



Mobile application development

移动应用开发



Lecture 06:

Understanding The Mobile App Development
How to have an effective mobile App design



Dr Ata Jahangir Moshayedi

Prof Associate ,
School of information engineering Jiangxi
university of science and technology, China

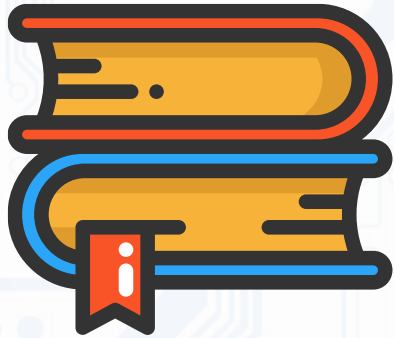


EMAIL: ajm@jxust.edu.cn

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江西理工大学信息工程学院
JIANGXI UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF INFORMATION ENGINEERING



MOBILE APPLICATION DEVELOPMENT

LECTURE 06: Understanding The Mobile App Development

How to have an effective mobile App design



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App Inventor



Introduction

- Mobile apps account for over half of all time spent consuming digital media.
- Smartphone users spend about 90 percent of their mobile time on apps.
- 85 percent of consumers prefer native mobile apps over a mobile website.
- Mobile apps account for 42 percent of all mobile sales for Fortune 500 companies.
- The average consumer has about 30 apps installed on his device and spends about 35 hours a month using them.





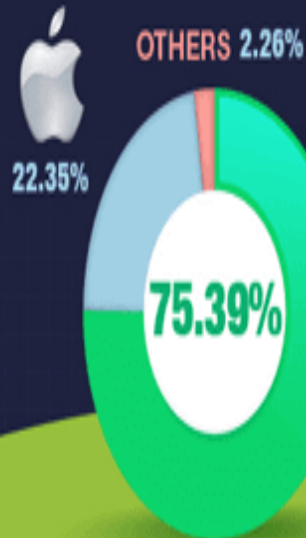
Android Ecosystem



App Inventor

ANDROID ECOSYSTEM

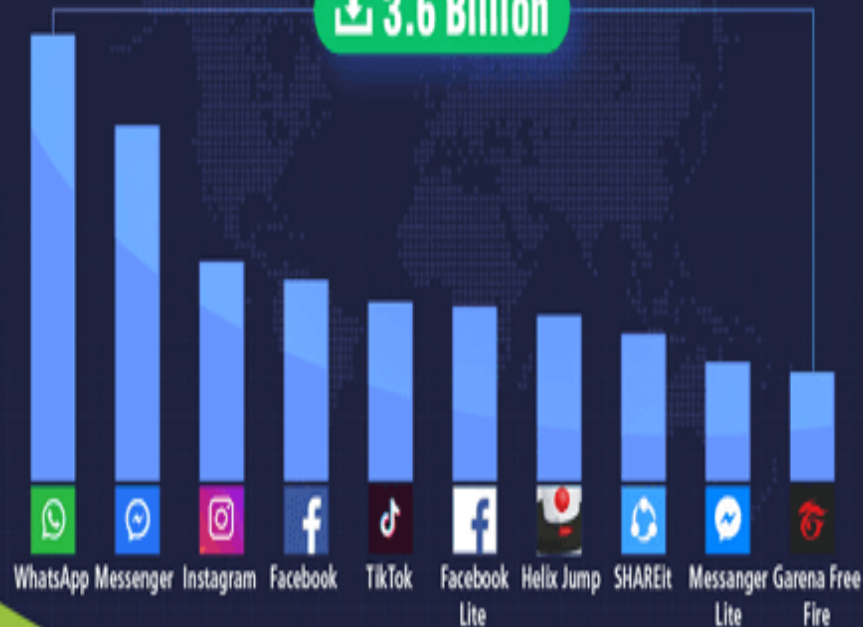
MOBILE OS MARKETSHARE



Source : <http://gs.statcounter.com/os-market-share/mobile/worldwide>

The Top Ten Android apps in the world
last year had a combined **download** figure of...

↓ 3.6 Billion



<https://www.statista.com/chart/16648/global-top-10-android-apps-2018/>

ANDROID APP CATEGORIES

- Tools
- Communication
- Video Players & Edit
- Travel & Local
- Social
- Productivity
- Music & Audio
- Entertainment
- News & Magazines
- Books & Reference



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App Inventor



Mobile application life cycle



01

You've an App idea!

Brainstorming and Requirement Analysis



02

Wireframing

We create wireframes to identify problems before they arise



03

UI/UX Design

We refine the appearance of elements till you're pleased

04



App Development

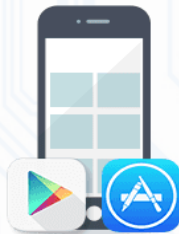
Our approach to programming in iterations improving in each stage



07

Maintenance

We Offer Maintenance support to our clients to resolve technical issues.



06

App Store Launch

The new app is ready for download



05

Beta Release

For your review purpose. we setup the app at staging within a limited group





Discovery phase

- You think you know exactly the way your project should be. But then you meet your developer and have to answer a literal flow of incomprehensible questions:
 - “How many users with different rights for logging in should your app have?”
 - What OS do you want it to work on?
 - What smartphone screens do you want your design to be suited to?”
- **The discovery phase is, therefore, necessary for the developer to translate human language into technical documentation.**
 - A correctly-devised discovery phase should include the following stages:
 - research into competitors;
 - feature mapping;
 - technical requirements specification;
 - the setting of costs and deadlines.





Learn all the ins and outs of a discovery phase:

The Five Steps of a Successful Discovery Phase



DEFINE YOUR
BUSINESS GOALS



IDENTIFY HOW YOU
WILL MEASURE
SUCCESS



CARRY OUT USER
RESEARCH



MAP THE CUSTOMER
JOURNEY



REVIEW THE
COMPETITION

———— BUSINESS ————

———— USER ————

———— MARKET ————



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App Inventor



Establishing Mobile App Goals and Objectives

- This is a crucial step in the planning phase of your mobile app. Once you've determined an app will advance important objectives in your mobile marketing scheme, you need to map out how your app will get you there.
 - **What problem (or problems) will your app solve for your customers?**
 - **What features will it include?**
 - **What is your app's core appeal?**
- In many cases, determining your app's features and benefits is a balancing act between your overall app development budget and your in-house capabilities.





Design /Sketch

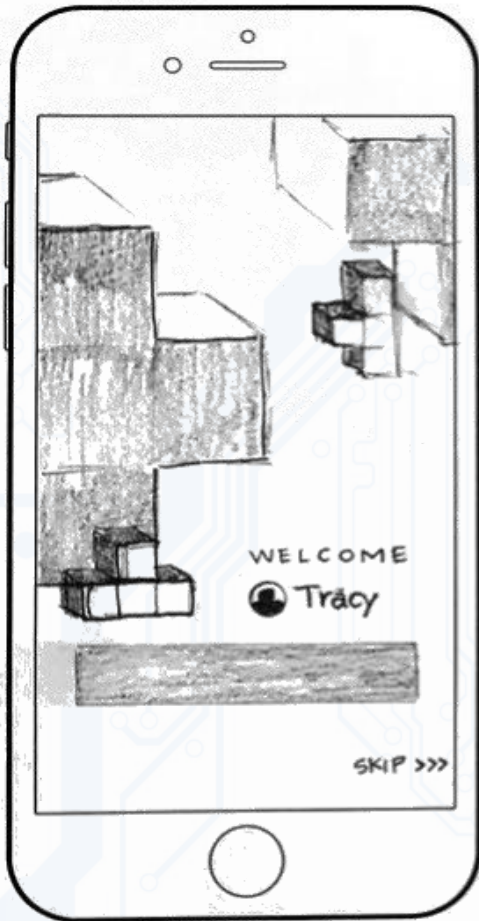
- **Design**

- Now it's time to give your digital project its own unique look and feel.
- The designers work to make your app stand out and do so in three defined steps.
 - **Sketch.**
 - The first step is sketching. At this stage, the designers prepare the concept of the app.
 - If you need to create a sketch, a cool app to use Paper.
 - Not only does it look similar to a real paper sketch, but it also lets you seamlessly turn your paper draft into a digital format.





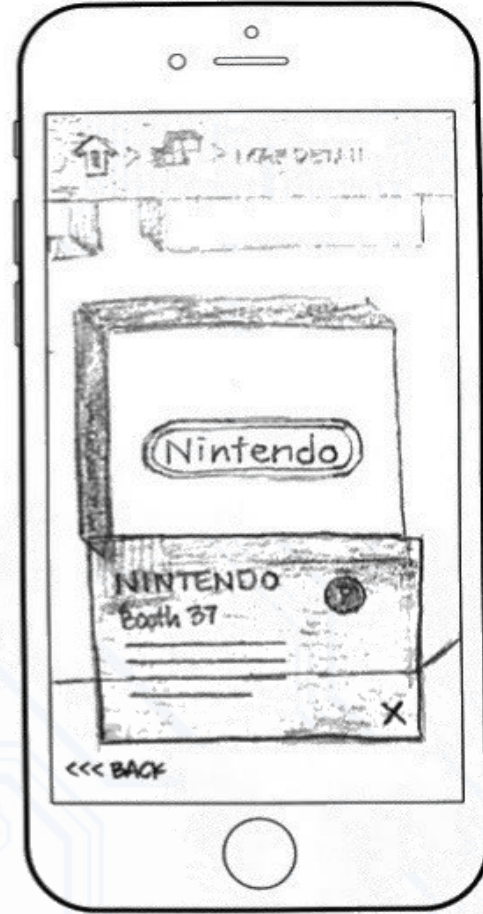
Design /Sketch



START B



EVENT



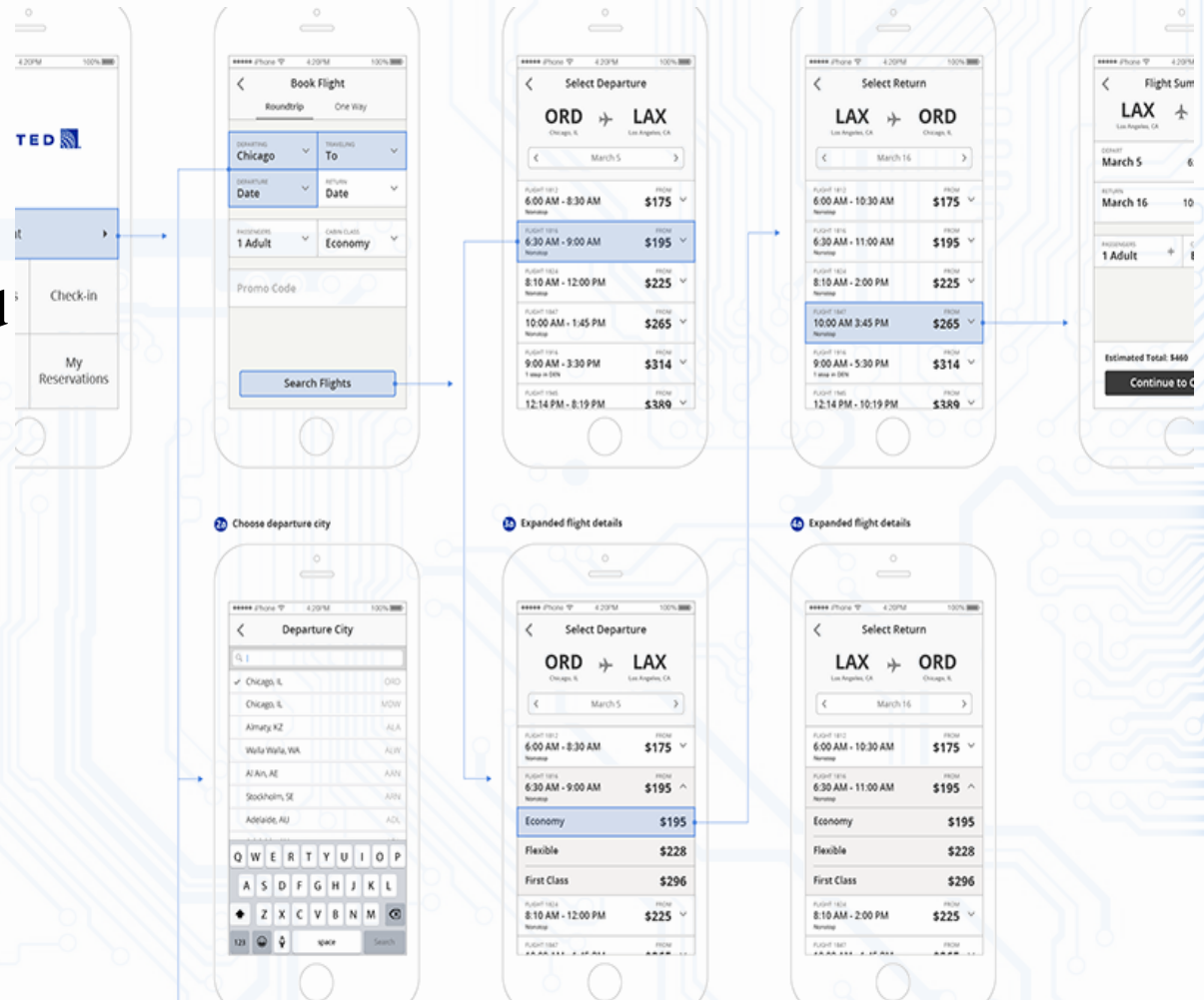
MAP





Wireframe.

- Next, it's time to transfer it onto a tablet and prepare a black and white model of each screen.
- These already look more or less like a finished design, but without the actual content and colour scheme having been added.





Finalize Your Wireframe and Test Your Prototype

- At this point, you should nail down any changes in your wireframe identified during the backend planning process.
- Once you agreed upon the wireframe and storyboard, it's time to build an interactive prototype.
- Prototyping is an essential step in the app development process, because it gives you an opportunity to really evaluate design concepts, gather feedback, and identify dead links and flaws in the flow and usability of your mobile app. There are several good prototyping tools available online to simplify the process.
- It's a good idea to bring in people who are not part of your mobile app team to test and evaluate your prototype. Observe them as they interact with the app and ask for honest feedback on the app's overall functionality and ease of use. Adapt the UI/UX to correct for any shortcomings identified during this stage.
- **Your goal is to finalize your app design concept and create a high fidelity prototype that will guide you through the actual app development process.**





Prototype

- **This is the last stage of design.**
 - A prototype is a clickable model of an app that looks just like the real app.
 - However, the backend part still lies in the future, so it doesn't function.
 - You can already use your prototype to show to sponsors or potential clients.





Test and Test Again

- This is an exciting time in the app development lifecycle—you finally have a complete app concept with exciting graphics and perfectly placed text.
- Now you need to rigorously test your app in a variety of real-world scenarios to sniff out and correct any technical flaws.
- Go back to your original design and planning documents and go through every feature; don't assume something works in the final concept just because it worked during the development phase.
- Again, it's a good idea to observe other users as they test the app—they may have questions and insights that aren't obvious to you since you've been involved in app development since the earliest days.
- You may even want to use one of the online mobile UX testing tools that give you real-time feedback and analytics; several work on a freemium model that is cost effective for SMEs. Be sure to test for cross platform compatibility of images, graphics, and user experience.
- When you're confident your app is working correctly in all scenarios and you're happy with the appearance and usability of the interface, it's time to make the final preparations to launch your mobile app.





Preparing for Launch

- The steps you take to prepare for your app launch may have the greatest effect on its ultimate success, and getting your marketing department involved early in the process is one of the most important.
- Marketing will help you with keyword research, which is essential for SEO and app store optimization (ASO), both of which are key for discoverability.
- Your market and keyword research will guide your choices for app titles and descriptions as you prepare to submit your mobile app to the various marketplaces for distribution.
- You'll also want to get high-quality screenshots of your app and maybe even a promotional video and/or demo at this point.





Preparing for Launch

You'll also need a website—or at least a landing page—to support and promote your app. This is important for branding and awareness, and also for search and discoverability; [Google's App Indexing API](#) uses content within your app and your app's web page in its search results algorithm.

Key components of your app's landing page or website should include:

- your app's name and icon
- badges and names of the stores where your app can be downloaded
- screenshots and your promotional video
- a mailing list/subscription form (pre-launch) and download links (post launch)
- contact and support information
- links to your social media accounts
- a press kit
- testimonials and user reviews (post launch)





Preparing for Launch

Be sure to promote your app on your business website and on your social media accounts;

- if you have a company blog, publish updates throughout the development process to create interest and anticipation.
- It's also a good idea to launch an email campaign.
- Depending on your market niche and the type of app you are building, you may also want to enlist the help of experts and social influencers to help promote your app.
- As you walk through your app promotion checklist, don't forget to include app analytics to help you optimize your app and increase its appeal to your target audience. Google Analytics is a good place to start.
- Now is also a good time to consider alternative app marketplaces, aside from Apple's App Store and Google Play, to distribute your app.
- Another option to consider during the pre-launch phase is submitting your app to [PreApps](#), an app marketplace that connects developers with early adopters, for some pre-release feedback.





Official Release

- Your official release date should represent the climax of your app marketing efforts up to this point.
 - It's time to create some buzz with write-ups and articles by influential bloggers and journalists—and to make an announcement to everyone who showed interest in your app prior to launch.
 - Promote your release with an email blast and mentions (with links) on all your social media profiles.
 - The idea is to generate downloads and ratings, and build some momentum.
- Don't rest on your laurels once your app is released; you want to keep your new users engaged.
 - This is a great time to use push notifications to announce a special offer or promotion so users will open your app.
 - Consider offering incentives such as a one-time discount or free product or service for customers who download your app.
 - Remember that marketing your app is an ongoing process, and your release-date efforts are just the beginning.





Official Release

- Finally, have a clear channel for feedback and be responsive to the comments and concerns of your users; a timely update or fix can work wonders for retaining your customers.
- Pay attention to your analytics and track those KPIs that define success for your marketing objectives.
- Once you understand the key processes and steps in the mobile app development lifecycle, you'll be better prepared to develop an app with the function and features you need on a budget and timeline you can comfortably manage.





Student Task_6



1. Write a list ,name and comparison of prototype tools for mobile APP developer with the link
2. Write a list ,name and comparison of online UI/UX tools evaluator
3. How to work with google analysis (for app developer)

Next lecture

- **JUST ON MOOC and just PPT format**
- **Your file should have this format of name**

<Task number><student name><Student ID>.ppt





Reference

- <https://magora-systems.com/application-development-life-cycle/>
- **Teaching with AppInventor**
<http://appinventor.mit.edu/explore/teach.html>
- **AppInventor Tutorials:**
<http://appinventor.mit.edu/explore/ai2/tutorials.html>
- **Sounds** <http://www.soundbible.com>
- **App Inventor:** <http://appinventor.googlelabs.com/>
- **Appinventor.org:** <http://www.appinventor.org/>
- **Wolber, Abelson et al. text:** <http://www.appinventor.org/text2011>
- **Group:** <http://groups.google.com/group/app-inventor-instructors>
- **Wolber course:** <http://appinventor.org/course-in-a-box>
- **Morelli course:** <http://turing.cs.trincoll.edu/~ram/cpsc110/>



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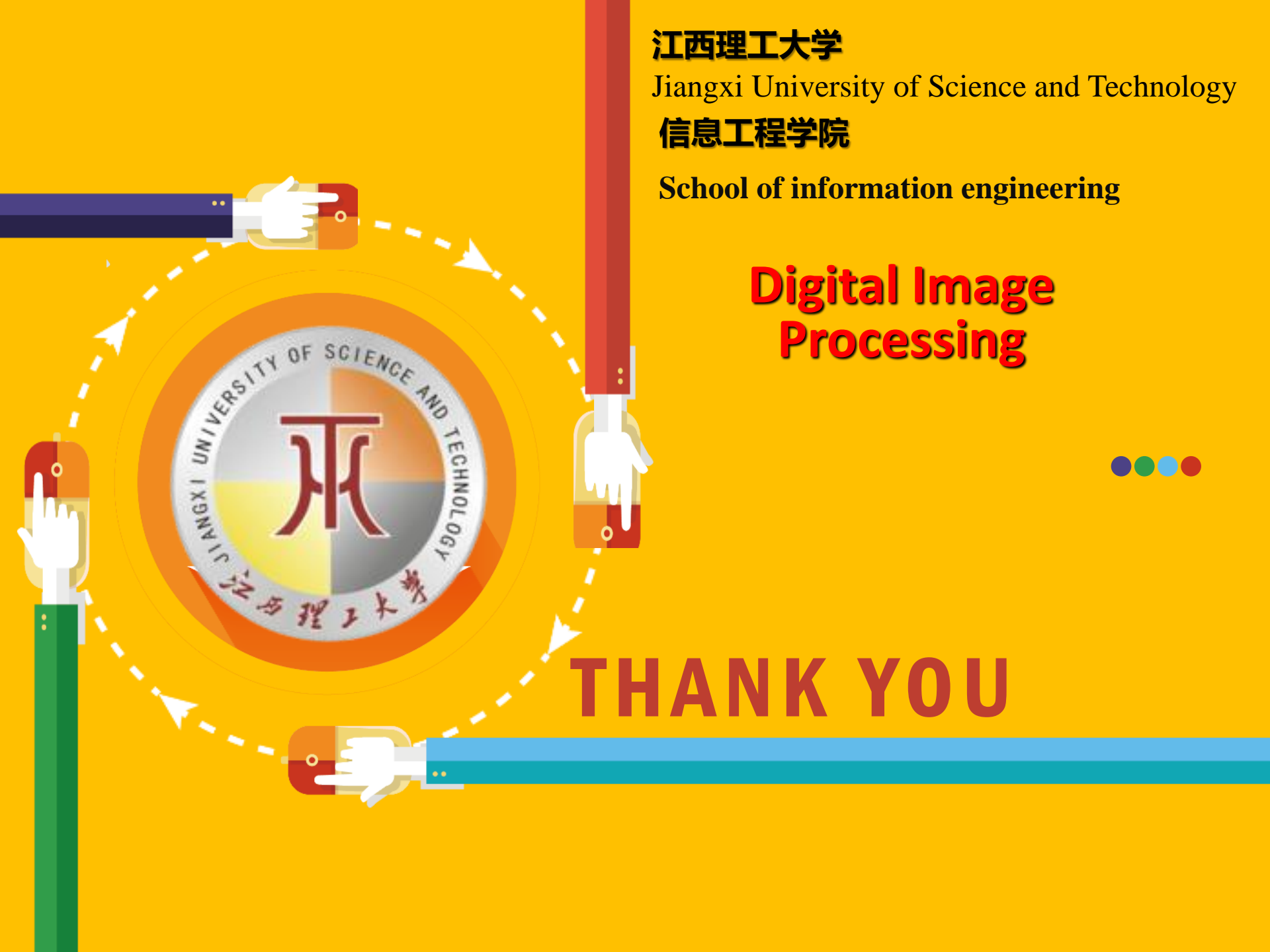
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School of information engineering

Digital Image Processing



THANK YOU





**“BE HUMBLE. BE HUNGRY.
AND ALWAYS BE THE
HARDEST WORKER
IN THE ROOM.”**

