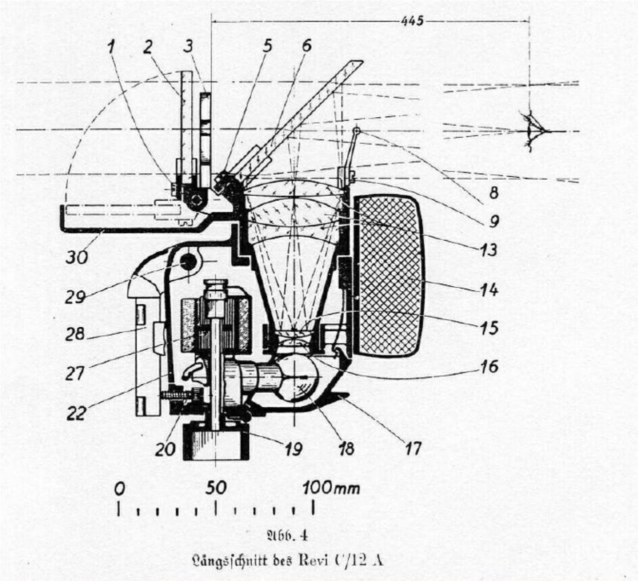
Wearable Technologies & Google Glass

Ilter Canberk



937 German Revi C12/A

1980s

VuMan in 1996.

These days...

Advantages of Wearable Devices

- Context Aware
  - Includes multiple sensor
  - Generally attached to the user’s body

- Availability and Easy Access
  - Most of the the time doesn’t ever require interaction
  - Can be interacted through voice or touch

- High Connectivity
  - Able to connect to the cloud for computationally intensive operations
  - Able to communicate with other digital devices through low-energy bluetooth

Designing for Wearables

It is assumed that the users typically have multiple devices that store and display information for specific time periods.

A wearable application should:

- Offer engaging functionality that supplements the user's life without taking away from it.
- Deliver information at the right place and time for each of your users.

A wearable application should not:

- Don't try to replace a smartphone, tablet, or laptop by transferring features designed for these devices.
- Don't send content too frequently and at unexpected times.

Looking at Glass

- Context Aware
  - includes a camera and a microphone
  - next version will have a depth sensor

- Availability and Easy Access
  - provides a small screen that’s always available to the eye
  - has voice control and a small button

- High Connectivity
  - is able to connect to the cloud through wi-fi (cloudlet concept)
  - is able to communicate with other digital devices, such as Android phones
  - also able to communicate with other bluetooth devices,

Sample Application

My research: http://ilter.me/design/glassistant

Developing on Glass

Setting-up Dev Environment

https://developers.google.com/glass/develop/gdk/quick-start

Let’s start building

Clone the starter code:

https://github.com/icanberk/Recipe-Glass

Recipe app:

- Displays steps for food recipes
- Supports multiple recipes
- Supports voice commands

Activities and Views

An activity is a single, focused thing that the user can do. Almost all activities interact with the user, so the Activity class takes care of creating a window for you in which you can place your UI with setContentView(View).

Views

- XML
- Programatically

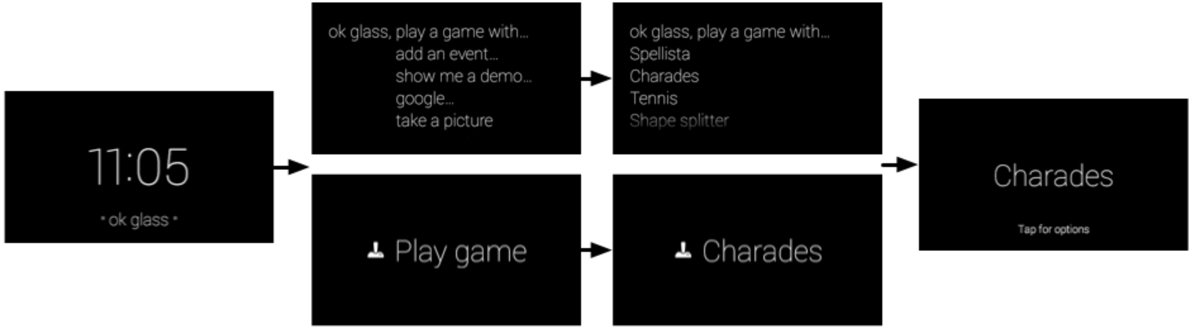
More information: http://code.tutsplus.com/tutorials/android-user-interface-design-layout-basics--mobile-3671

Using CardScrollView and Cards

Let’s make build something that will show the steps for one of the recipes

CardScrollView: A View that shows horizontally scrolling children views, referred to as cards.

Card/CardBuilder: The CardBuilder class helps with building Glass-themed cards with various layouts.



https://github.com/icanberk/Recipe-Glass/commit/6bd19bc6669b82ba94b44004b04a404a9c581b87

Adapters

An Adapter object acts as a bridge between an AdapterView and the underlying data for that view. The Adapter provides access to the data items. The Adapter is also responsible for making a View for each item in the data set.

Implementing a Menu

https://github.com/icanberk/Recipe-Glass/commit/1c46b3f1c11075f63bfe661170ab3d196ac4c505

Implementing Menu Actions

https://github.com/icanberk/Recipe-Glass/commit/ca6f94df6734858cd6eba0c433d7f9eb4c8e0563

Implementing Voice Commands

https://github.com/icanberk/Recipe-Glass/commit/8012ebf06943a369ecf8e0e52b23ff2b3f156c12