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Embarcadero's multi device development solution today and future

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About JT

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About this Session

- Where is RAD Studio, Delphi, and RAD Studio Today
- Key features of XE7
  - VCL/Windows
  - Language & RTL
  - FireMonkey/Mobile
  - EMS
  - IDE
- Future product directions

Where is RAD Studio Today

How RAD Studio makes a difference?

- Component-based
  - Rapid visual development
  - Platform API abstraction
  - Great data access (Local DB, REST, Cloud, C/S, multitier)
- Strong OOP architecture with modern Object Pascal language
  - Optimized compiled code
- Same exact model for VCL/Windows and FireMonkey/multi-device

UI Libraries and Target Platforms

- Your easy path to mobile development
  - Take code with you
  - Single code base for multiple platforms
  - Live data for visual design
  - Supports BaaS, MEAP, REST
- Your key to Windows
  - Expanding the VCL, the best Windows library
  - Desktop/mobile/IoT integration

Your Path Forward

- Your path to mobile development
    - Take code with you
    - Single codebase for multiple platforms
    - Live data for visual design
    - Supports BaaS, MEAP, REST
- Your key to extending Windows VCL
    - Expanding your VCL apps onto mobile and byone
    - Desktop/mobile/IoT integration

XE7 at a Glance

- The device revolution continues
  - The multi-device development dream comes true
- Connecting apps, gadgets, and wearables
  - Connect and embrace, with App Tethering and Bluetooth
- Fast code faster, with parallel programming library
- Turnkey EMS middle-tier solution
- Quality: the best release ever

RAD Studio XE7

VCL/WINDOWS

RAD Studio for Windows/VCL

- Parallel programming library

- VCL Styles improvements

- VCL JumpList (and TaskBar) components

- Bluetooth and Bluetooth LE support

- Mobile and desktop AppTethering

- FireDAC and IBLite on Windows

New in Object Pascal Language

- Improved initialization for dynamic arrays

  - Mix and match constant and dynamic arrays

- String-like operations on dynamic arrays

  - + operator concatenation

  - Insert and Delete

New System.Threading Unit

- ## Parallel 'for' loops
  - – TParallel.For

```
80   TParallel.For(1, Max, procedure (I: Int64)
       begin
         if IsPrime (I) then
           TInterlocked.Increment (Tot);
       end);
```

- ## Scheduling of Tasks
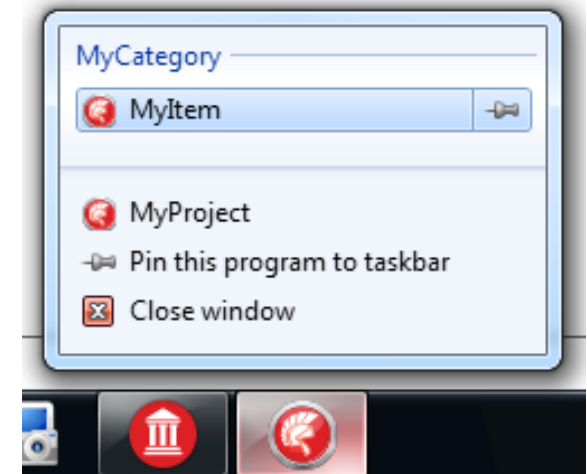 - – TTask methods: Run, WaitForAny, WaitForAll, Future

- ## Futures
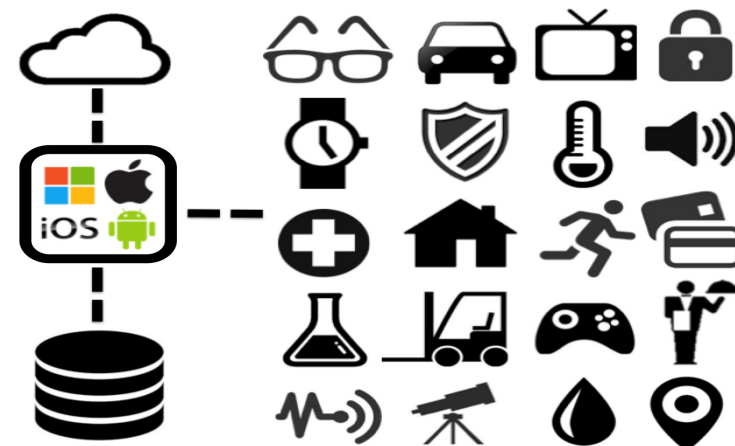
  var

    value : IFuture <Integer>;

New VCL Specific Components

- ## XE6: Taskbar button component
  - Progress bar with status, custom previews, overlay icons, preview frame buttons

- ## XE7: New JumpList component
  - Addition items and custom categories
  - Might need to manage application instancing

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Bluetooth on Windows

- Bluetooth LE component (works in VCL)
  - Directly talk with devices and gadgets
  - Available in Windows 8
- Standard Bluetooth API support
  - APIs are available
  - Integrated with AppTethering

AppTethering

- Control and interact with existing Windows apps from mobile apps

- Simple communication components on each side

- Use mobile companion app for taking pictures, GSP information, barcodes, summary info, remote control...

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AppTethering

Your Desktop App

AT

Your
Smartphone
App

AT

Your
Mobile
App

AT

Bluetooth™ WiFi™

- Bring new life to Windows / VCL applications by tethering to mobile apps
  - Remote control VCL apps from mobile
  - Exchange data between applications
  - Automatic discovery, no configuration required

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Bluetooth & Wifi Built-in

RADStudio XE7's integrated Bluetooth and Wifi support in the RTL and easy to use components enable developers to easily connect to any wireless and Internet connected gadgets, sensors and devices.

Works with thousands of Devices

RADStudio XE7's integrated wireless support (Bluetooth and Wifi) works with thousands of "off the shelf" consumer and industry specific devices. RADStudio's approach make it easy to integrate virtually any device into the app user experience, and even support multiple device vendors with the same code.

Other RTL Improvements

- OmniXML support in TXMLDocument
  - Works on mobile, includes XML namespace support
  - Define default XML library per project
    - For SOAP and other XML-based processing
- New System.NetEncoding unit for Web-related encoding and decoding
  - Base64, HTML, URL encoding

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RAD Studio Database Access

- Local and Client/Server with FireDAC

  - FireDAC: rapidly evolving universal database access layer

- Free IBLite for all platforms

  - Including Windows and Mac

- And BDE is no longer delivered in the product

  - Separate download in XE7

TDataSet Evolution

- Dynamic fields creation management
  - Added in XE6

- Persistent fields can be merged with dynamic ones
  - Supports calculated fields with no other persistent fields
  - Supports dynamic queries with some persistent fields

- New FieldOptions property
  - AutoCreateMode, PositionMode

FireDAC, Data Access Cornerstone

- High-performance, easy-to-use, enterprise database connectivity
- Universal data access, but with many database specific features
- Multiple target platforms supported
  - Windows, Android, iOS, and MacOS X

**Database applications development
is fun again with FireDAC**

NEW FireDAC and DB Features in XE7

- FireDAC True BLOB streaming
    - Plus SQL Server FileStream support
- New FDBatchMove Component
    - Migrate data and metadata between databases from different vendors
- Includes reFind scripts for BDE migration

RAD Studio XE7

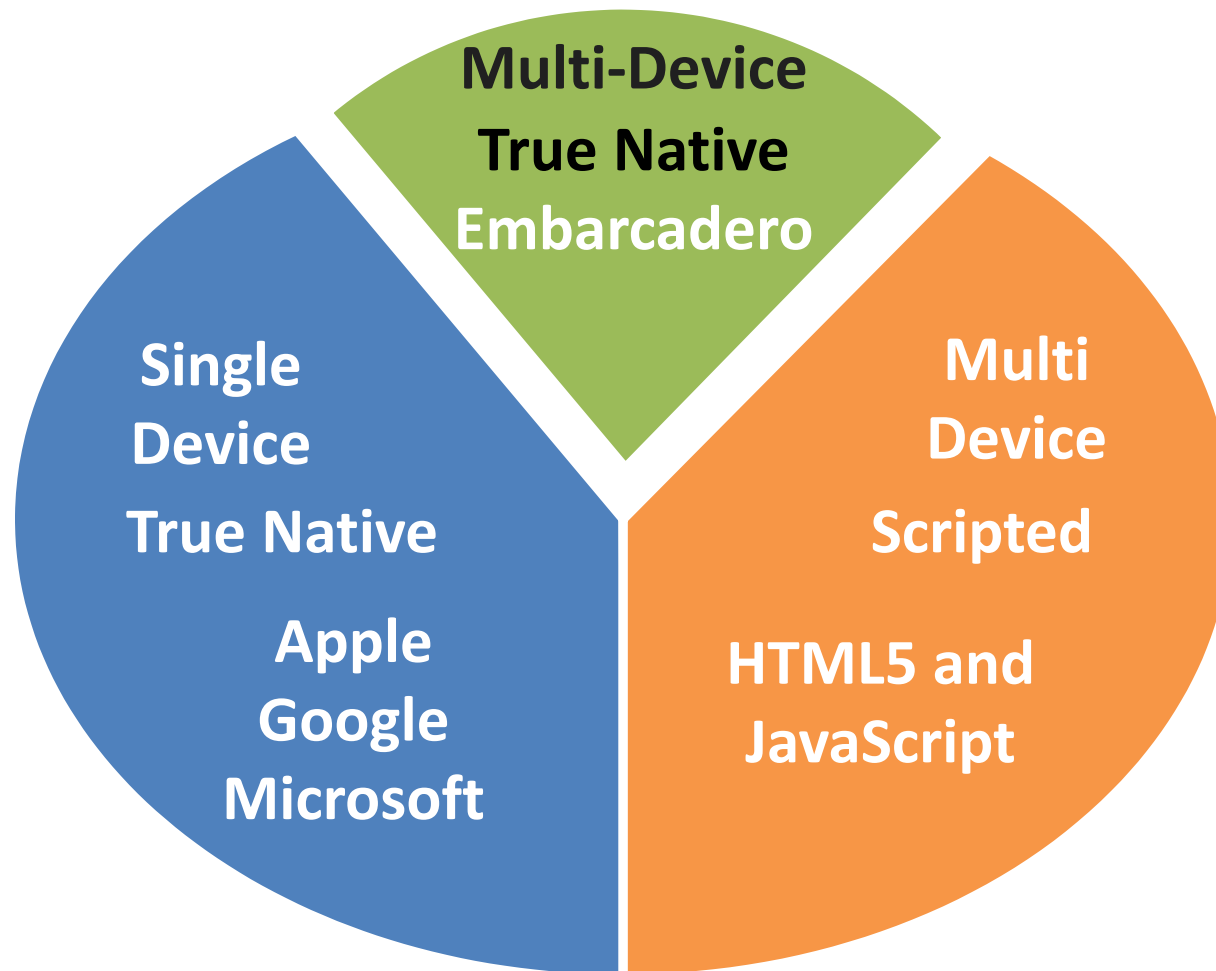# FIREMONKEY/MULTI-DEVICE

RAD Studio XE7 for Multi-Device/FireMonkey

- FireUI multi device designer

- FireMonkey mobile and desktop extensions

- New Enterprise Mobility Services

- Bluetooth and AppTethering

- Most of the language and RTL features
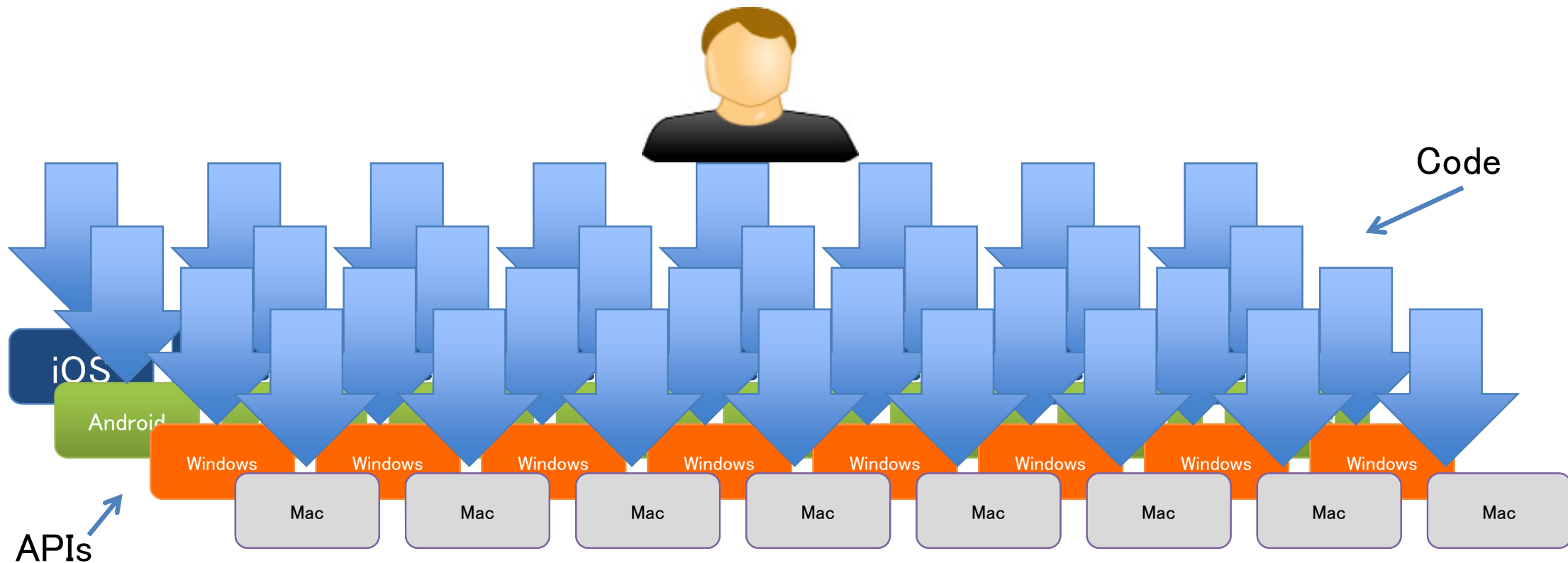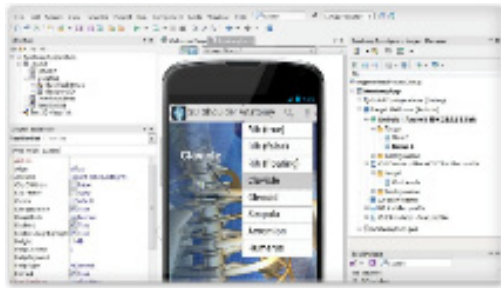   - Shared with the VCL and covered earlier

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Mobile is Everywhere

Delphi Unique Position

Developing with Platform APIs only

Developing with Pre-built Components

Developers always have access to platform APIs if and as needed.

Code

Component	Component

iOS	iOS	iOS	iOS	iOS	iOS	iOS	iOS

Android   Android   Android   Android   Android   Android   Android   Android

Windows   Windows   Windows   Windows   Windows   Windows   Windows   Windows
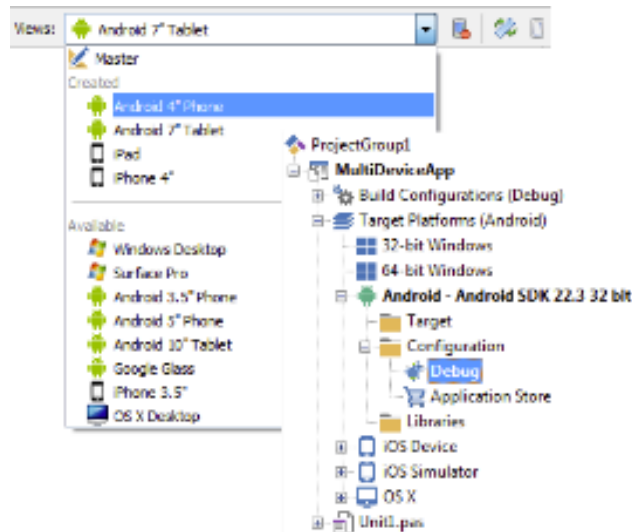
Mac   Mac   Mac   Mac   Mac   Mac   Mac   Mac

APIs

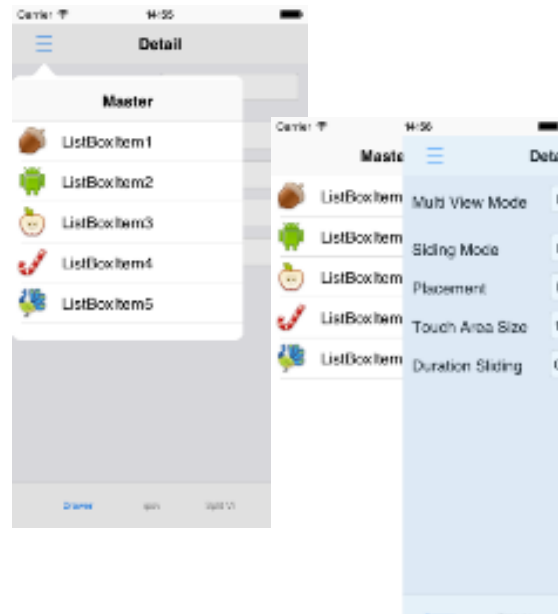embarcadero

Multi Device Development with FireUI

Flexible design

Multi-device designer

Adaptive UI

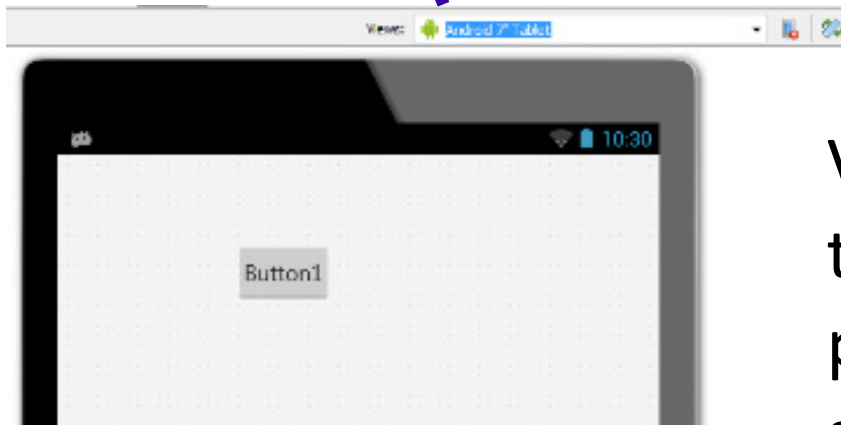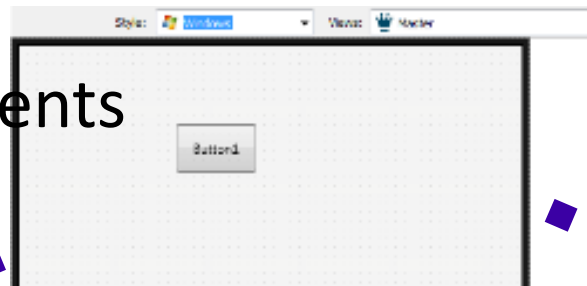TMultiView, the first adaptive component
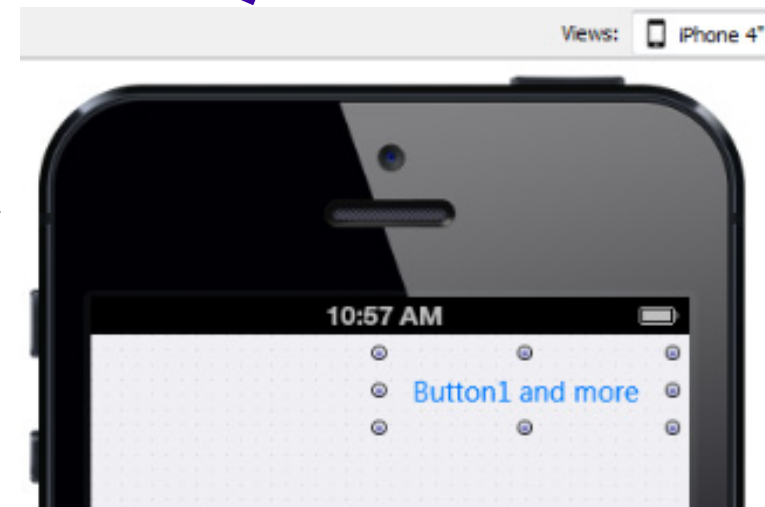

Platform Aware

New FireMonkey Behavior Services

FireUI Multi Device Designer Architecture

Master has all components

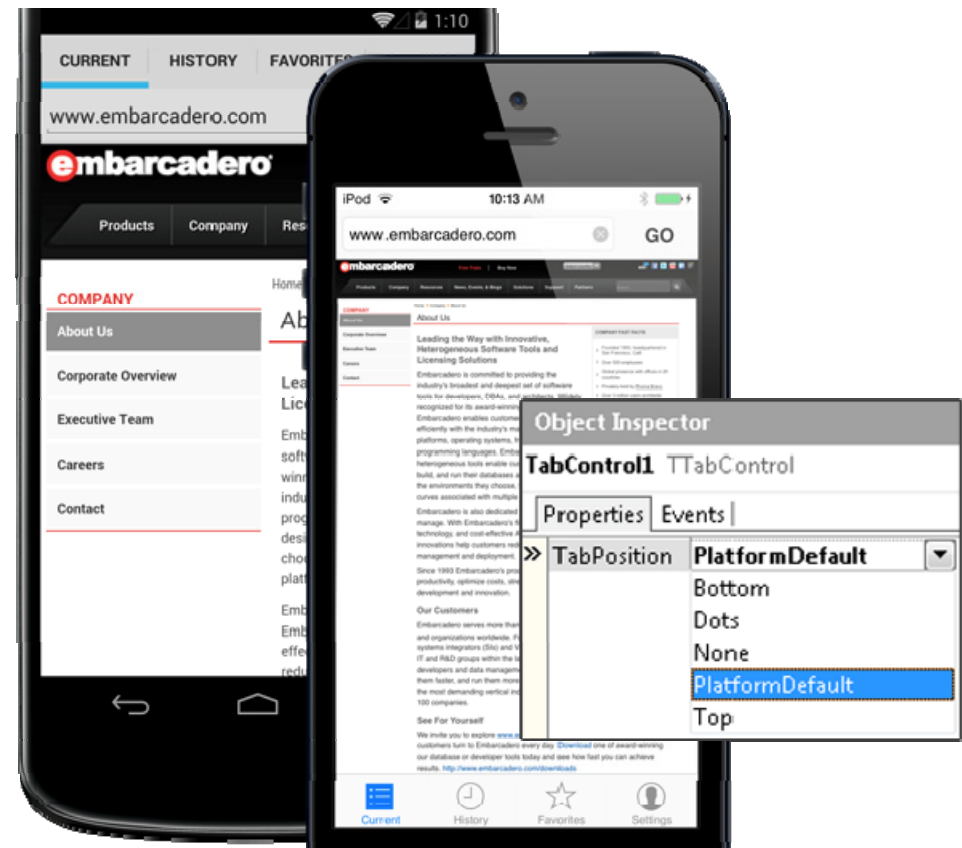Views can modify the layout, properties and styling

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MultiView Component

- Adapts to device form factor to provide proper placement and rendering of master lists and menus
- Renders controls with per control granularity for owner draw or platform

Behavior Services

- A developer accessible API that provides details about the device, operating system, and form factor the app is running on

- Informs MultiView components

More FireMonkey

- Desktop Multi monitor support

- Multi touch support

- Project Manager support to add Java libraries to app
  - Plus Java2OP tool

- Android immersive mode and splash screen support

- Native platform presentation for TEdit on iOS

Gadgets and Wearables
It's the Internet of Things!

Bluetooth LE and AppTethering

- Supported on most platforms

- AppTethering

  - Wifi and Bluetooth

  - Mobile to desktop, mobile to mobile

- Bluetooth LE component

  - iOS, Android, Mac, Win 8+

Interactions with Gadgets

- Bluetooth LE

- Standard Bluetooth

- REST over HTTP and other TCP/IP communications

- Custom SDK / API

- We've got all covered

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Mobile Data Connectivity

- Cloud support (Azure, AWS)
- REST Client Library (and SOAP clients)
- BAAS support (Parse, Kinvey, and more)
- Multi-Tier SDK: DataSnap

- New in XE7
  MEAP solution, Enterprise Mobility Services

Enterprise Mobility Services

- A turnkey middleware server enabling:
  - User management and authentication
  - Loadable modules for custom APIs over REST
  - Enterprise SQL database access through REST for all major databases including Oracle, DB2, Informix, Sybase, MS SQL Server, and more
  - Mobile embedded and server-side SQL data storage
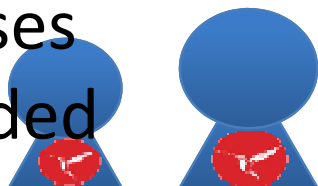 - Web console for users and API analytics

EMS Overview

InterBase Server Included

EMS Clients
- Rest API

- InterBase ToGo licenses included

EMS Server
- Plug in EMS Package

EMS DB

EMS Console
- Users tracking
- REST API analytics

FireDAC

Microsoft® SQL Server™
SYBASE MySQL
ORACLE®
IBM DB2

Enterprise Databases

BaaS Providers

EMS vs. DataSnap

EMS (Turnkey)	DataSnap (SDK)
Turnkey "ready-to-use" solution	Do-it-yourself solution with a high-level SDK
Create server extensions exposing REST APIs and database data via FireDAC	Build your own server including REST and HTTP support, and can also use FireDAC
Fully stateless and scalable, no sessions	Heavy or light weight session management, depending on your code
Includes users management, API call analytics and console	Do it yourself
Self hosted (on premise on on cloud), pay per user, includes IB + IB ToGo	Self hosted, free to deploy, included only in Enterprise SKU

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Shared VCL Features

- Parallel programming library
  - Most mobile devices have quad-core CPUs (and more)

- Database and FireDAC extensions

- IBlite for all supported mobile and desktop platforms

RAD Studio XE7

IDE AND QPS

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The RAD Studio IDE in XE7

- Multi-device designer

- IDE Guided Tours

  – A way to create interactive tutorials

- Version Control

  – Updates in SVN support

  – New Git support

    • Commit to local repo, Show Log, Diff, Blame

- And Castalia is Free with XE7

Quality, Performance and Stability

- Get the best development experience with RAD Studio XE7

- Increased application runtime performance on all platforms

- 300+ externally reported bugs fixed

- Out-of-IDE compilation for large projects

RAD Studio XE7

FUTURE DIRECTIONS

Delivered After XE7

- VCL Bitmap security hotfix

- iOS simulator hotfix

- New (beta) linker for iOS App Store submission

- Castalia as a free download

- External "TurboPack"

- XE7 Update 1 coming shortly

RAD Studio Future Directions

- Keep VCL on top of Windows 10 development
- Cross platform development with seamless single source and native integration
- Embrace Internet of Things in full
  - And single-board computers
- Expand EMS and DataSnap
  - And offer more server deployment options (i.e. Linux)
- Enhance developer productivity in the IDE

RAD Studios' Bright Future

- RAD Studio's future has never been so bright
  - Products are doing great
  - Embarcadero investing in R&D
  - More books, components, recognition
  - Embarcadero investing in CLANG/LLVM

- RAD Studio is pure power
  - Leverage and extend
  - Great libraries and third party components

Questions?