

AND210

Backgrounding in Android

- ▶ Lecture will begin shortly
- ▶ Download class materials from university.xamarin.com

Information in this document is subject to change without notice. The example companies, organizations, products, people, and events depicted herein are fictitious. No association with any real company, organization, product, person or event is intended or should be inferred. Complying with all applicable copyright laws is the responsibility of the user.

Xamarin may have patents, patent applications, trademarked, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any license agreement from Xamarin, the furnishing of this document does not give you any license to these patents, trademarks, or other intellectual property.

© 2016 Xamarin. All rights reserved.

Xamarin, MonoTouch, MonoDroid, Xamarin.iOS, Xamarin.Android, and Xamarin Studio are either registered trademarks or trademarks of Xamarin in the U.S.A. and/or other countries.

Other product and company names herein may be the trademarks of their respective owners.

Objectives

1. Explore the Activity Lifecycle
2. Start an Android Service
3. Bind to a Service

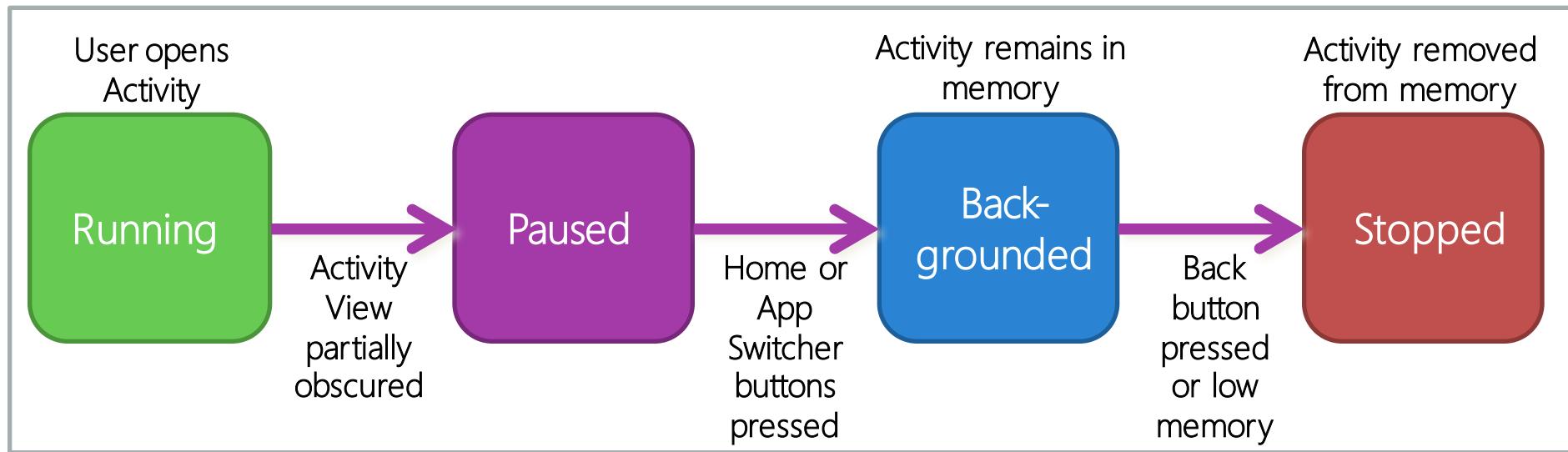




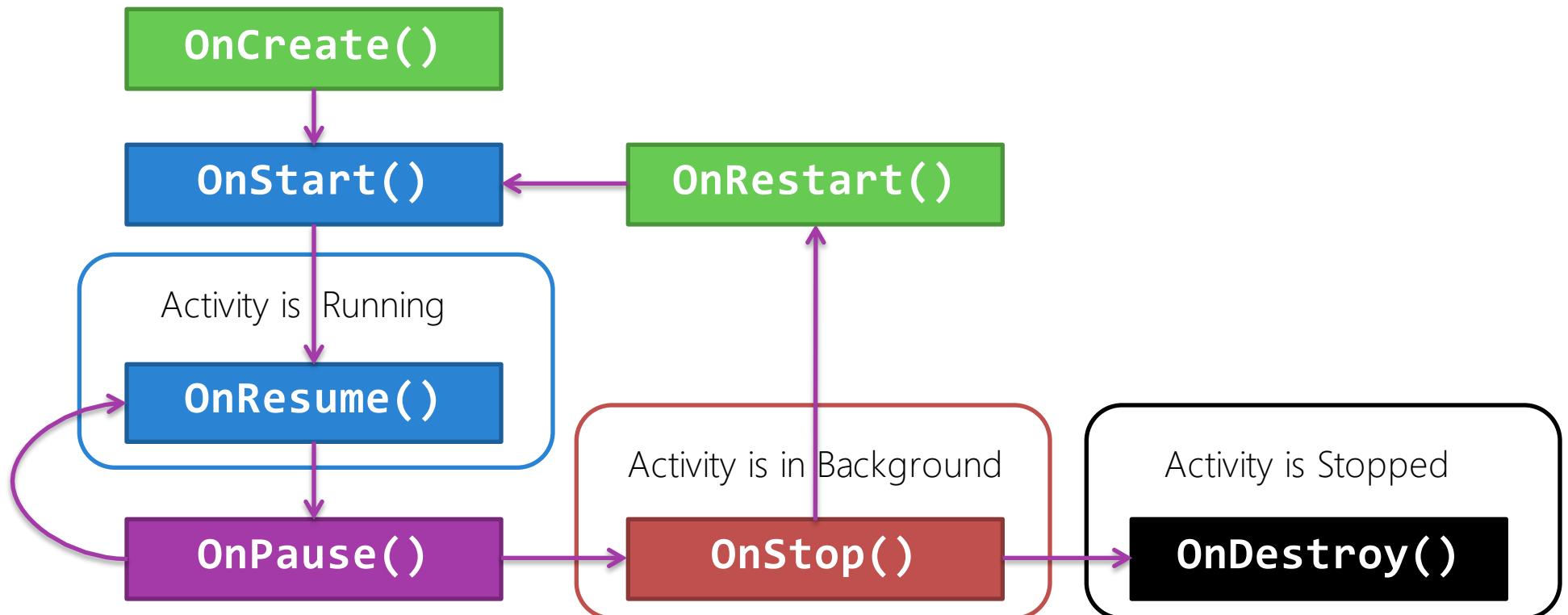
Explore the Activity Lifecycle



Android Activity Lifecycle



Activity Lifecycle Methods





Group Exercise

Explore the Android Activity Lifecycle





Start an Android Service



Android Background Tasks

- Activities lifetime is not well suited to long-running background tasks
- Android uses *Services* to process tasks in the background
- Services can be used in three ways
 - Start Service
 - Bind to Service
 - Start + Bind to Service



The Service Component

- ❖ A *Service* is an Android application component that can do long running operations and does not present a user interface.

```
[Service]  
public class MyService : Service  
{  
    public override StartCommandResult OnStartCommand (...)  
  
    public override IBinder OnBind (Intent intent)  
}
```

The IntentService Component

- ❖ The *IntentService* is a simplified subclass of the Service component that uses a work-queue-processor pattern.

```
[Service]
public class DemoIntentService: IntentService
{
    ...
    protected override void OnHandleIntent
        (Android.Content.Intent intent) {
        Console.WriteLine ("perform some long running work");
        ...
    }
}
```



Group Exercise

Create an Android Service



OnStartCommand Method

- ❖ The OnStartCommand method is called when a service is started and returns a StartCommandResult

```
public override StartCommandResult OnStartCommand  
(Intent intent, StartCommandFlags flags, int startId)  
{  
    ...  
    return StartCommandResult.Sticky;  
}
```

Starting and Stopping a Service

- ❖ We can create an instance of a started service by calling StartService from an application component and and passing in an Intent that specifies the service.

```
context.StartService(new Intent(this, typeof(MyService)));  
context.StopService(new Intent(this, typeof(MyService)));
```





Bind to a Android Service

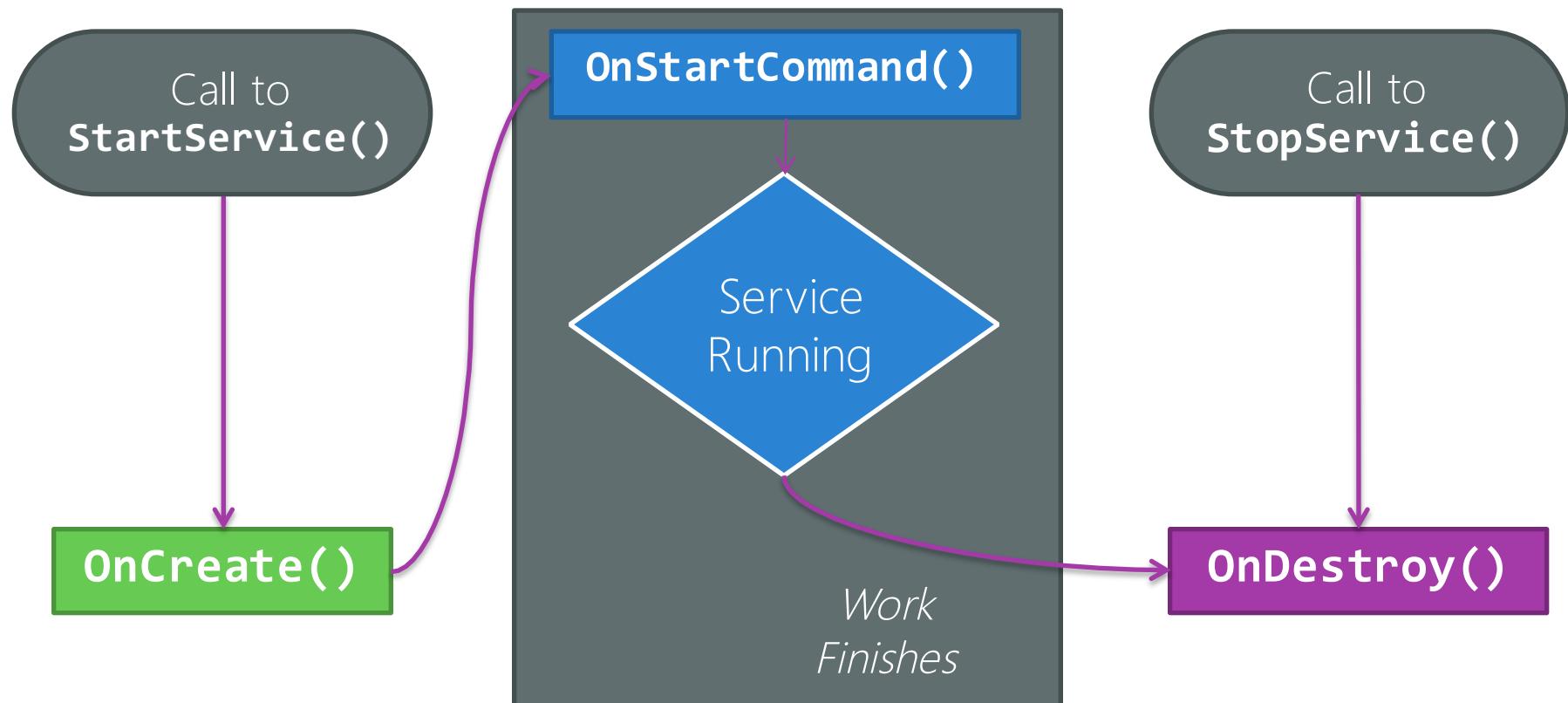


Types of Services

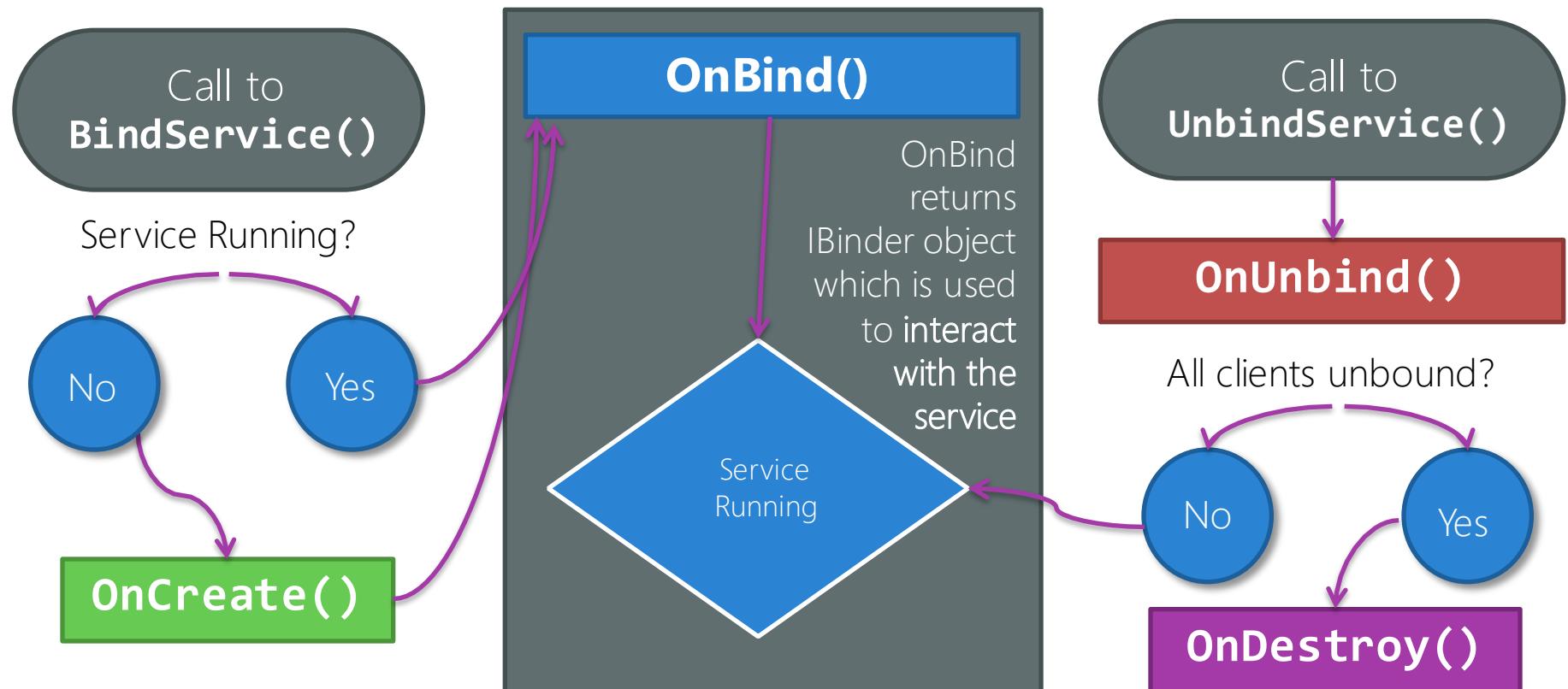
- ❖ **Started** Service (started manually)
- ❖ **Bound** Service (on demand)
- ❖ **Hybrid** Service (started + bound)

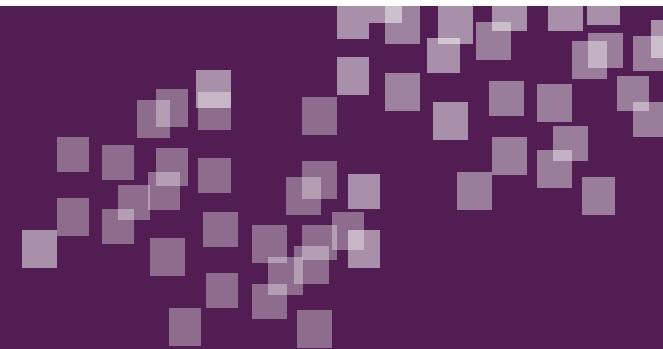


Started Service Lifecycle



Bound Service Lifecycle



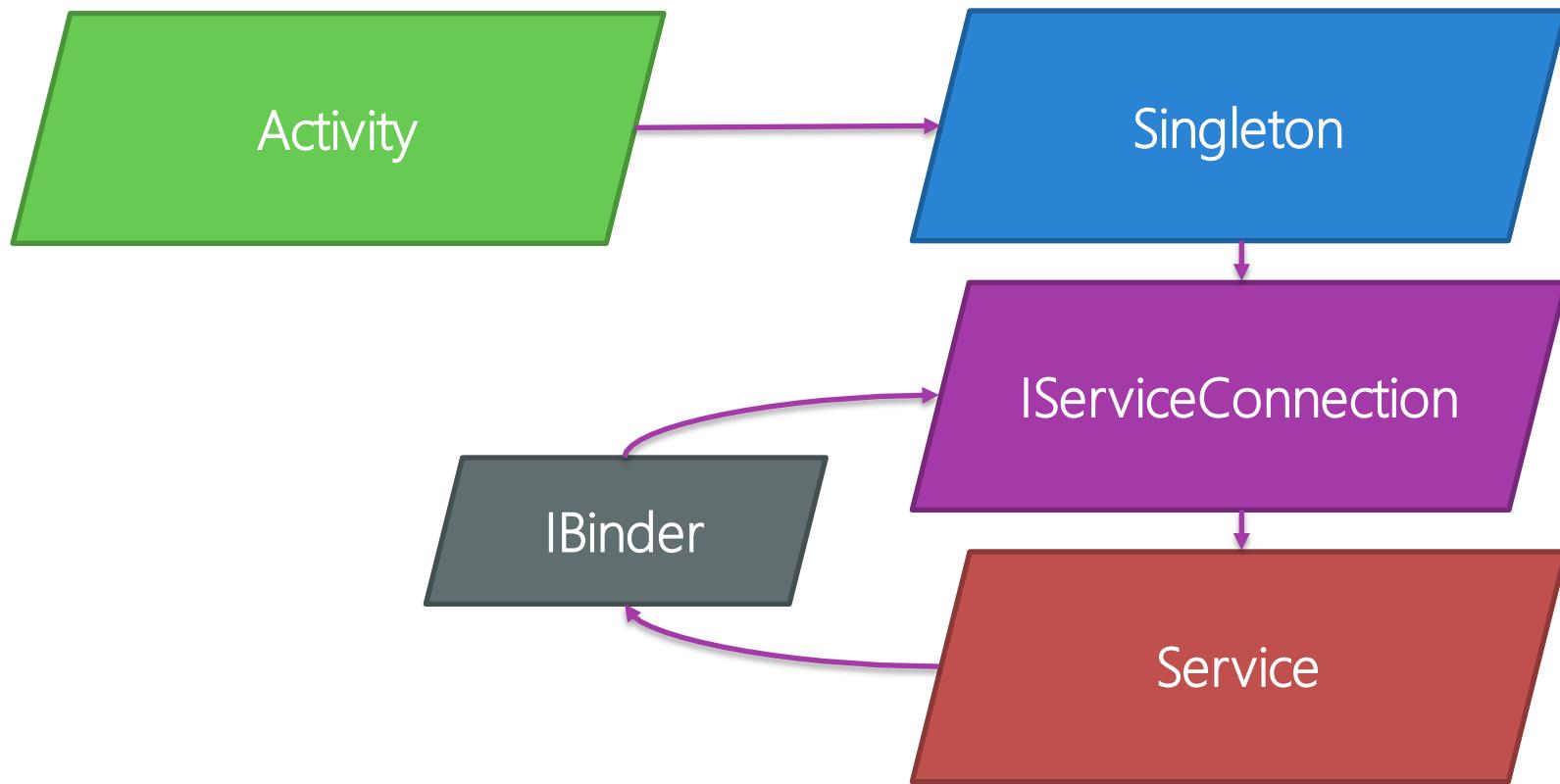


Group Exercise

Create an Android Hybrid Service



Exercise 3 Overview



Summary

1. Explore the Activity Lifecycle
2. Start an Android Service
3. Bind to a Service



Additional Resources

- ❖ http://developer.xamarin.com/guides/cross-platform/application_fundamentals/backgrounding/
- ❖ http://developer.xamarin.com/guides/android/application_fundamentals/services/
- ❖ <http://developer.android.com/reference/android/app/Service.html>



Thank You!

Please complete the class survey in your profile:
university.xamarin.com/profile

