EECE401 Senior Design I Electrical and Computer Engineering Howard University Instructor: Dr.Charles Kim www.mwftr.com/SD1415.html

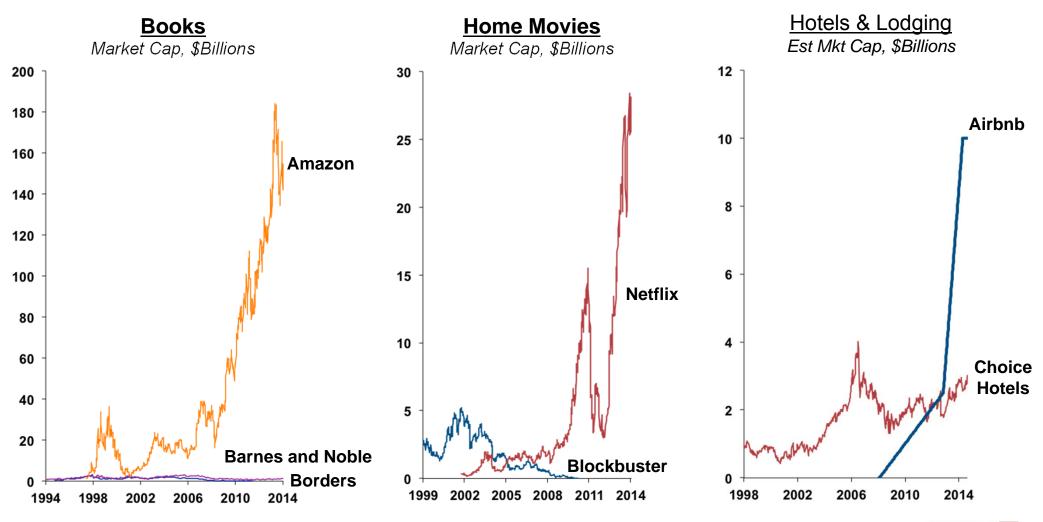
Capital One Design Project



Jared Alexander – Senior Mobile Developer @jaredalexander



Leveraging technology to reinvent sleepy businesses can unlock value and be transformative





* Airbnb estimated from implied funding valuations. Source:FactSet

At Capital One, we see banking ... MORE LIKE THIS



DREAM, DISRUPT, DELIVER.



"I think Capital One is the Apple of banks."



- Steve Wozniak, Co-Founder of Apple, June 2014

A NEW WAY TO PAY









Objective

Design and build a mind-blowing

Android Wear watch app for Capital One customers





dnogolo wear



What is Android Wear?

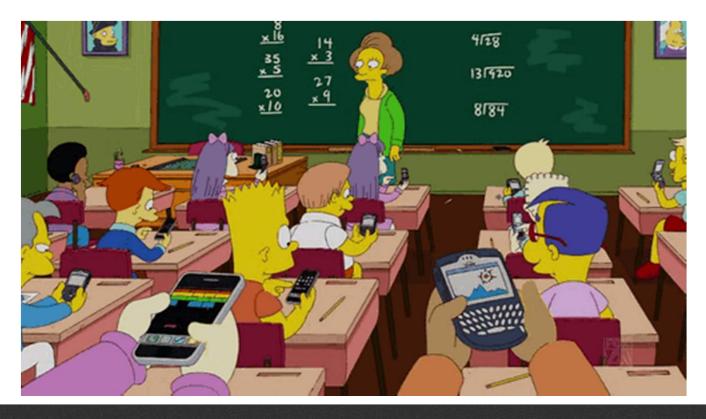
- Google's new platform for wearable technologies
- SDK for building Android apps that run on your wrist and interact with your phone





We check our Android phones 125x a day!

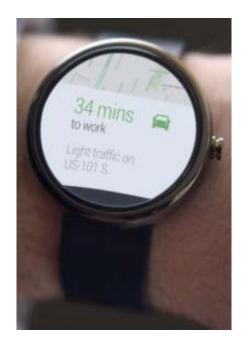
Assuming we sleep 8 hours a day, that's over 7x an hour!





Why do I want a smart watch?

- notifications
 - and quick actions
- Google Now integration
- voice commands on your wrist
- track fitness
- reduce # times we pull our phone out of our pocket
- pay your credit card bill ;)
- feel like Dick Tracy
- many reasons we haven't even imagined yet!





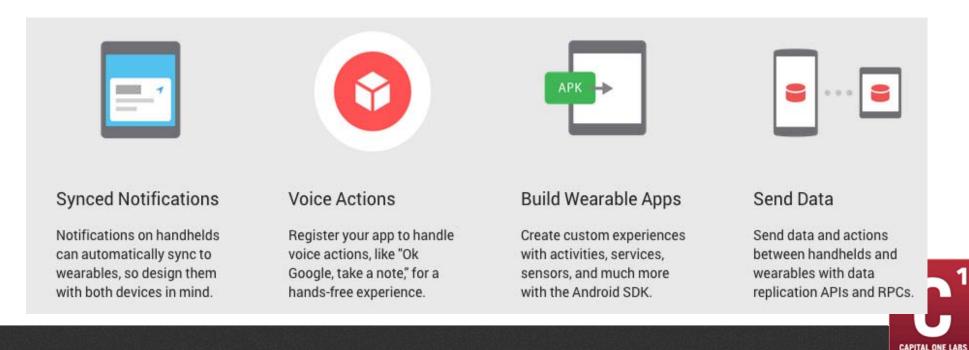
What watches are available?





Android Wear Developer Basics

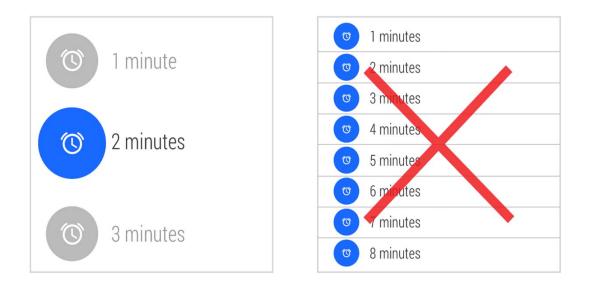
- Requires Android phone running 4.3+
- Users required to download Android Wear app from Google Play to pair and configure devices
- Android Wear APIs provided by Android Support Library and Google Play Services



Android Wear Design

Great Android Wear experiences are:

- Launched automatically
- Glanceable
- Zero or low interaction





How do I get started?

ć.	

New Project

Select the form factors your app will run on

Different platforms require separate SDKs

~	Phone	and	Tablet

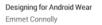
Lower API levels target more devices, but have fewer features available. By targeting API 19 and later, your app will run on approximately 13.6% of the devices that are active on the Google Play Store. Help me choose. TV (Not Installed) Minimum SDK Vear Minimum SDK API 20: Android 4.4 (KitKat Wear) Glass Minimum SDK Glass Development Kit Preview (Google Inc.) (API 19)	Minimum SDK	API 19: Android 4.4 (KitKat)	-
Minimum SDK Wear Minimum SDK API 20: Android 4.4 (KitKat Wear) Glass		and later, your app will run on approximately 13.6% of the devices that are active on the	
Wear Minimum SDK API 20: Android 4.4 (KitKat Wear) Glass	TV (Not Installed)		
Minimum SDK API 20: Android 4.4 (KitKat Wear) Glass	Minimum SDK		Å V
Glass	Vear Vear		
	Minimum SDK	API 20: Android 4.4 (KitKat Wear)	÷
Minimum SDK Glass Development Kit Preview (Google Inc.) (API 19)	Glass		
	Minimum SDK	Glass Development Kit Preview (Google Inc.) (API 19)	A T



Learn more

- <u>https://developer.an</u> <u>droid.com/training/b</u> <u>uilding-</u> <u>wearables.html</u>
- <u>https://www.google.</u>
 <u>com/events/io/io14vi</u>
 <u>deos</u>







Designing for wearables Emmet Connolly, Alex Faaborg, Hayes Raffle,...





Fullscreen Apps for Android Wear Will Brown, Michael Kolb



How We Customized Google Apps for Android Wear Dan Aminzade



Android Wear: The developer's perspective Justin Koh, Austin Robison



New Notification Features for Android Wear Griff Hazen

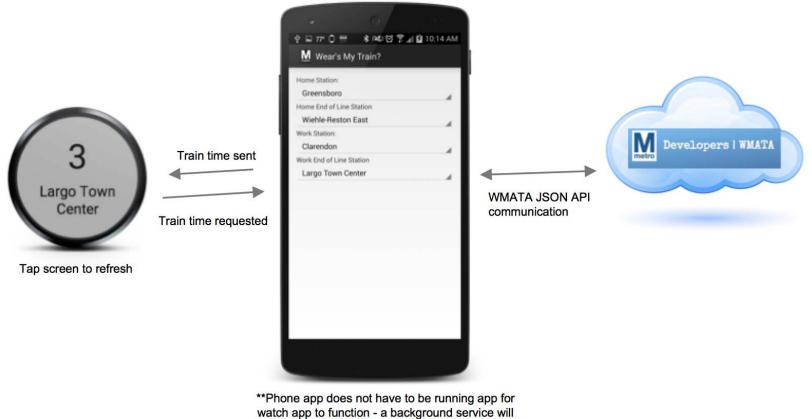


Building Advanced UIs for Android Wear Mark Renouf



Learn more

- Github Android Wear Projects
- https://github.com/jaredalexander/wearsmytrain



monitor watch app requests for data**



What banking functions might you want to do on a watch?

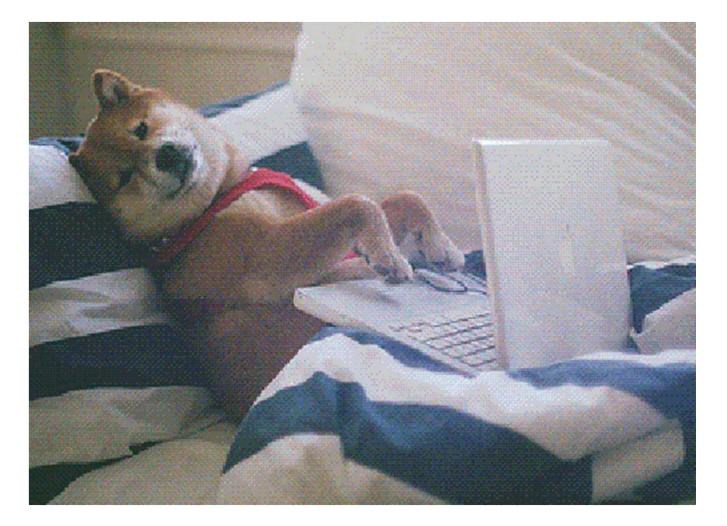
Potential features:

- Find nearest ATM
- My Bank Accounts
 - View Balances
- My Credit Cards
 - View Balances
 - With option to pay balance
 - Reward Balance (\$)
 - With option to redeem for statement credit
- View my credit score
- Actionable Notifications
 - Credit Payment Due
 - Action: Pay
 - Fraud Alert Verify transactions
 - Actions: Verify or Report Fraud

∲ 64° ^{Good}	* ****	<u>م</u> ال ف	10:09 AM
CREDIT CARDS	Sig	gn Out	
🖷 My Cards		>	My Card
Card Rewards	6	>	VISA SIGNA
🕫 Credit Tracke	er	>	VISA BUSINE
24 Pay My Bill		>	
📰 Payment Acti	vity	>	100% fi
🚈 Account Serv	ices	>	
Go To			
🆻 Capital One B	ank	₽	
🥶 Capital One 3	60	₽	
More			
🔅 Settings		>	
👚 View All Proc	lucts	>	
💰 Find a Branch	n/ATM	>	



Before you start coding...

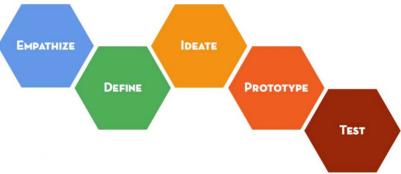




Use Design Thinking!



- Design Thinking is a creative problem solving method
- Used when our business and tech goals are clear, but the new products, services, and experiences we should offer to meet human needs are unclear





Deliverables

- Backend web service that acts as mock data source
- Android app that serves as the "middle-man" between the web service and watch
- Android Wear companion app
- Report
 - Design thinking process you carried out
 - Technical documentation
 - Lessons learned



Deliverables



GUDACIO Rear



Internet

Android App acts as a middle-man, relaying data between web service and watch Parse

Web service / Database to provide mock data (e.g. account list, balances, etc..)



How will Capital One help?

We'll give your team a watch!
We're local (Arlington, VA)

We can provide mentors to give best practices around design thinking, software development, and more!

We'll invite your team into the office periodically to hang out and code



Questions?

Contact information:



Jared Alexander Jared.Alexander@capitalone.com @jaredalexander



William Chichester William.Chichester@capitalone.com



Important Events

- Submit resumes for our Technology Development Program & Internship Program on BisonCareerLink by October 8th
- We are hosting an info session with NSBE tonight!
 - 6:30 PM Reading Room (2nd Floor Room 2019)
 - FREE PIZZA







