

31927 32998: Application Development with .NET

Week-12 Special Lecture

Using Access database with C#

Introduction to mobile app development using
Xamarin



Outline

- Accessing Database using C#
- OLE DB
- Demo
- Introduction to Mobile App development using Xamarin

Connecting to Access Database using C#

Steps:

1. Create a Database in access
2. Connect to a database through data providers
3. Run SQL queries using the connection
4. Close connection

Connecting to Access Database using C#

Connect to a Database (e.g. MS Access):

- Establishing the connection to a database is the first step to work with databases
- Connection to a database requires:
 - Database name or a data source
 - Credentials (username, password, etc)
 - Other parameters (connection duration, etc)

Connecting to Access Database using C#

Connect to a Database (e.g. MS Access):

- In .Net, data providers are used to establish connections to databases and queries.
- OLE DB is a COM based API for accessing data.
- OLE DB support accessing data in different formats including databases, text files, spreadsheets, etc.

Connecting to Access Database using C#

Connect to a Database (e.g. MS Access):

- Three important class:
 - **OleDbConnection**: Represents database connection
 - **OleDbCommand**: Wraps an SQL command performed on a database connection
 - **OleDbDataReader**: Assists in browsing the record retrieved from a database using the SQL query.

Connecting to Access Database using C#

Connect to a Database (e.g. MS Access):

Demo:

1. Database: Student
2. Functionality: Login and Registration
3. Login: querying database to valid the user credentials
4. Registration: Inserting records in the database.

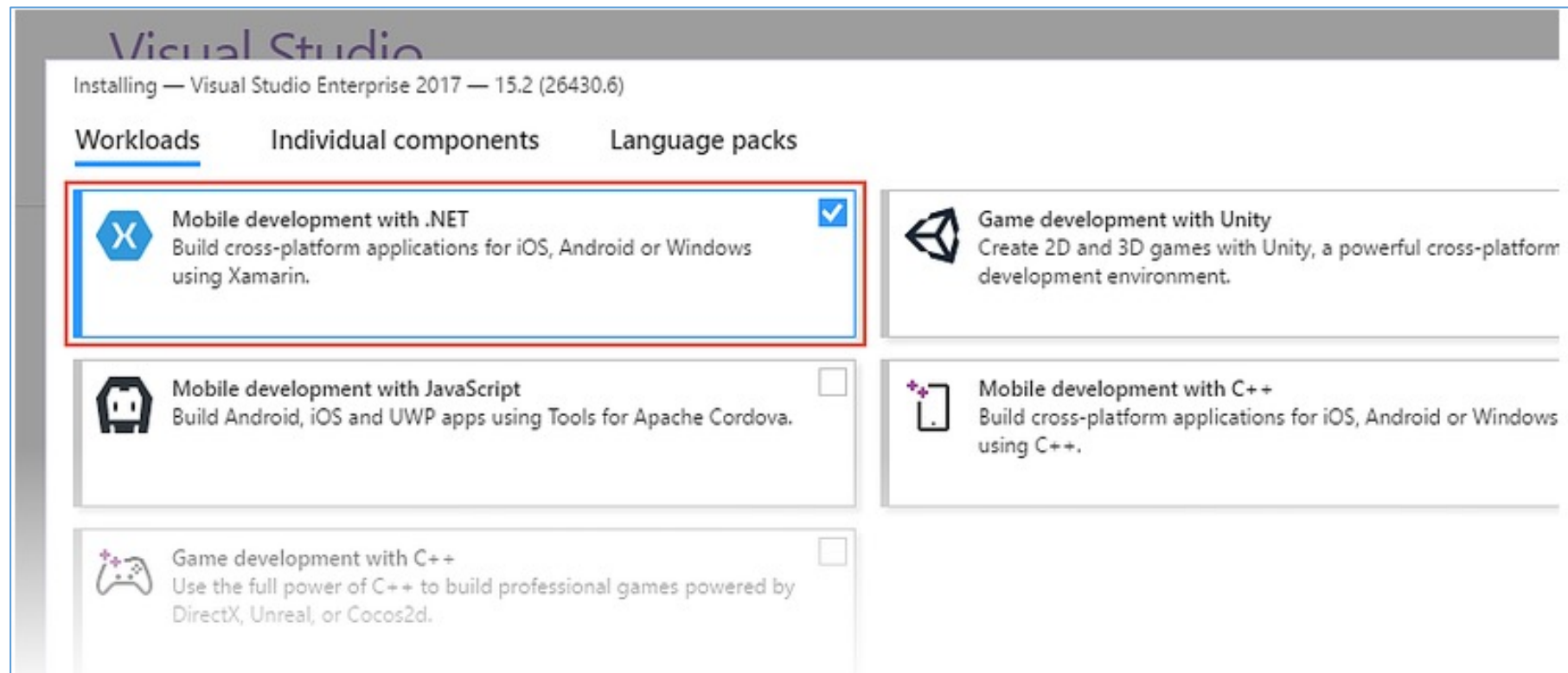
What is Xamarin?

- Xamarin is an open-source platform for building modern and performant applications for iOS, Android, and Windows with .NET.
- It runs on Mono and .NET to build apps with native performance and native UI
- Xamarin allows you to develop native apps using C# language and platform specific tools/SDKs and share the same code across multiple platforms – iOS, Android or Windows

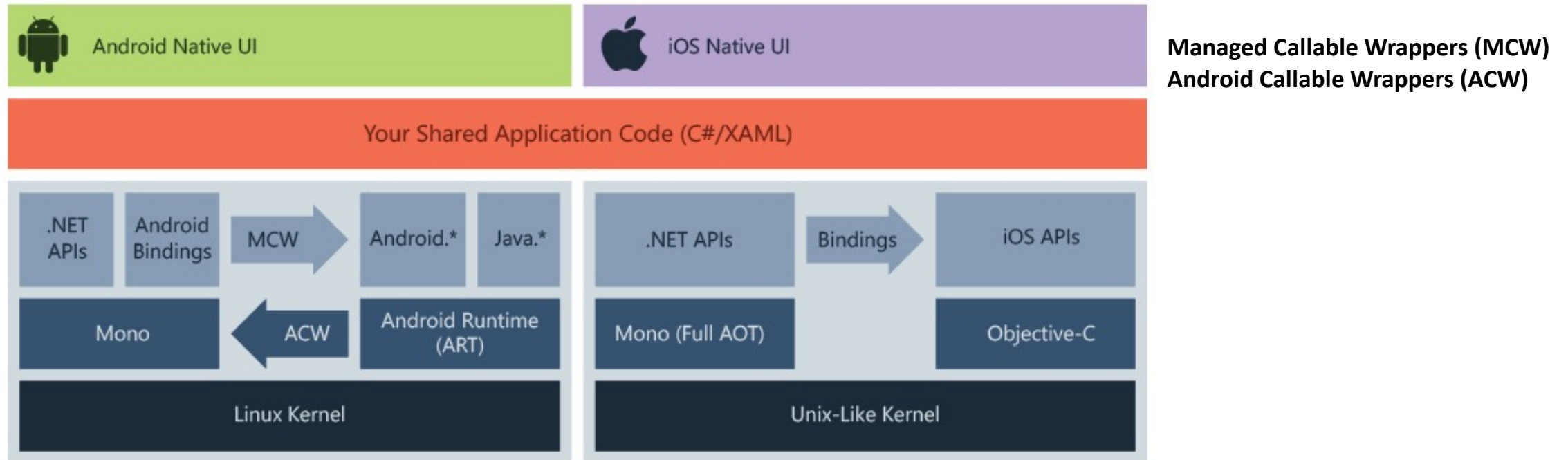
Installing Xamarin

Please follow the instructions given in the link below:

- <https://docs.microsoft.com/en-us/xamarin/get-started/installation/?pivots=win-vs2017>



How Xamarin Works?



- Xamarin allows you to create native UI on each platform and write business logic in C# that is shared across platforms.
- In most cases, 80% of application code is sharable using Xamarin.

How Xamarin Works?

- Xamarin is built on top of **Mono**, an open-source version of the .NET Framework based on the .NET ECMA standards.
- IDEs: Xamarin Studio, Visual Studio for Mac and Windows.
- Two different approaches for mobile application development:
 - **Xamarin Native**: want to use native features of an OS, use Native
 - **Xamarin Forms**: Not many OS native features, simple apps, use Forms
- Emulator are used to simulate mobile environment (e.g. different versions of Android, iOS, etc).

Demo

Phone number Translator App

Example:

1800-POLICE → 1800-765423