What is an Ultrabook™ Device

If you have been watching TV, you have probably seen a lot of commercials advertizing Intel Ultrabook™ devices.

http://www.youtube.com/watch?v=K2isDZgoTFk

http://www.youtube.com/watch?v=z1KBppDI9ok

These commercials achieve one thing and that is to pique curiosity. So what exactly is an Ultrabook and how is it different than a laptop/tablet/PC?

The definition of an **Ultrabook** is a high-end subnotebook defined by Intel. Ultrabooks are designed to be light weight without compromising performance and battery life. They use low-power Intel processors with integrated graphics and unibody chassis to fit larger batteries into smaller cases. Besides being light weight and having longer battery life, Ultrabooks provide a large set of new features. Most of these features are found on smartphones. Here is an overview of some of the cool hardware/software features of the new Ultrabooks by Intel.

Hardware Features

Graphics performance

Just like on 3rd generation Intel® Core™ i5 processors (codename: Sandy bridge), the GPU is now built into the CPU. This significantly improves performance on high-end games and other compute-intensive apps.

World-class battery life

A characteristic of mobility is having extended battery life. Ultrabooks typically have 6-8 hours of power based on typical PC usage.

Intel® Rapid Start Technology

Ultrabooks wake up and run faster from even the deepest sleep, saving time and battery life.

http://www.intel.com/content/www/us/en/architecture-and-technology/responsiveness-technologies.html

Hardware-based security

You can protect personal information if your Ultrabook is lost or stolen by locking it down—either automatically or by sending a lock command over the Internet. Once it's locked down, your device will not boot up and the locked screen will display your custom recovery message.

http://www.intel.com/content/www/us/en/architecture-and-technology/anti-theft/anti-theft-consumer-technology.html

Thunderbolt™ Technology and

Intel® Turbo Boost Technology 2.0

These features allow the CPU to be dynamically over clocked when extra performance is needed. This is analogous to having a Ferrari when you need the speed, without having to pay the overhead of maintaining it.

http://www.intel.com/content/www/us/en/architecture-and-technology/turbo-boost-technology-video.html?wapkw=intel%C2%AE+turbo+boost+technology+2.0

Software Features

Touch- and gesture-based UI

One of the coolest features is the Ultrabook's touch-enabled screen. It's not just a simple point and click. It allows for two point zooming, flicking, 5-point input, 2-point rotation, panning, etc. Just like smartphones allow a myriad of touch and gestures, the natural evolution mobile apps means we'll see them more on Ultrabooks.

Unlike smartphones, users will typically behave differently when using Ultrabooks by interacting more with the screen. Below are the suggested areas of interaction. The green bars are commonly used for scrolling, while the bottom corners are for buttons and action events.

Check out this demo and download the source code:

http://software.intel.com/en-us/articles/touch-demo

Context-aware sensors

Ultrabooks are loaded with a huge collection of location-based capabilities. The most popular context-aware features are the compass, accelerometer, inclinometer, Gyroscope, and light sensor.

Compass: Returns value polar coordinates of magnetic north and true north if available

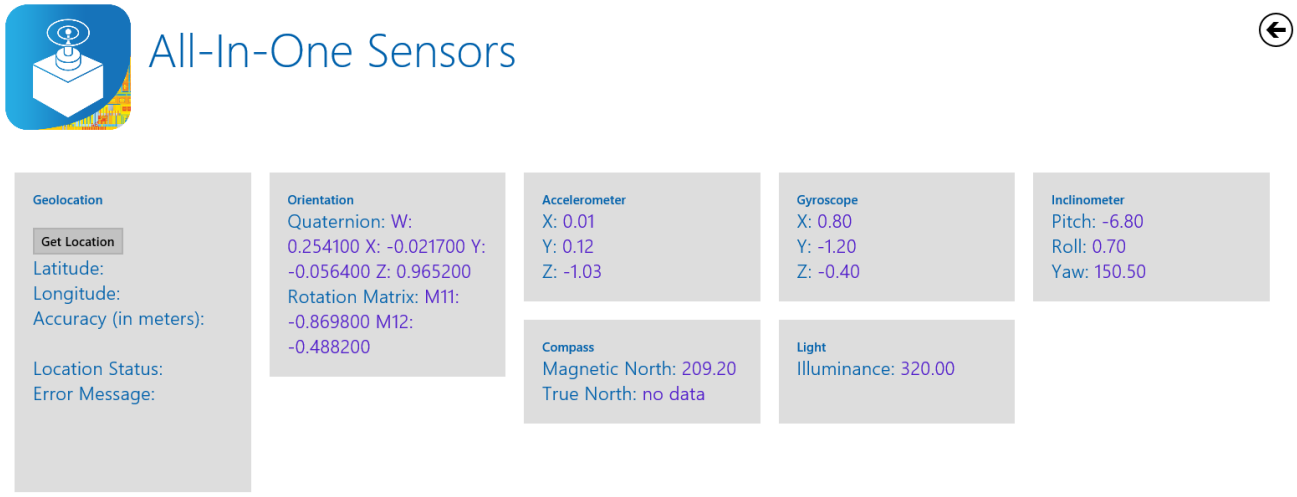
Accelerometer: Reads accelerations on XYZ axes in 3D.

Inclinometer: Provides the current pitch, roll, and yaw of the device, which can tell an application if the device is on a user's lap or flat desk.

Gyroscope: Provides angular velocity along XYZ axes.

Light Sensor: Reads the current ambient light value, helpful to determine if the device is in a dim or bright environment

Below is a sample app showing the data that can be shown from the sensors.



Near field communication

NFC is great for communicating with other devices when they are physically close. Sharing information between devices can happen with a simple bump. Using the Gyroscope and Accelerometer, an app can determine when two devices are hitting each other. NFC could also be used to read cards such as credit cards in a purchasing system.

Geolocation (GPS)

A GPS chip is enabled in each Ultrabook allowing apps to be geographically aware. Developers can extract the longitude and latitude of devices' current locations. Apps, such as traffic, directions, mapping, etc., can exploit this position feature.

Technical Tutorials and Sample Applications

Check out this article about Ultrabook App Labs and Demo. You can download the source code and run the sensor demos on a Windows 8* Ultrabook.

Utrabook App Labs: http://software.intel.com/en-us/articles/ultrabook-app-lab

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