# 现代操作系统应用开发实验报告

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## 一．参考资料

Windows UWP Namespaces：https://docs.microsoft.com/en-us/uwp/api/

C# 时 间 日 期 操 作 ：

http://www.cnblogs.com/loveme123/archive/2012/06/27/2565547.html

课件、Demo

## 二．实验步骤

1. 阅读作业要求，新建项目并添加一个 NewPage 页面，在 Assets 文件中添加

   背景图和主页图素材

2. 确定作业应用外观样式 采用 Grid 框架 ,并应用 CheckBox、Image、TextBlock

   和 AppBarButton 控件并添加底部按钮，NewPage 页面同理（以 NewPage

   页为例）

```
        <TextBlock x:Name="textBlock" Grid.Row="0" Text="Edit Todo Item"
Style="{StaticResource HeaderTextBlockStyle}"/>
        <Grid Grid.Row="1">
            <ScrollViewer>
                <StackPanel>
                    <Image Name="main_pic" Source="Assets/fruit.jpg" Width="350"
Height="216" Stretch="UniformToFill"/>
                    <RelativePanel Width="350" Height="46">
```

```xml
                            <AppBarButton x:Name="SelectPictureButton" Icon="Pictures"
Label="select" RelativePanel.AlignRightWithPanel="True"
Click="SelectPictureButton_Click" Margin="-68,0,0,0"
RenderTransformOrigin="2.007,0.525" Height="42" Width="58"/>
                        </RelativePanel>
                        <TextBox Name ="title" Width="350" Header="Title"
Margin="0,8,0,0" Text=""/>
                        <TextBox Name ="details" Width="350" Height="96" Margin="0,8,0,0"
Header="Details" Text="" />
                        <DatePicker Name ="date" Width="350" Margin="0,8,0,0" Header="Due
Date" HorizontalAlignment="Center" />
                        <RelativePanel Width="350" Margin="0,24,0,0">
                            <Button x:Name="createButton" Content="Create"
Click="CreatButton_Click"></Button>
                            <Button x:Name="CancelButton" Content="Cancel"
RelativePanel.AlignRightWithPanel="True" Click="CancelButton_Click"></Button>
                        </RelativePanel>
                    </StackPanel>
                </ScrollViewer>
            </Grid>
            <Image x:Name="background" Grid.RowSpan="2" VerticalAlignment="Bottom"
Source="Assets/color.jpg" Canvas.ZIndex="-1" Height="1080"
Margin="-477,-277,-483,-163"/>
        </Grid>
    <Page.BottomAppBar>
        <CommandBar>
            <AppBarButton x:Name="DeleteAppBarButton" Icon="Back" Label="Add"
Click="AddAppBarButton_Click"/>
        </CommandBar>
    </Page.BottomAppBar>
```

## 3. 预处理页面

```csharp
public MainPage()
{
    this.InitializeComponent();
    var viewTitleBar =
Windows.UI.ViewManagement.ApplicationView.GetForCurrentView().TitleBar;
    viewTitleBar.BackgroundColor = Windows.UI.Colors.CornflowerBlue;
    viewTitleBar.ButtonBackgroundColor = Windows.UI.Colors.CornflowerBlue;
}
```

## 4. 确定页面逻辑：MainPage 页的 CheckBox 勾选和点击跳转到 NewPage 页

```csharp
private void visible_click(object sender, RoutedEventArgs e)
{
```

```
        if (this.checkbox1.IsChecked == true)
        {
            this.line1.Visibility = Visibility.Visible;
        }
        else
        {
            this.line1.Visibility = Visibility.Collapsed;
        }
        if (this.checkbox2.IsChecked == true)
        {
            this.line2.Visibility = Visibility.Visible;
        }
        else
        {
            this.line2.Visibility = Visibility.Collapsed;
        }
    }
    private void AddAppBarButton_Click(object sender, RoutedEventArgs e)
    {
        Frame.Navigate(typeof(NewPage), "");
    }
```

5. NewPage 页的 Create 和 Cancle 按钮及选择文件中图片事件，注意比较时间、

   Cancle 时回复原主图片和引入文件中图片需加上图片选择器

```
private void CreatButton_Click(object sender, RoutedEventArgs e)
    {
        if (title.Text == "")
        {
            var i = new MessageDialog("Title can not be empty!").ShowAsync();
        }
        if (details.Text == "")
        {
            var i = new MessageDialog("Detail can not be empty!").ShowAsync();
        }
        if (date.Date.CompareTo(DateTime.Today) < 0)
        {
            var i = new MessageDialog("The due date has passed!").ShowAsync();
        }
        if (title.Text != "" && details.Text != "" &&
date.Date.CompareTo(DateTime.Today) >= 0)
        {
            var i = new MessageDialog("Create success!").ShowAsync();
        }
```

```csharp
        }
        private async void CancelButton_Click(object sender, RoutedEventArgs e)
        {
            title.Text = "";
            details.Text = "";
            date.Date = System.DateTime.Now;
            RandomAccessStreamReference img =
RandomAccessStreamReference.CreateFromUri(new Uri("ms-appx:///Assets/fruit.jpg"));
            IRandomAccessStream stream = await img.OpenReadAsync();
            Windows.UI.Xaml.Media.Imaging.BitmapImage bmp = new
Windows.UI.Xaml.Media.Imaging.BitmapImage();
            bmp.SetSource(stream);
            main_pic.Source = bmp;
        }
        private async void SelectPictureButton_Click(object sender, RoutedEventArgs e)
        {
            Windows.Storage.Pickers.FileOpenPicker newphoto = new FileOpenPicker();
            newphoto.FileTypeFilter.Add(".jpg");
            newphoto.FileTypeFilter.Add(".jpeg");
            newphoto.FileTypeFilter.Add(".png");
            newphoto.SuggestedStartLocation = PickerLocationId.PicturesLibrary;
            StorageFile file = await newphoto.PickSingleFileAsync();
            if (file != null)
            {
                IRandomAccessStream stream = await file.OpenAsync(FileAccessMode.Read);
                Windows.UI.Xaml.Media.Imaging.BitmapImage bmp = new
Windows.UI.Xaml.Media.Imaging.BitmapImage();
                bmp.SetSource(stream);
                this.main_pic.Source = bmp;
            }
    }
```

## 6. 设置 NewPage 页右上角返回按钮的功能

```csharp
 /*NewPage.xaml.cs*/
        protected override void OnNavigatedTo(NavigationEventArgs e)
        {
            Frame rootFrame = Window.Current.Content as Frame;
            if (rootFrame.CanGoBack)
            {
                // Show UI in title bar if opted-in and in-app backstack is not empty.
                SystemNavigationManager.GetForCurrentView().AppViewBackButtonVisibility
=
                    AppViewBackButtonVisibility.Visible;
            }
```

```csharp
        else
        {
            // Remove the UI from the title bar if in-app back stack is empty.
            SystemNavigationManager.GetForCurrentView().AppViewBackButtonVisibility
=
                AppViewBackButtonVisibility.Collapsed;
        }
        var i = new MessageDialog("Welcome!").ShowAsync();
    }
```

```csharp
/*App.xaml.cs*/
    // 确保当前窗口处于活动状态
    Window.Current.Activate();

    // register a global listener for the BackRequested event
    // You can register for this event in each page if you want to exclude specific pages
    from back navigation,
    // or you want to execute page-level code before displaying the page.
    Windows.UI.Core.SystemNavigationManager.GetForCurrentView().BackRequested +=
    OnBackRequested;

    private void OnBackRequested(object sender,
Windows.UI.Core.BackRequestedEventArgs e)
    {
        Frame rootFrame = Window.Current.Content as Frame;
        if (rootFrame == null)
            return;

        if (rootFrame.CanGoBack && e.Handled == false)
        {
            e.Handled = true;
            rootFrame.GoBack();
        }
    }
```

## 7. 在App.xaml中调整标题样式

```xml
<Application.Resources>
    <Style x:Key="HeaderTextBlockStyle" TargetType="TextBlock">
        <Setter Property="FontSize" Value="30"/>
        <Setter Property="Margin" Value="20"/>
        <Setter Property="FontWeight" Value="Bold"/>
    </Style>
</Application.Resources>
```

8. 调试项目

## 三．实验结果截图

1. 界面设计与勾选横线
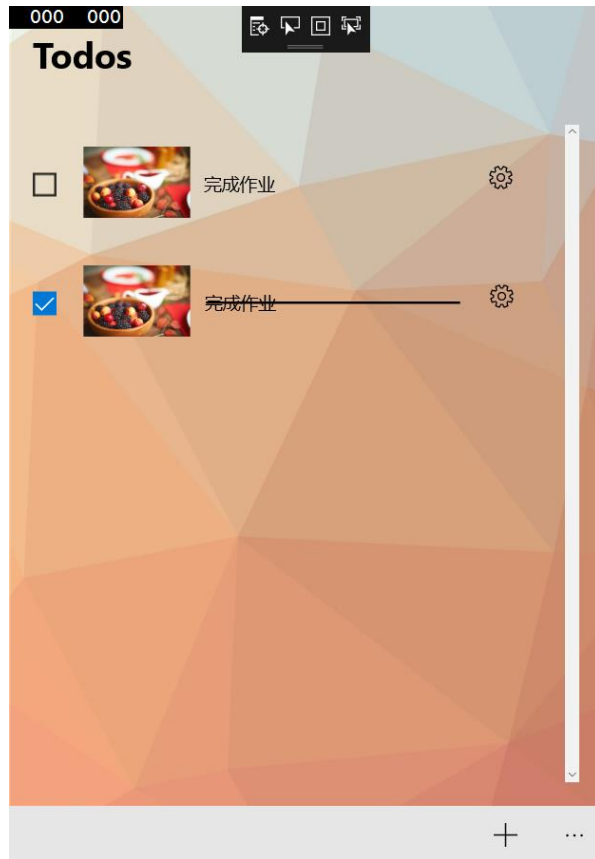


2. 点击底部加号跳转页面
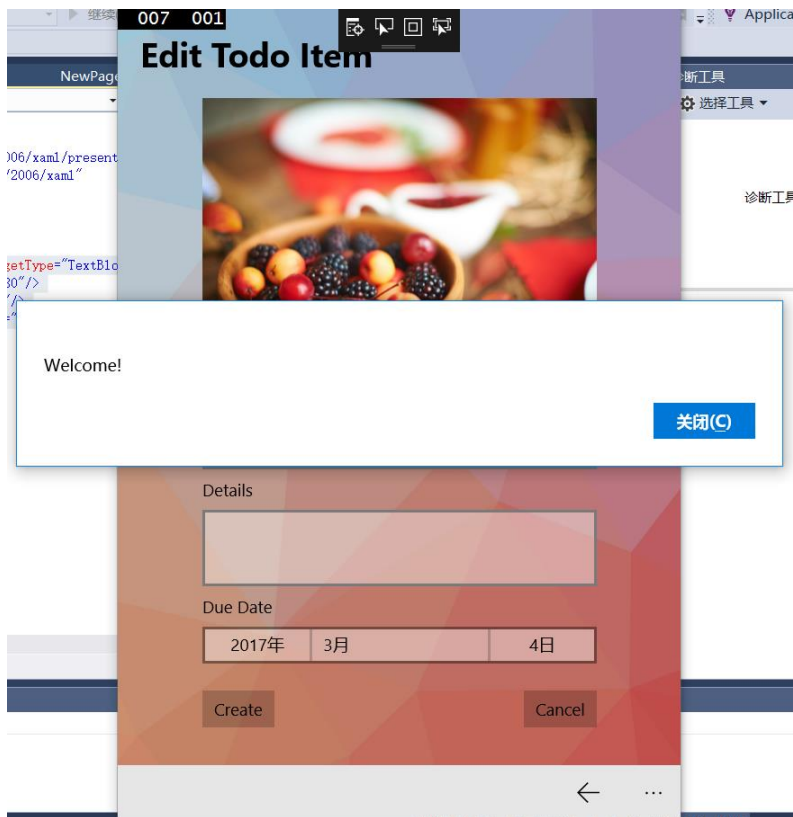
3. 点击 Create 按钮检查内容是否合法

若不合法，弹出相应提示：

The due date has passed!

关闭(C)

Title can not be empty!

关闭(C)

Detail can not be empty!

关闭(C)

若合法，则提示成功：

Create success!

4. 点击图片按钮选择图片文件并更换主页图片
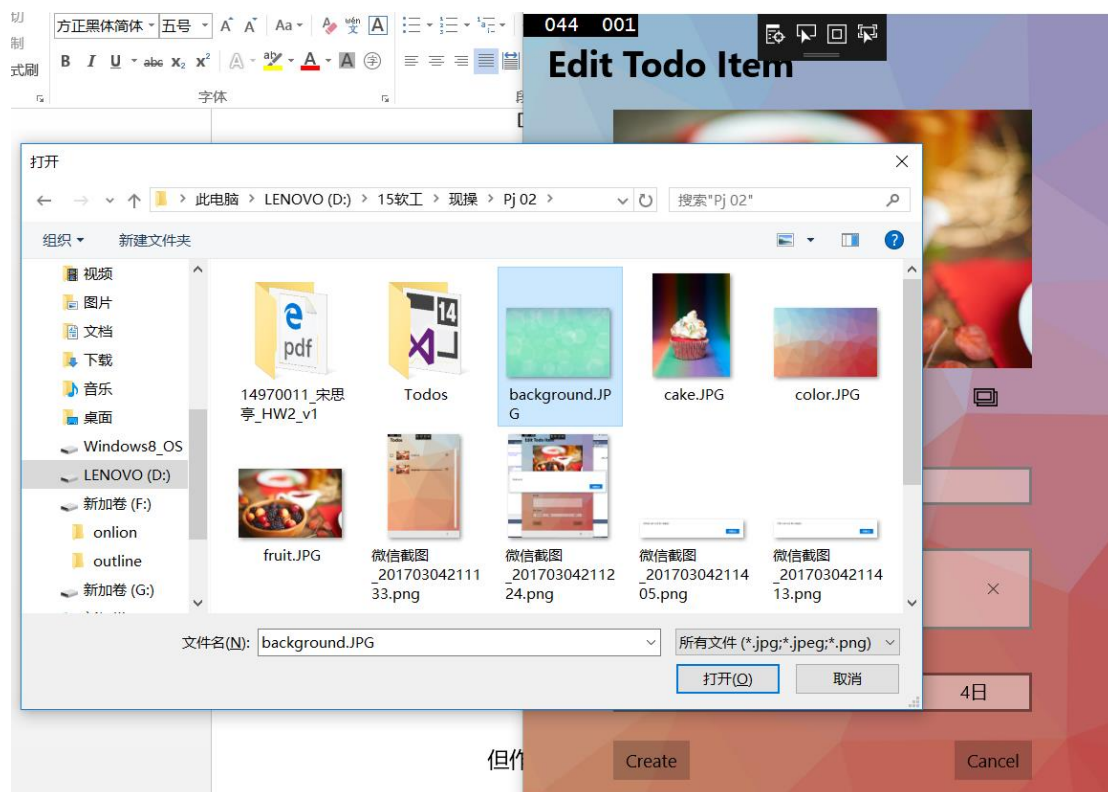
5. 点击 Cancel 按钮重置输入及图片选择

6. 点击左上角或底部返回按钮回到 MainPage
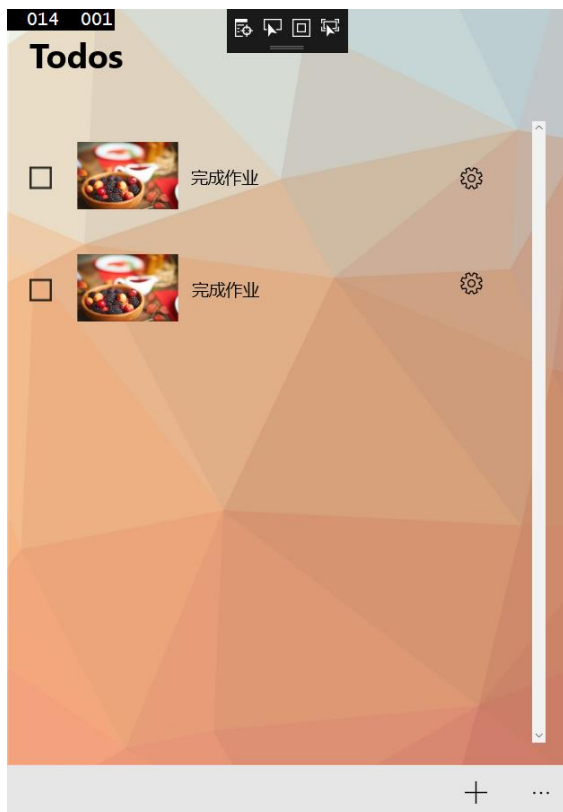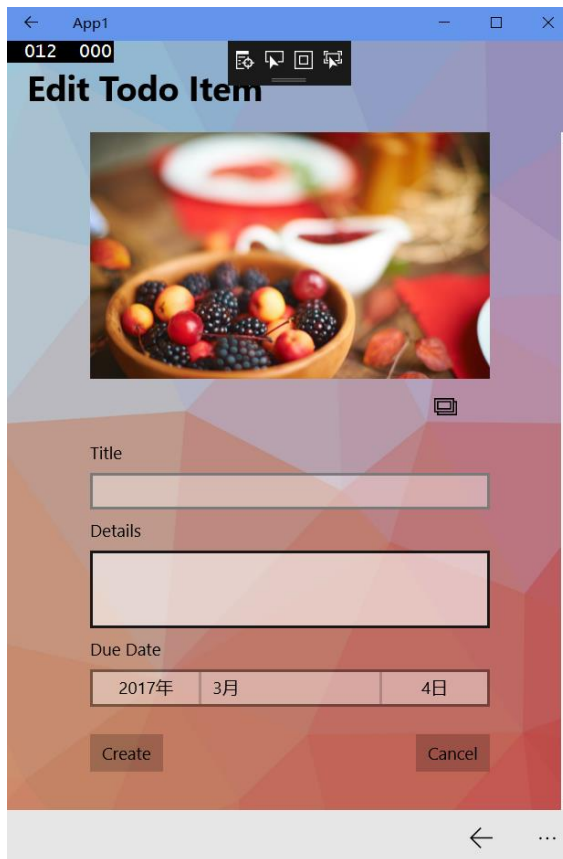
## 四．实验过程遇到的问题

1. Create 按钮判定时间是否合法时，刚开始采用分别判断年月日的方式，难以梳理

逻辑造成繁琐的代码表达，找到正确的比较方法后减少了冗余代码。

2. 打开图片的借口调用参考了较多博客，但主要还是查询 api 文档。

3. 页面间的跳转点击+号跳转到新的页面后，点击回退按钮没反应，按照作业 PPT
   中的指导修改 app.xaml.cs 后实现跳转。

## 五．思考与总结

了解了 windows 开发的一些基本布局，初步接触到了 xaml 文件，学习了多页面的
跳转及各种控件的使用。

在完成作业的过程中查阅了较多的文档，也从前人的博客中学习了不少出坑的技巧，在
今后的学习过程中也不能局限于课堂教学和课件内容，要多涉猎多实践。