

```
10 WriteLn 'Hi Developer';  
20 Goto 10;  
30 'Win 95, 98, ME, NT, 2000,  
    XP, Vista, 7, 8, 10';
```



# Hybrid Windows 10

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# Agenda EKON

- Hybrid Development (desktop versus tablet)?
- What's important in Win10 Development?
- UX Design & Responsiveness
- Improve your Code (Dual Testing)
- Optimisation with Wine, UISpy & other Tools



# ITouch Questions first

- Are touch actions like mouse actions?
  - Yes Tip = LeftClick - Touch/Hold = RightClick.
- Do we need Intel CPU?
  - Yes like Win7 Asus Eee Slate EP121 (I5-470UM)
- Do we have a virtual Keyboard?
  - Yes like a focus Edit-Control or simulate keyboard → code
- Do I have Buttons, Trackbar, Pulldown, Listboxes...
  - Yes but make it bigger → showMessagebig() → code
- What about third party components?
  - Yes or no like async pro (no serial) or video signals (no vga) or barcode reader (various onkeypress)

<http://docs.codehaus.org/display/SONAR/Plugin+Library>

# Develop for Multiple Devices



Use cloud services to sync across devices.

- With Win 10 you no longer target an OS, your app aims to 1 or n device families (PC, IoT, Xbox, Mobile).
- A device family is a set of APIs collected together & given name, version number.

demo: 15\_pas\_onedrive.txt

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# Menus & Mouse are gone

Iterator Disable Structure

with MaxForm1.MainMenu1 do

for it:= 0 to items.count-1 do begin

  TMenuItem(items).items[it].enabled:= false;

  writeln(TMenuItem(items).items[it].name);

end;

Demo: 547\_Win10\_Develop\_4\_BASTA\_EKON19.TXT

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# Menu Methods to look for



- A TMenuItem component contains the properties, methods, & events for each menu item on a menu (TMainMenu or TPopupMenu).
- Each TMainMenu or TPopupMenu component may contain multiple menu items.
- Relink your menu item object for each command on the menu to other controls.
- Test mode with maXbox

```
if GetSystemMetrics(SM_TABLETPC) <> 0 then Showmessage('Tablet');
```



# Intro: Win 10 is hybrid

- The Start menu can also expand to fill the entire screen, in a way that's similar to the Start screen in Win 8 & in Win Phone.
- It definitely looks like it will be a solid compromise for users who still want the freedom to use both touchscreen & mouse-keyboard controls.

Multiple desktops. Win 10 lets you add virtual desktops so you can organize work more strictly. For ex. you have a W32 app open in one desktop, & Wine test application in another. Also better DOS prompt. → demo

# IMPLEMENTED FEATURES II



Basically, if you have a device like the Surface Pro 3 that has a keyboard attached, the UI in Win 10 will work in desktop mode.

If the keyboard is detached, or if it flips around to show just the touchscreen, Win 10 will pop up an alert asking the user to go into tablet mode.

Another feature aimed at tablet users is Continuum, which prompts user to engage Win 10 “tablet mode” if a tablet is undocked or keyboard on a convertible is folded back. In tablet mode, apps including start menu run full-screen.

<https://dev.windows.com/en-us/getstarted/whats-new-windows-10>



# Preparation Checklist



## **1. Set Compiler Directives**

***{\$IFDEF TABLET}***

## **2. Test functions since Delphi 2010 introduced some nice touch and gesture support.**

## **3. Check with `GetSystemMetrics(SM_TABLETPC)` or registry for value of**

`HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\ImmersiveShell\TabletMode`

## **4. Check your `TTouchKeyboard` or virtual keyboard for missing keys or strange signs. Complete?**

## **5. Installation Issues, Licenses, Certs. Are there any?**

`TStringlist(dumpComponentsFtype(Application,'TMenuItem',cmplst));`



# Win 10 Develop

- The Win32 & Win64 API is common to all versions of Windows, & now that WinRT apps also run in a window, there is no longer a sharp distinction from user's sight.
- This means that by writing to the full Win API developers can support Win 7 or even Win XP as well as running well in Win 10.
- Delphi has a WinRT bridge (wrapper classes).



# More Win32/64 Codebase

- Another advantage of coding to the Win API, rather than WinRT, is that applications will run on Win 7 as well as Win 8 & 10.
- Despite Microsoft's ambitions, not everyone will move quickly to Win 10 & retaining Win 7 compatibility means a larger installed base for your application.
- Hence RAD Studio 10 doesn't currently compile WinRT apps; W32/64 are first class citizens.

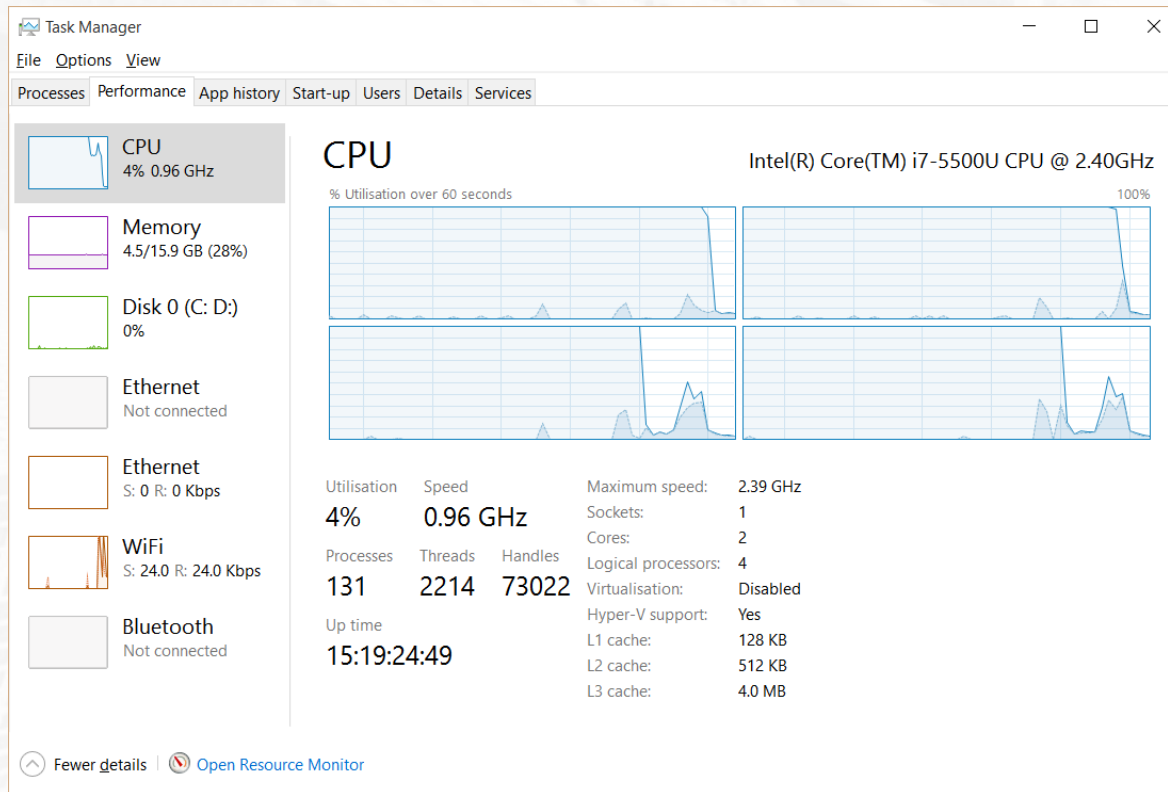
# Universal Win Platform



- “Windows as a service,” which means that the operating system will be continuously updated.
- An “All apps” hierarchical view menu on the left.
- Win 10 makes it easier to develop apps for the UWP with just one API set, one app package, & one store to reach all Win 10 devices - PC, tablet, phone & more gadgets.
- support for screen sizes, & also a variety of interaction models, whether it be touch, mouse & keyboard, a game controller, or a pen.
- <https://msdn.microsoft.com/en-us/library/windows/apps/dn894631.aspx>



# Win 10 Core Optimisation



demo: 630\_multikernel3.TXT

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# Win 10 API

- The core APIs, it will run on any Win 10 device.
- There's a common API ((UWP) core APIs) surface across device families.
- Extension SDKs make your app light up on specialized devices (specialized APIs for each device family).
- Adaptive Controls & input UI elements are additional
- You target device families, not an OS.

<http://blog.marcocantu.com/blog/2015-june-windows10-notifications-vcl-winrt.html>

# Components or Services?



- **Tablet** with Services or REST binding
- **Desktop** with Components or COM binding

You probably need to break up the API design in  
Service Components (Strategy, Composite, Decorator)

TWebModule1 = class(TWebModule) → WSDL is out – JSON is in

HTTPSoapDispatcher1: THTTPSoapDispatcher;

HTTPSoapPascalInvoker1: THTTPSoapPascalInvoker;

WSDLHTMLPublish1: TWSDLHTMLPublish;

DataSetTableProducer1: TDataSetTableProducer;



# Hybrid Design

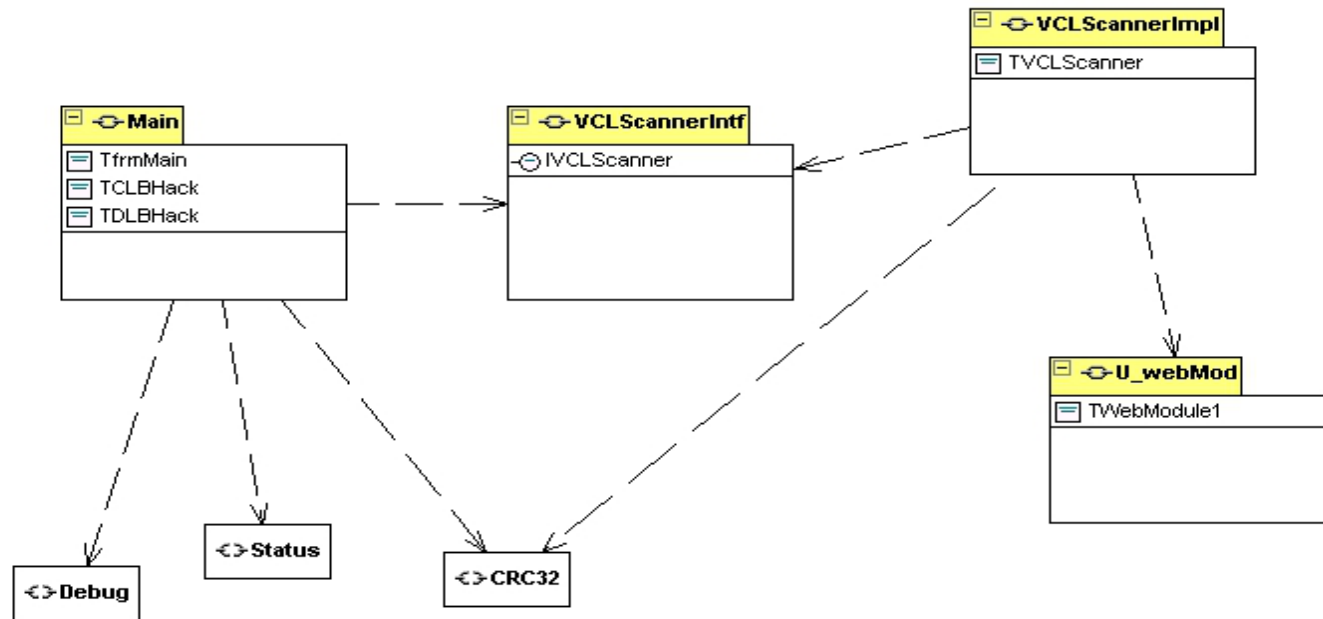
- Check Services as Backup (ex. Geolocation)
- Call Contracts in a sandbox (WinRT)
- Call Services First CSF (map comp or service)

```
MyPublicIP:= GetHTM('http://ipinfo.io/ip');  
function GetGeoWeather(const location: string;  
                        const UrlRestAPI: string): string;
```

Demo: 640\_rest\_weather\_report2.txt



# Hybrid 1 Interface n Implements





# UX Touch Responsive

- We use more services that prevents user from data input. We include loose coupling through services. Think how to use multiple input modalities. → sound video!
- When you design your UWP app, you're designing in effective pixels, not actual physical pixels.  
<https://msdn.microsoft.com/library/windows/apps/dn958435.aspx>

Whenever you want to call an API, you'll need to know whether the API is implemented by the device family that your app is targeting!

Demo: 640\_weather\_report.txt



# Finally you can test with

- Duplicated code in hybrid
- UWP Coding standards & guidelines
- Unit tests for Code Coverage
- Wine Reference or RealVNC on Android
- UISpy to find Components & Controls
- Comments & Compiler Directives
- Design CSF

demo: 393\_QRCode3.TXT

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# On touch don't touch (use)



Entity	Refactoring Function	Why not
Small Splitter	Refactor Default VCL	To small but make it larger
Menus	<b>Move Method</b>	Can't touch it right
BringToFront fsStayOnTtop	<b>Windows message</b> <b>WM_SETTINGCHANGE</b>	Focus on background, sent by switching between desktop mode and tablet mode
Toolbar grips Controlbar, list	Introduce Parameter	Orientation is most times locked, consider one display direction.
Small Fonts	<b>Extract Method</b>	Fonts and pixels it does so by multiples of 4
WSDL	Extract Interface	WSDL is out - JSON is in
F1..F12 Keys	User Interface	No keys on virtual Keyboards
Only Sound	Background Sound	Getter- und Setter to log sound
Sanduhr	Responsiveness	User will not wait for hourglass



# Win 10 Developer Links



- Remote Delphi App from Android:

<https://www.realvnc.com/products/android/>

<http://www.modelmakertools.com/>

<https://github.com/maxkleiner/maXbox3/releases>

Whitepaper\_Windows\_10\_Big\_New\_Opportunity.pdf

[http://www.softwareschule.ch/download/maxbox\\_starter41.pdf](http://www.softwareschule.ch/download/maxbox_starter41.pdf)

- UWP Guideline → <https://msdn.microsoft.com/en-us/library/windows/apps/dn726767.aspx>
- <http://nemo.sonarsource.org/> (Live Sonar)
- Dev News in Win 10:  
<https://dev.windows.com/en-us/getstarted/whats-new-windows-10>

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# May the source be with you!

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