The MFC (Microsoft Foundation Classes), Reading

The MFC is a collection of related classes that implement inheritance and polymorphism in a pretty **extensive hierarchical structure (https://msdn.microsoft.com/en-us/library/ws8s10w4.aspx)**. Wow! *What that means to us* is that we can ***create objects*** with those classes -- objects that interact with one another, like ***buttons*** and ***menus***. We can also customize some of the MFC classes through inheritance -- that's how we'll add buttons as data members to our own derived window class.

Windows

The most fundamental class is the one that creates a "window" -- a rectangular area on the display. You may not think very much about what's going on behind the scenes of GUI programs, but when you cover an area of the display with another app, what *was* there is now *gone*. When the covering app goes away, what was there has to be *redrawn*. The basic window has location, size, and the ability to initiate redrawing itself.

Buttons

A button is a window (remember ***is-a***?) with added functionality. It inherits its basic rectangle functionality from the window class, but adds beveled edges and a caption. It changes appearance when clicked or when selected. It can also respond to a click by calling a member function.

A button is called a "***control***", which is a generic name for an MFC object. Controls are the subject of the *next* module, while this module focuses on organizational aspects of GUI programming with the MFC.

Menus And Tabs And Radios -- Oh My!

There's a scary long list of different kinds of controls, as you'll see in the next module. You thought the list of shapes was long in the first lab assignments, but just take a look at what's in the MFC -- click the link in the first paragraph above if you've not already done so. ***Memorize it,*** because there's a quiz to follow. Just kidding...

Pretty much everything you're used to using in a computer program is a control, so you already know lots of them. But maybe you never thought of them as "objects" before. There are:

- Drop-down menus where you can select an option.
- Drop-down menus where you can add options, like the URL bar in browsers.

- Tabs that overlay different displays, like the left edge menu system in the page you're looking at right now.
- Radio buttons, where when you click one, another previously selected radio becomes deselected.
- Check boxes -- some that just check and some that cause things to happen elsewhere in the app.
- Popup dialogs, like File->Open or About This App.
- Input text boxes, some with format restrictions (like phone numbers and dates).
- Text labels.
- Images and animations.

No, that's not all of it. Surely you can think of more.