Google Cardboard and VR

CS 4720 – Mobile Application Development
Virtual Reality

• Virtual reality is the ability to interact with a simulated three-dimensional environment at varying degrees of immersion.

• Simply put - you feel like you are somewhere else, operating in a different environment, usually to the exclusion of your current surroundings.

• Including current surroundings is often called “augmented reality”.
Augmented Reality
Virtual Reality
Virtual Reality
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It’s just for games, right?

- Games
- Flight simulators
- Sophisticated testing (car prototypes, etc.)
- Recreation (nature hikes, exploring)

- What does this have to do with mobile?
- VR headsets are huge!
Here is why we care

Google Cardboard

• Break VR down to its simplest components and what do you get?
  – A screen for each eye
  – Not really necessary to fully move around
  – Head rotation still needed
Google Cardboard

- A cheap way to hold up your phone to your face with two separate screens
- Samsung Gear is another option
- Many current VR options use phone-like screens
Google Cardboard
Use Cases

- Viewing 3D objects easily (see CNN report)
- Panoramic pictures
- Games
- Other thoughts?

- [http://www.wearable.com/google/the-best-google-cardboard-apps](http://www.wearable.com/google/the-best-google-cardboard-apps)
How to Program for VR

• In many cases, you might not even need to really do the VR programming
  – Consider the CNN example

• [https://developers.google.com/cardboard/overview](https://developers.google.com/cardboard/overview)

• Can build natively for Android using OpenGL
• Can build for both Android and iOS using Unity