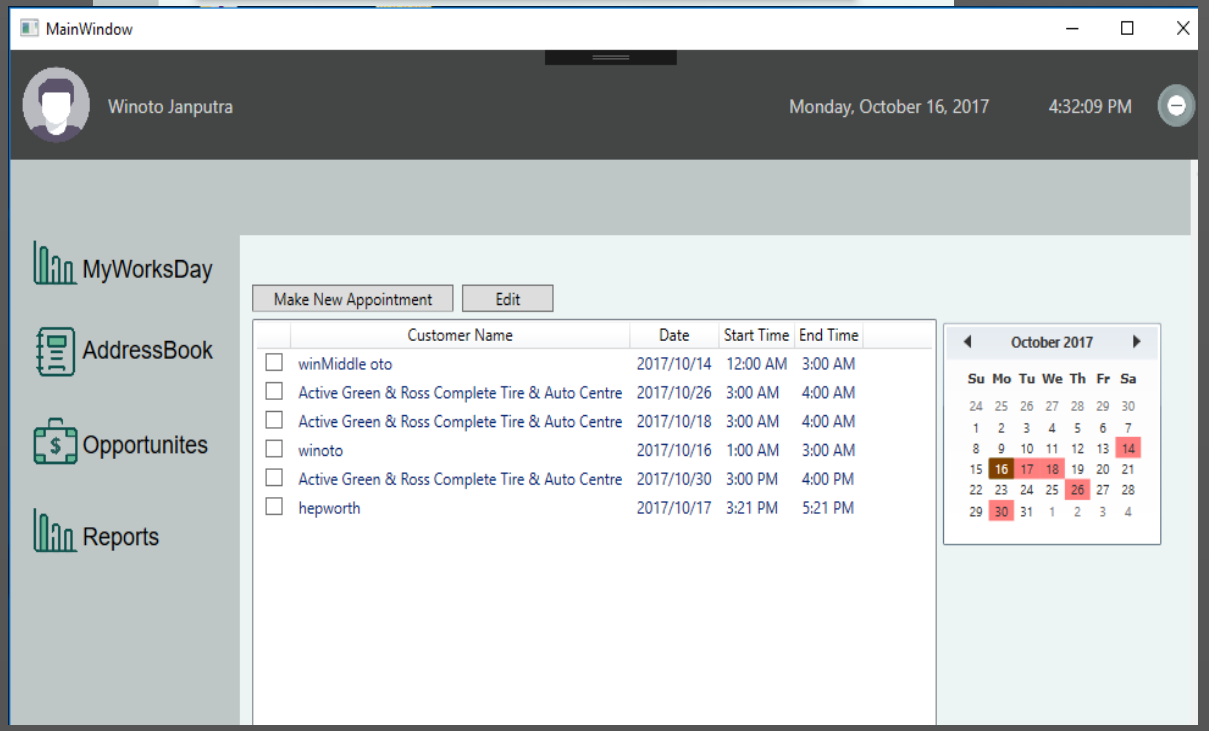
Background

- Mini CRM to Record current Customer information and potential customers
- Record every interaction between Customer and Sales Person
- Ability of show works day of Sales Person
- Ability to query all data with read only access
- As a Manager, track Sales Person activity
- Show reports as a data table and diagram with ability of export in to excel file and print in to
- The goal is simple: Improve business relationships and increase efficiency.

My Works Day :

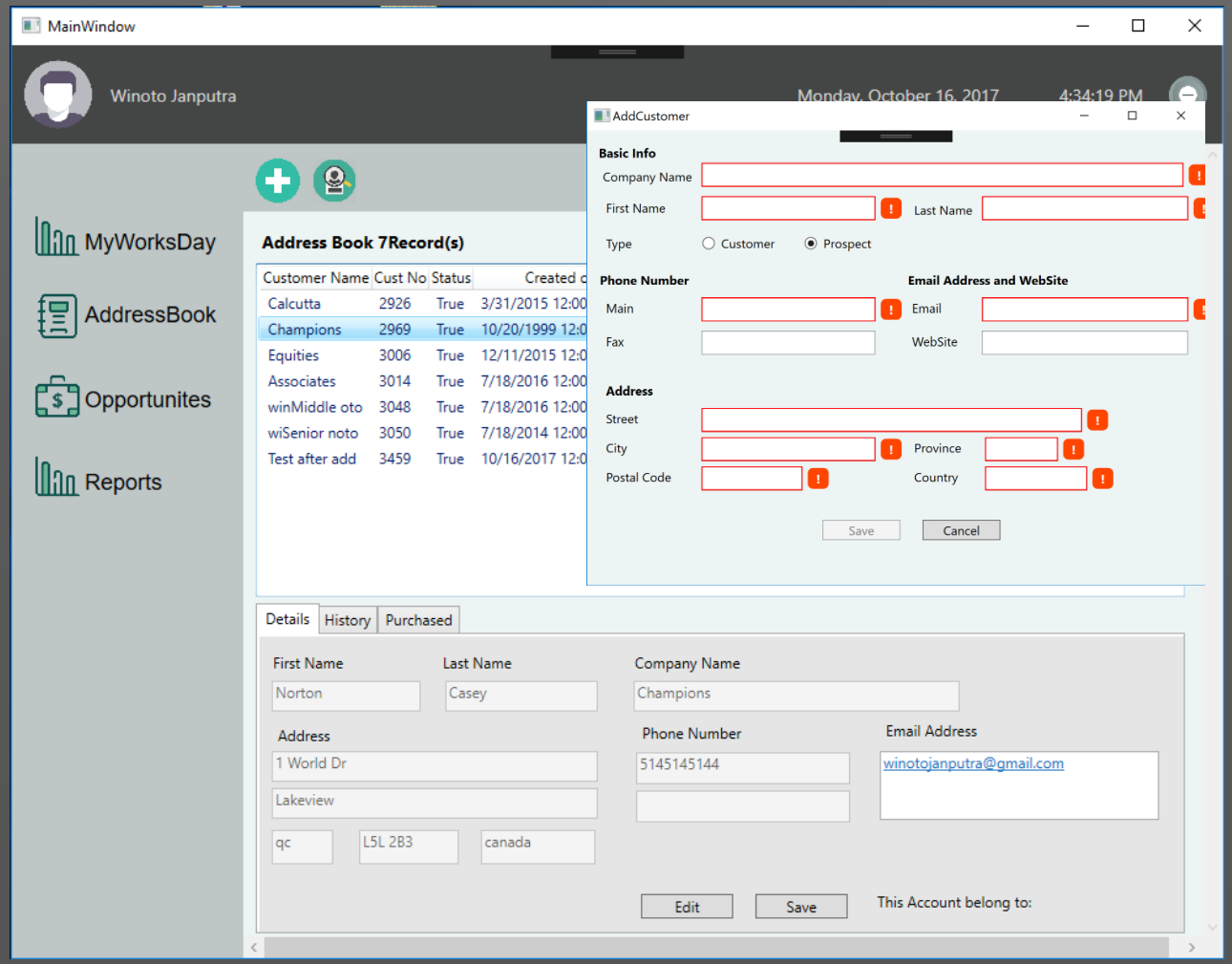
- show list of appointments





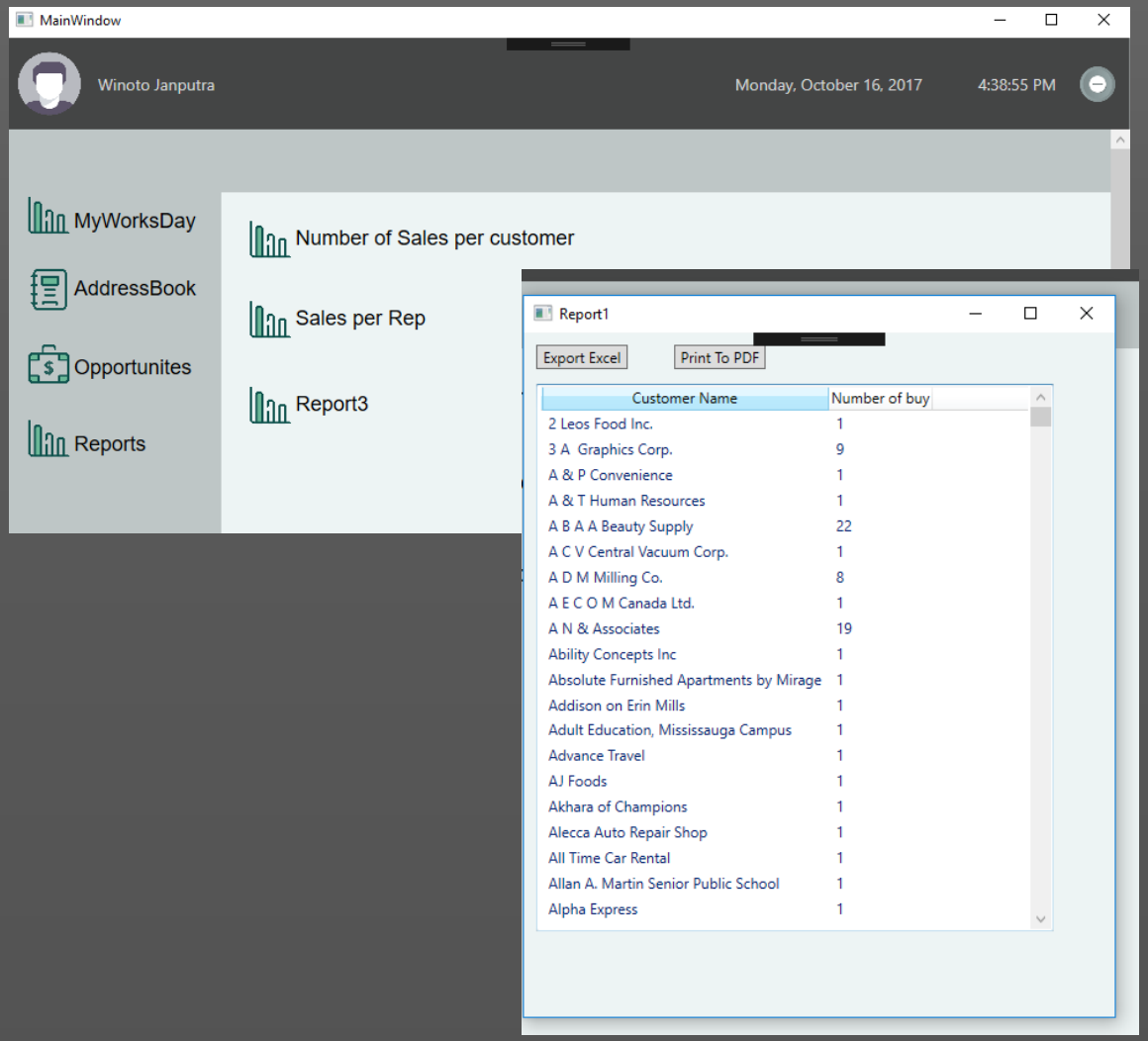
Address Book

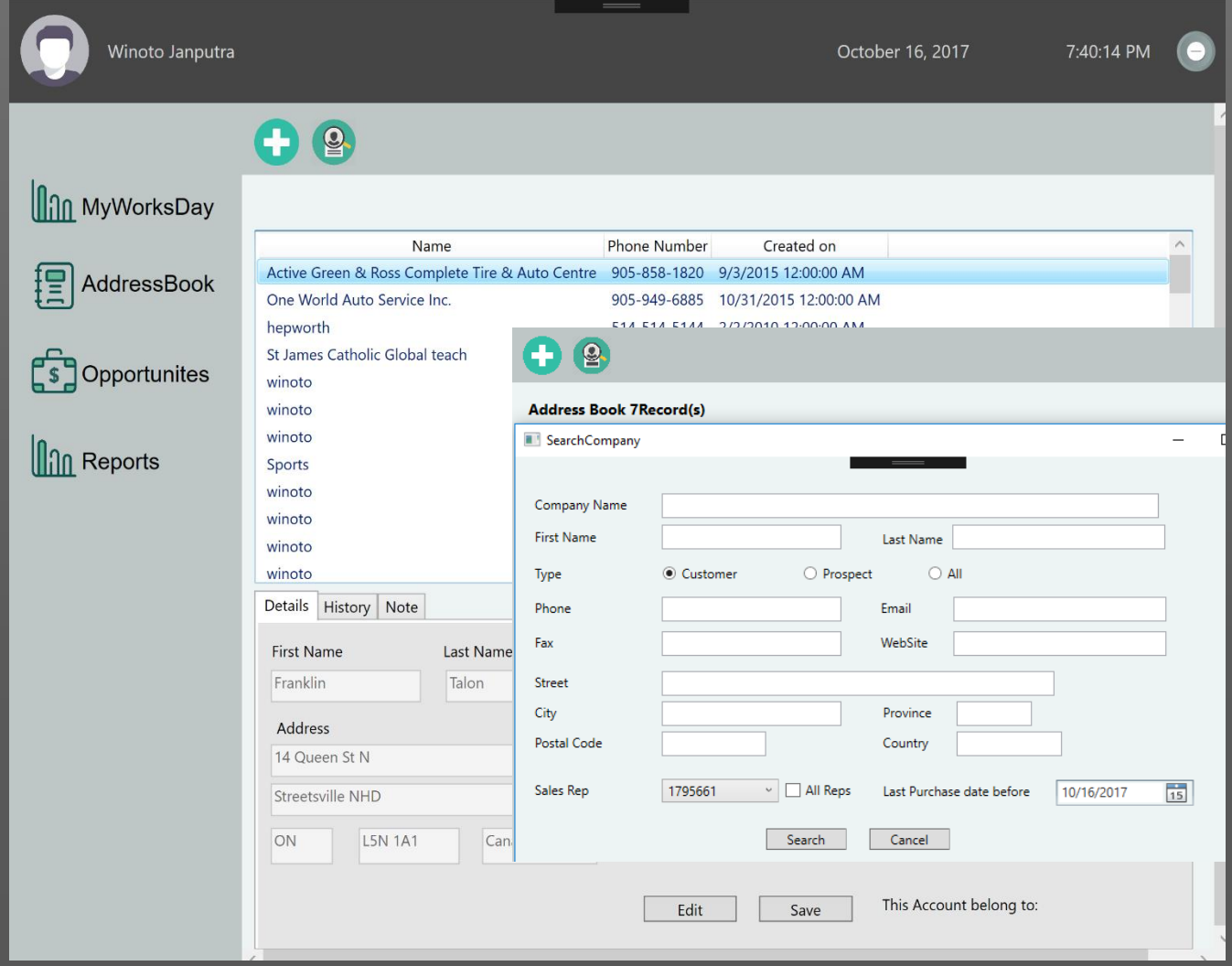
- is using to show all Customers and their information



Report

- Number of Sales per Customer to excel and PDF
- Sales Per Sales Rep YTD





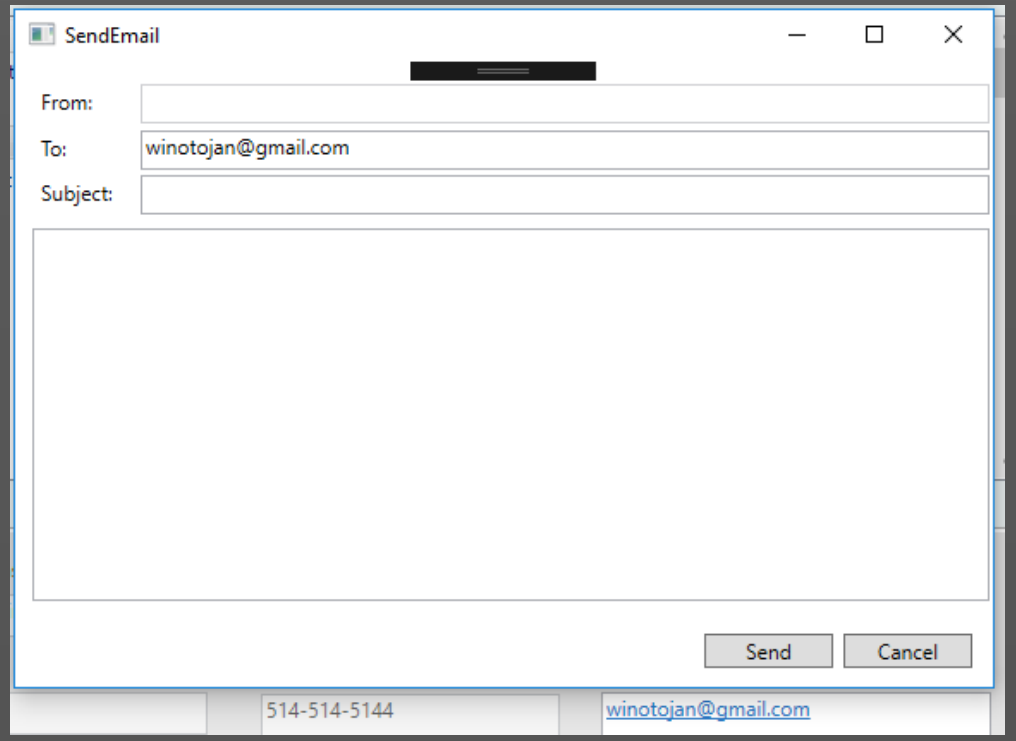
Opportunities

- See potential customers list with its contact information, conversation
- Add new and Search prospect

Challenges And Solutions

- Use Frame in Main Window
- Keep user id from login screen to be used in other pages
- Prevent user to close login screen without enter the information
- Send Email and Create Calendar using Outlook (Using Interop.Outlook)

```
Outlook._Application _app;

try
{
    _app = (Outlook.Application)Marshal.GetActiveObject("Outlook.Application");
}
catch(Exception)
{
    _app = new Outlook.Application();
}
try
{
    Outlook.MailItem mail = (Outlook.MailItem)_app.CreateItem(Outlook.OlItemType.olMailItem);
    mail.To = _Recipient;
    mail.Subject = tbSubject.Text;
    mail.Body = tbBody.Text;
    mail.Importance = Outlook.OlImportance.olImportanceNormal;
    ((Outlook._MailItem)mail).Send();
    db.RecordMessage(tbSubject.Text, tbBody.Text, "Email", _CompanyId, int.Parse(_Sender));
tbSubject.Text = string.Empty;
tbBody.Text = string.Empty;
    this.Close();
```

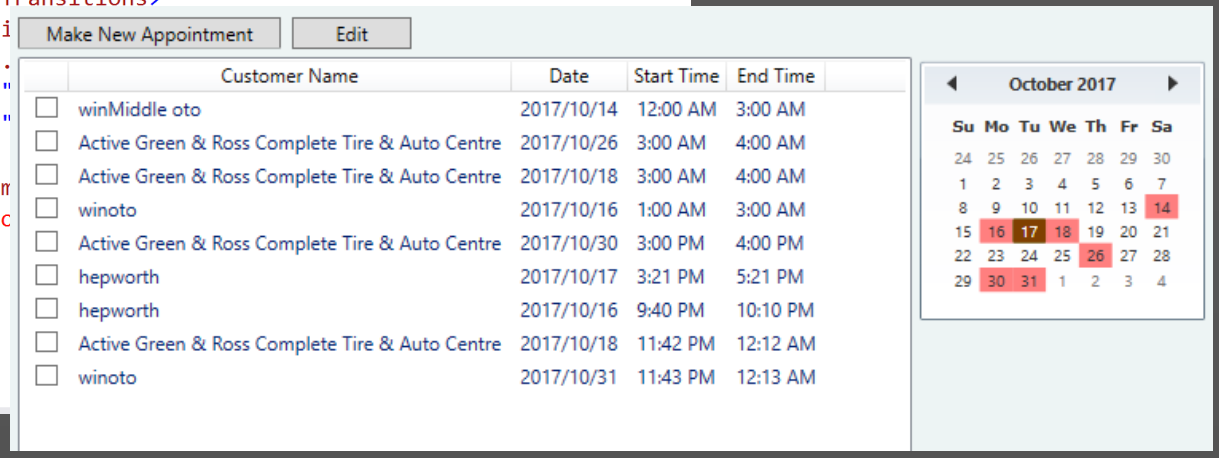


- Changed the background of the calendar's day

App.xaml

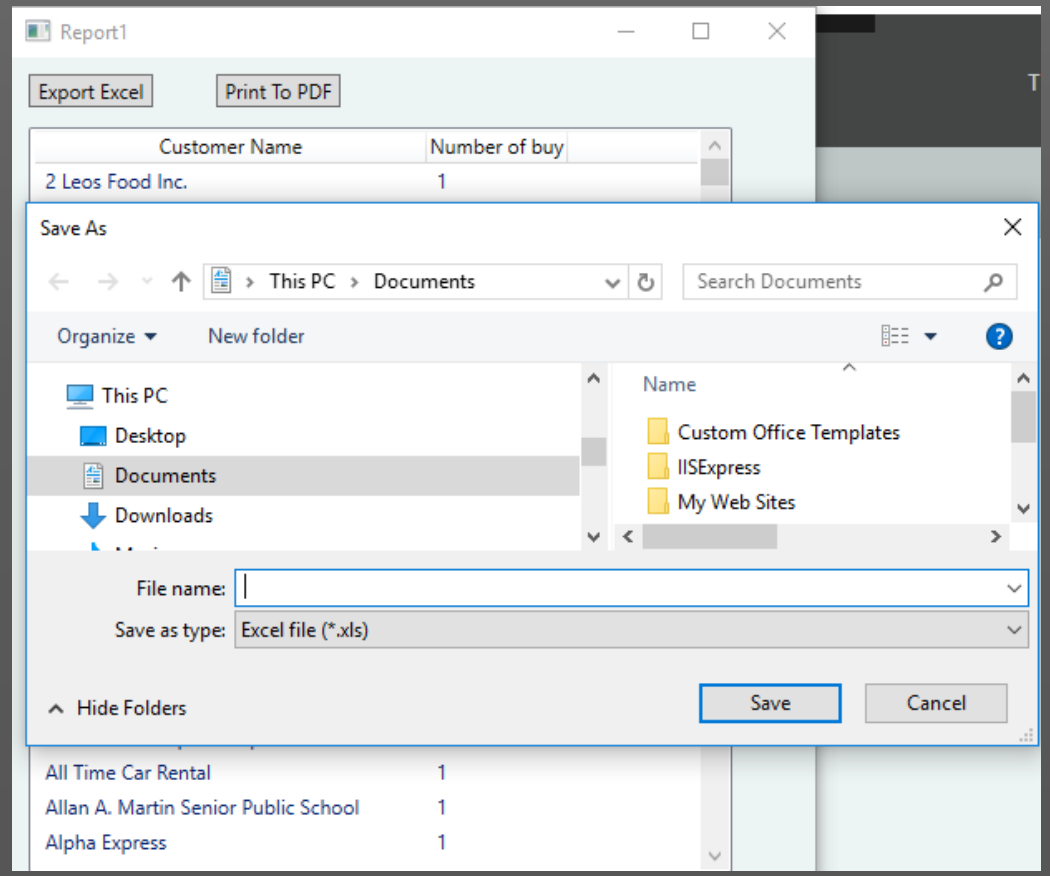
```
<Style TargetType="CalendarDayButton"
x:Key="CalendarDayButtonStyle">
    <Setter Property="MinWidth" Value="5" />
    <Setter Property="MinHeight" Value="5" />
    <Setter Property="FontSize"  Value="10" />
    <Setter Property="HorizontalContentAlignment" Value="Center" />
    <Setter Property="VerticalContentAlignment"  Value="Center" />
    <Setter Property="Template">
        <Setter.Value>
            <ControlTemplate TargetType="CalendarDayButton">
                <Grid>
                    <VisualStateManager.VisualStateGroups>
                        <VisualStateGroup Name="CommonStates">
                            <VisualStateGroup.Transitions>
                                <VisualTransition GeneratedDuration="0:0:0.1" />
                            </VisualStateGroup.Transitions>
                            <VisualState Name="Normal" />
                            <VisualState Name="MouseOver"...>
                            <VisualState Name="Pressed"...>
                            <VisualState Name="Disabled"...>
                        </VisualStateGroup>
                        <VisualStateGroup Name="SelectionStates">
                            <VisualStateGroup.Transitions>
                                <VisualTransiti
                            </VisualStateGroup.
                            <VisualState Name="
                            <VisualState Name="
                                <Storyboard>
                                    <DoubleAnim
                                Storyboard.TargetPro
                                To=".75"
                                Duration="0" />
                                </Storyboard>
                            </VisualState>
                        </VisualStateGroup>
```

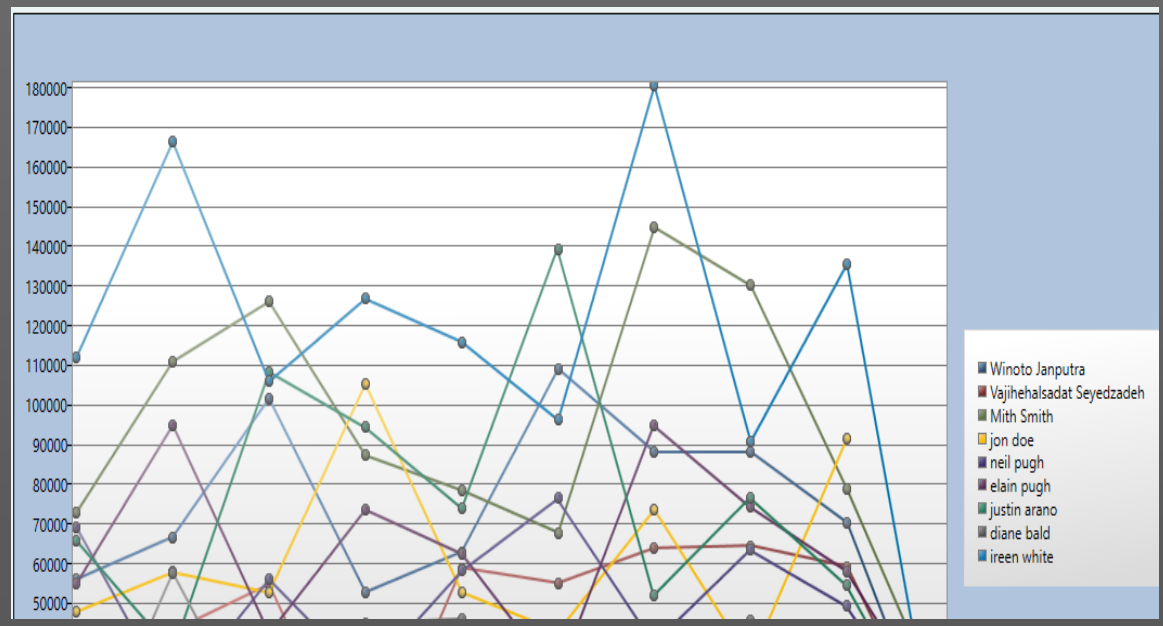
```
public class AppointmentDayConverter : IValueConverter
{
    static Dictionary<DateTime, string> dict = new Dictionary<DateTime, string>();

    public static Dictionary<DateTime, string> Dict
    {
        get { return dict; }
    }

    public static void LoadAppointments(List<DateTime> date)
    {
        foreach (DateTime d in date)
        {
            var key = new DateTime(d.Year, d.Month, d.Day);
            if (!dict.ContainsKey(key))
            {
                dict.Add(key, "New Appointment");
            }
        }
    }

    public object Convert(object value, Type targetType, object parameter, CultureInfo culture)
    {
        string text;
        if (!dict.TryGetValue((DateTime)value, out text))
            text = null;
        return text;
    }

    public object ConvertBack(object value, Type targetType, object parameter, CultureInfo culture)
    {
        return value;
```



Appointment Day Convertor.cs

- Export to Excel and Print to PDF (Using DocumentFormatOpenXml and ITextSharp)
- Create Graphic with multiline






```
private void LoadLineChartData()
{
    List<SalesPerRep> list = db.GetSalesYTD();
    list.Sort((a, b) => string.Compare(a.RepId.ToString(), b.RepId.ToString()));
    string FullName = "";
    int id = 0;
    int count = 0;


    foreach (SalesPerRep s in list)
    {
        if (id != s.RepId)
        {
            id = s.RepId;
            List<SalesPerRep> result = (from l in list where l.RepId == id select l).ToList();
            Dictionary<int, decimal> salesrep = new Dictionary<int, decimal>();

            foreach (SalesPerRep r in result)
            {
                salesrep.Add(r.Mth, r.Total);
            }

            ((LineSeries)mcChart.Series[count]).ItemsSource = salesrep;
```

- Client side validation
- Sorting without MVVM

```
if (columnName == "ContactLastName")
{
    if (string.IsNullOrEmpty(ContactLastName) || ContactLastName.Length < 2
        result = "Please enter a Name (2-50 Chars)";
}
if (columnName == "Email")
{
    Regex regex = new Regex(@"^[\w!#$%&'*+\-/=?\^_`{|}~]+(\.[\w!#$%&'*+\-/=?
    if (string.IsNullOrEmpty(Email))
        result = "Please enter an Email";
    else if(!regex.Match(Email).Success)
    {
        result = "Please enter a valid Email":
```

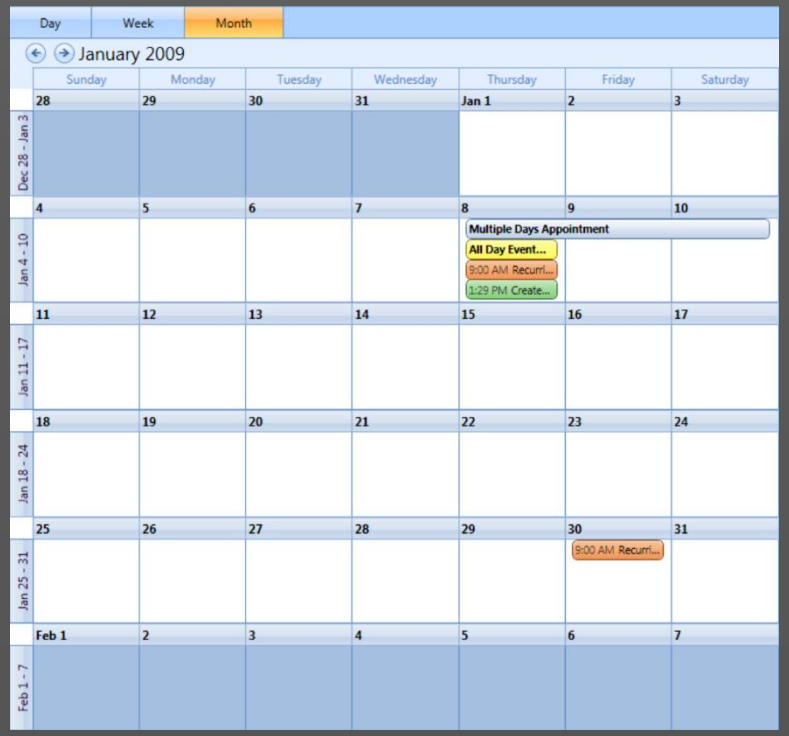
Search Result: 312 Record(s)

Customer Name	Cust No	Status	Created on	Last Purch Date	La
A B A A Beauty Supply	3187	True	10/31/2016 12:00:00 AM	2017-08-31 12:00:00 AM	
A E C O M Canada Ltd.	2898	True	7/21/2014 12:00:00 AM	2017-09-14 12:00:00 AM	
A N & Associates	2976	True	10/31/2015 12:00:00 AM	2017-06-12 12:00:00 AM	
Absolute Furnished Apartments by Mirage	3180	True	10/31/2016 12:00:00 AM	2017-06-17 12:00:00 AM	
Adult Education, Mississauga Campus	3028	True	7/18/2016 12:00:00 AM	2017-07-17 12:00:00 AM	

```
void GridViewColumnHeaderClickedHandler(object sender, RoutedEventArgs e)
{
    string header = ((GridViewColumnHeader)e.OriginalSource).Column.Header.ToString();
    List<Customer> list = db.GetAllCustomers();
    if (lastHeaderAddress == header)
    {
        switch (header)
        {
            case "Customer Name":
                list.Sort((x, y) => -1 * x.CompanyName.CompareTo(y.CompanyName));
                break;
        .........
        }
        lastHeaderAddress = string.Empty;
    }
    else
    {
        .........
        switch (header)
        {

            case "Last Purch Amount":
                list.Sort((x, y) => x.Amount.CompareTo(y.Amount));
                break;
            default:
                return;
        }
        lastHeaderAddress = header;
    }
    lvAddress.Items.Clear();
    foreach (Customer c in list)
    {
        lvAddress.Items.Add(c);
```

Future Works

- Localization(Localization is the translation of application resources into localized versions for the specific cultures that the application supports.)
- Installation
- Change the view of the Calendar (show the List of appointment like schedule)



What we learned:

- Concept of Object Oriented Programming
- Using MVVM few part of the project (Separation of logic and presentation)
- Use different type of controls in WPF:
  - Data Display: DataGrid, ListView
  - Date Display and Selection: Calendar, DatePicker and TimePicker
  - Layout: DockPanel, StackPanel
  - Navigation: Frame, TabControl, Page, Window
- Make different Template and style for control

Thank you for your time!