

# Introduction to Mobile Development

Lab 1 - Individual Work

MODE-4201

13797

Mohammad Shamas



2021-09-24

Andrew Kuo

# Mobile Development Topic

## History

Mobile computing can be traced to Apple's Newton Message Pad (1993) also known as the first hand-held computer. This eventually led to the iconic Palm Pilot (1996) by US Robotics with designation of Personal Digital Assistant (PDA). In 1999, Blackberry released the first device allowing two-way paging, and eventually in 2002 introduced wireless services, such as browsing, text messaging, email, and mobile telephone. In 2007 Apple revealed the first smartphone, iPhone, with the introduction of apps. Google will eventually join with a consortium of eighty-four companies to release the first Android device, T-mobile G1, in 2008. (DePaul University, n.t.d.) According to BankMyCell, there are now 3.8 billion active smartphone users today. (Turner, 2021)

## Meaning

According to a 2006 book, Smart Phone and Next Generation Mobile Computing, Mobile computing "refers to a broad set of computing operations that allow a user to access information from portable devices such as laptop computers, PDAs, cell phones, handheld computers, music players, portable game devices, and so on." (Zheng et al., p.2)

It goes on to explain the ability to synchronize data while connected to the internet while working with the data on said device while disconnected. Foretelling the future from 2006 of a time when mobile wireless technologies matured allowing "ubiquitous mobile access anywhere, anytime." (Zheng et al., p3), before the appearance of the first iPhone.

## Advantages

With the introduction of mobile computing tablets and smartphones, employees are able to be productive even when they are away from the office. Since its introduction, businesses have shifted to online services and products stores. SAP, one of the largest software developers in the world, advocates the need for businesses to ensure mobile friendly websites due to its growing market. Retail and commercial stores have upgraded their store use of tablets in handling checkout and customer services. Mobile Point of Sale systems are starting to replace traditional staff and the ability to aid staff in providing immediate customer assistance allows

replacement of traditional booths and register location. The ability to bring information portably to any connected location makes it a powerful tool to any workspace. (Yackulic, 2014)

These advancements bring new changes to society and how we behave and interact with each other. It grants a boost in productivity and while providing updated information from the Internet at any covered area.

## Disadvantages

The disadvantages of mobile computing are connectivity, human resources and relationships. Mobile computing's many benefits and weaknesses is the reliance on being within available wireless coverage provided by either service provider or local wireless network. Even the cellular network can experience poor coverage such as outside populated areas and undergrounds. The boon of mobile computing has brought the glimpse of the future where humans are not needed and can be replaced by competent computers. These mobile computers will replace entry jobs that were formerly accessible to lower skilled workers. Mobile computing has changed the way we interact with others and the human social needs may not be satisfactory due to new digital distance.

# Mobile Manufacturer

Table 1: Mobile Manufacturer Comparison

Manufacturer	Apple	Google
Phone Model	iPhone 12 mini	Pixel 5
Picture/Photo		
Price	\$799	\$799
Release Date	2020-11-13	2020-10-15
Operating System	iOS 14.1 (current 14.8)	Android 11
Chipset	Apple A14 Bionic (5 nm)	Qualcomm SM7250 Snapdragon 765G 5G (7 nm)
Processor (CPU)	Hexa-core (2x3.1 GHz Firestorm + 4x1.8 GHz Icestorm)	Octa-core (1x2.4 GHz Kryo 475 Prime & 1x2.2 GHz Kryo 475 Gold & 6x1.8 GHz Kryo 475 Silver)
Memory (RAM)	4GB	8GB
Memory (External)	None	None
Display	Super Retina XDR, OLED 5.4in	OLED, 90Hz, HDR10+ 6.0in
Camera (Rear)	<ul style="list-style-type: none"> <li>12 MP, f/1.6, 26mm (wide), 1.4µm, dual pixel PDAF, OIS</li> <li>12 MP, f/2.4, 13mm, 120° (ultrawide), 1/3.6"</li> </ul>	<ul style="list-style-type: none"> <li>12.2 MP, f/1.7, 27mm (wide), 1/2.55", 1.4µm, dual pixel PDAF, OIS</li> <li>16 MP, f/2.2, 107° (ultrawide), 1.0µm</li> </ul>
Camera (Front)	12 MP, f/2.2, 23mm (wide), 1/3.6"	8 MP, f/2.0, 24mm (wide), 1/4.0", 1.12µm
GPS	A-GPS, GLONASS, Galileo, QZSS and BeiDou	A-GPS, GLONASS, GALILEO, QZSS, BDS
Battery	Li-Ion 2227 mAh, non-removable	Li-Po 4080 mAh, non-removable
Battery (Talk time)	N/A	N/A

Network	Wi-Fi 802.11 a/b/g/n/ac/6, dual-band, hotspot	Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct, hotspot
Synchronization with desktop/laptop	Lightning, USB 2.0	USB Type-C 3.1
Voice enabled	Siri	Google Assistant
Browser	Safari	Android Browser
IP Rating	IP68	IP68
Weight	133g (4.70oz)	151g (5.33oz)

# Mobile Plans

Table 2: Mobile Plans

Mobile Plan Terms	Cellphone (Bring your own)	
Service Provider	Rogers	Bell
Plan	Rogers Infinite Unlimited data	Unlimited Share 30
Calls	<ul style="list-style-type: none"> <li>Unlimited Canada-Wide Calling</li> </ul>	<ul style="list-style-type: none"> <li>Unlimited Canada-Wide Calling</li> </ul>
Data	<ul style="list-style-type: none"> <li>15 GB</li> <li>Additional 15 GB High Speed (Promotion)</li> </ul>	<ul style="list-style-type: none"> <li>30 GB</li> </ul>
Messaging	<ul style="list-style-type: none"> <li>Unlimited</li> </ul>	<ul style="list-style-type: none"> <li>Unlimited</li> </ul>
Global Texting	<ul style="list-style-type: none"> <li>Standard charges apply</li> </ul>	<ul style="list-style-type: none"> <li>Standard charges apply</li> </ul>
Voice mail	<ul style="list-style-type: none"> <li>3 messages (up to 3min in length each)</li> <li>Stored up to 3 days</li> </ul>	<ul style="list-style-type: none"> <li>25 messages (up to 5min in length each)</li> </ul>
Call Features	<ul style="list-style-type: none"> <li>Call Display</li> <li>2500 Call Forwarding minutes</li> </ul>	<ul style="list-style-type: none"> <li>Call Display</li> </ul>
Service Credits (as Free Upgrades)	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Fees	<ul style="list-style-type: none"> <li>\$80/month</li> <li>Additional Call Forwarding minutes 10¢/minute</li> </ul>	<ul style="list-style-type: none"> <li>\$80/month</li> </ul>
Usage policy (Terms and Conditions)	<ul style="list-style-type: none"> <li><a href="#">Rogers Infinite Plans Data Policy</a></li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Bell Internet policy overview</a></li> </ul>
Coverage	<ul style="list-style-type: none"> <li>Canada</li> </ul>	<ul style="list-style-type: none"> <li>Canada</li> </ul>
Reduce speed on overage	<ul style="list-style-type: none"> <li>Up to 512 kb/s Up/Down</li> </ul>	<ul style="list-style-type: none"> <li>Up to 512 kb/s Up/Down</li> </ul>
Extended Return Policy	<ul style="list-style-type: none"> <li>Worry-free returns within 30 days at no cost for online orders</li> </ul>	<ul style="list-style-type: none"> <li>15 day at the start of your commitment start date. (60 days due to COVID-19)</li> </ul>

# References

- Rogers Communication. (n.t.d.). Bring your own phone. Rogers.  
[https://www.rogers.com/plans/bring-your-own-device?icid=R\\_WIR\\_JOR\\_ITHG3Y](https://www.rogers.com/plans/bring-your-own-device?icid=R_WIR_JOR_ITHG3Y)
- Bell Canada. (n.t.d.). Cell Phone Plans - Bell Mobility. Bell.  
[https://www.bell.ca/Mobility/Cell\\_phone\\_plans](https://www.bell.ca/Mobility/Cell_phone_plans)
- Bell Canada. (n.t.d.). Return policy for Bell Mobility customers. Bell.  
[https://support.bell.ca/billing-and-accounts/sales\\_and\\_refund\\_policy/how\\_do\\_warranties\\_and\\_returns\\_on\\_bell\\_ca\\_online\\_orders\\_work#INT=All\\_TXT\\_footer\\_Mass\\_040320\\_HC\\_returns](https://support.bell.ca/billing-and-accounts/sales_and_refund_policy/how_do_warranties_and_returns_on_bell_ca_online_orders_work#INT=All_TXT_footer_Mass_040320_HC_returns)
- DePaul University. (n.t.d.). Brief History of Mobile Computing. IT 372 Web page. Referenced on 2021 Sept 19 at <http://facweb.cs.depaul.edu/sjost/it372/documents/history-mobile.htm>
- Turner, A. (2021 Sept). How Many Smartphones Are In The World. BankMyCell. Referenced on 2021 Sept 20 at <https://www.bankmycell.com/blog/how-many-phones-are-in-the-world>
- Zheng, P., Ni, L. (2006). Smart Phone and Next Generation Mobile Computing. Amsterdam: Morgan Kaufmann, 2006. ISBN 9780120885602. <https://search-ebscohost-com.dproxy.library.dc-uoit.ca/login.aspx?direct=true&db=e000xna&AN=166540&scope=site>.
- Yackulic, C. (2014, Octo 20). How Mobile Computing is Changing the World. Android Headlines. <https://www.androidheadlines.com/2014/10/mobile-computing-changing-world.html>
- Apple. (n.t.d.). iPhone 12. Apple Store. <https://www.apple.com/ca/iphone-12/specs/>
- Apple. (n.t.d.). iPhone 12 Image. Apple Store. <https://www.apple.com/shop/buy-iphone/iphone-12/5.4-inch-display-128gb-black-verizon>
- Google. (n.t.d.). Pick your Pixel. Google Store.  
[https://store.google.com/ca/magazine/compare\\_pixel?hl=en-US](https://store.google.com/ca/magazine/compare_pixel?hl=en-US)
- Google. (n.t.d.). Google Pixel 5 Image. Google Store.  
[https://lh3.googleusercontent.com/wzqxpMmAj6C-dvGzPe023htCtZMRTkUebh6EWtypdDYDTf8XIIp8d2cLJSoPWtEyNiNGgKuX4fXt4F\\_shaNueA](https://lh3.googleusercontent.com/wzqxpMmAj6C-dvGzPe023htCtZMRTkUebh6EWtypdDYDTf8XIIp8d2cLJSoPWtEyNiNGgKuX4fXt4F_shaNueA)
- GSMarena. (n.t.d.). Apple iPhone 12 mini. Website.  
[https://www.gsmarena.com/apple\\_iphone\\_12\\_mini-10510.php](https://www.gsmarena.com/apple_iphone_12_mini-10510.php)
- GSMarena. (n.t.d.). Google Pixel 5. Website. [https://www.gsmarena.com/google\\_pixel\\_5-10386.php](https://www.gsmarena.com/google_pixel_5-10386.php)

SAP. (n.t.d.). Why SAP. Website. <https://www.sap.com/why-sap.html>

Statistics Canada. (2020, May 27). Canadian's mental health during the COVID-19 pandemic. Government of Canada. <https://www150.statcan.gc.ca/n1/daily-quotidien/200527/dq200527b-eng.htm>