## Cross Platform Tools

* What is a cross platform tool?
  + 2 Types:
    - Native Compilation
    - Hybrid Apps
* Why develop using a cross platform tool? Advantages and Disadvantages
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* Popular cross platform tools
  + Cordova / Phonegap –
  + Xamarin –
  + Ionic Framework –
* Cordova / PhoneGap and Hybrid Apps
  + Brief history
    - Initially created by Nitobi, purchased by Adobe in 2011
    - Adobe released open source version named Apache Cordova later
    - Supports to some extent Android, Windows Phone, iOs, Blackberry, Ubuntu, Firefox OS, Fire OS, Windows Desktop
  + How they work under the hood
  + Online build service
    - Build.phonegap.com
    - Allows building for iOS (with dev license), windows 8, and android
    - Other platforms must be built from the command line
  + Plugins
    - There are over 1000 plugins at the plugin database online.
    - Support for plugins is not always complete for all platforms. Android and iOS are usually the best supported, by far.
* Xamarin
  + Brief History:
  + How a Xamarin project works
    - Solution is generated with multiple projects within it:
      * Shared Project –
      * iOS Project –
      * Android Project –
      * Windows UAP project –
    - Debugging for Android: Uses USB or emulator and the Android SDK
    - Debugging for iOS: Uses a remote agent on a Mac
  + Output platforms
    - Android:
    - iOS: