



ĐẠI HỌC BÁCH KHOA HÀ NỘI
HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Nhóm chuyên môn Nhập môn Công nghệ phần mềm

NHẬP MÔN CÔNG NGHỆ PHẦN MỀM

Exercise Guidelines:

Apply the software process in practice



CONTENTS



- 1. Example of web application development**
- 2. Example of mobile application development**

GOALS

By completing this session, learners are able to:

1. Understand how to **apply** a specific software development process
2. Gain insight into the **flexibility** of applying software processes in practice

1. Example of web application development

1.1. Ecommerce website

1.2. Incremental vs. Iterative development models

2. Example of mobile application development

1. Example of web application development

1.1 Ecommerce website

▪ Features:

- Search,
- View product information,
- Shopping cart,
- Payment,
- Wish list,
- Customer's feedback



Each incremental iteration results in the implementation and release of the software product once

1. Example of web application development

1.1 Ecommerce website

- Applying the incremental model
- Can be in 3 cycles

Vòng lặp đầu tiên (1st increment)

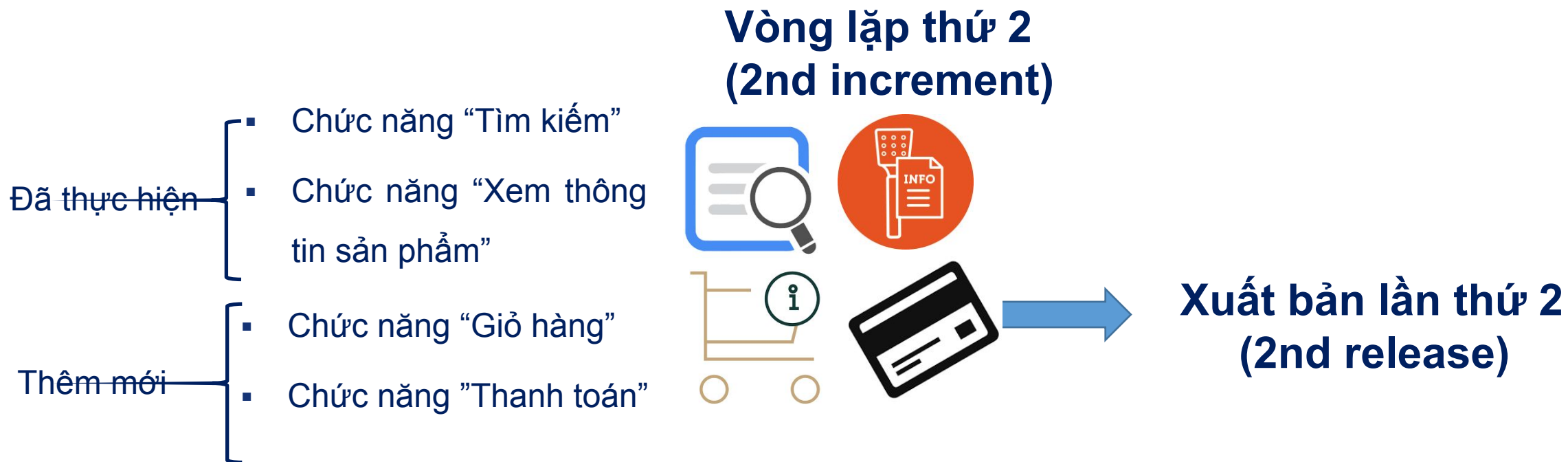
- Chức năng “Tìm kiếm”
- Chức năng “Xem thông tin sản phẩm”



Xuất bản đầu tiên (1st release)

1. Example of web application development

1.1. Ecommerce website



1. Example of web application development

1.1 Ecommerce website



1. Example of web application development

1.1 Incremental vs. Iterative development models

Incremental vs. Iterative

Incremental Development



Iterative Development



Do you see the difference??

CONTENTS



1. Example of web application development

2. Example of mobile application development

2. Example of mobile application development

2.1 Project information

- Example:
 - A web-based banking application has been developed for two user groups: individual users and business users of Bank X.
 - Now, the bank wants to develop a mobile application for individual users. They are applying the modified Waterfall model.
 - Provide at least 3 reasons why the modified Waterfall model is suitable for this case study.

2. Example of mobile application development

2.2 Project analysis

- Application: for both individual and business users
- Objective: to develop a mobile application for individual users

Thus, this mobile application:

1. Functionality: inherits features similar to those on the web platform
2. Requirements: are well understood
3. Separation: clearly separated from the rest of the system

Conclusion: The appropriate model could be the modified Waterfall model.

2. Example of mobile application development



2.3 Recap – Modified Waterfall Model

□ This model is often applied to:

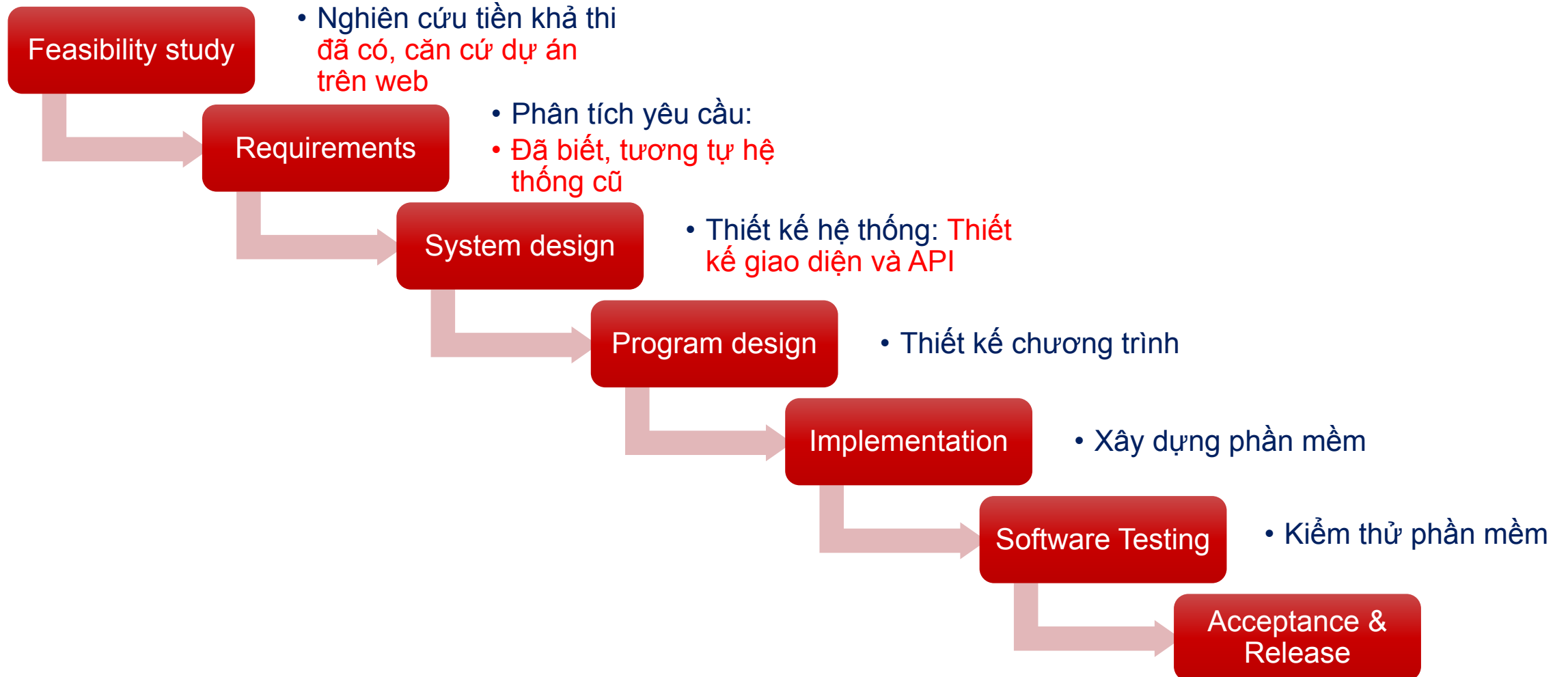
1. The modified waterfall model works best when the requirements are well understood and the design is simple.

Examples:

- Converting a manual data processing system where the requirements are already well understood
 - A new version of a system with functionality similar to the previous product
2. Parts of a large system in which some components have clearly defined requirements and are distinctly separated from the rest of the system

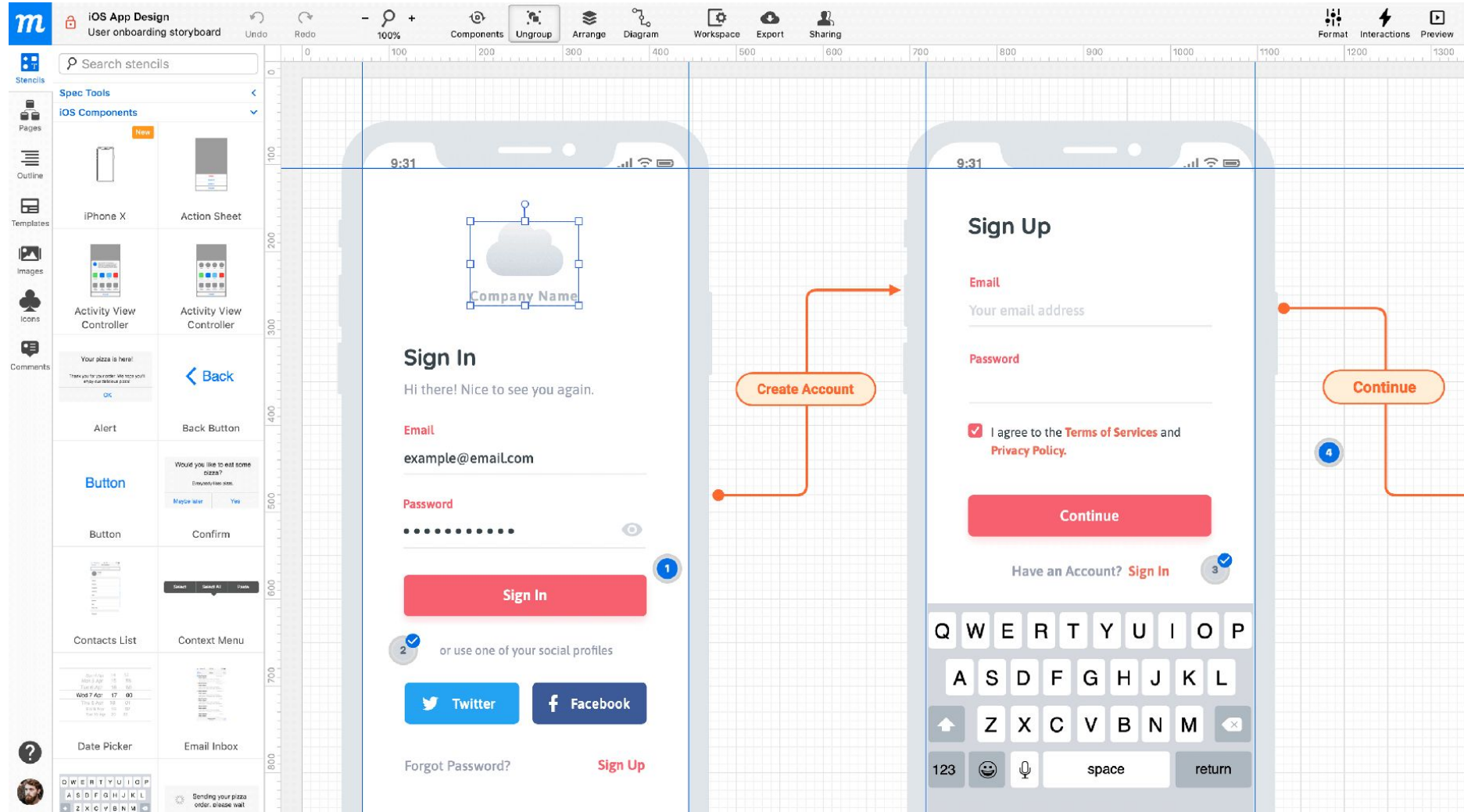
1. GIT VERSION CONTROL SYSTEM

2.4. Proposed steps



1. GIT VERSION CONTROL SYSTEM

2.4. Proposed steps – example of interface design



SUMMARY AND OUTLOOK

1. The lesson has provided learners with some practical examples of applying software processes.
2. Following this lesson, learners can practice and further explore the application of these processes in other examples.

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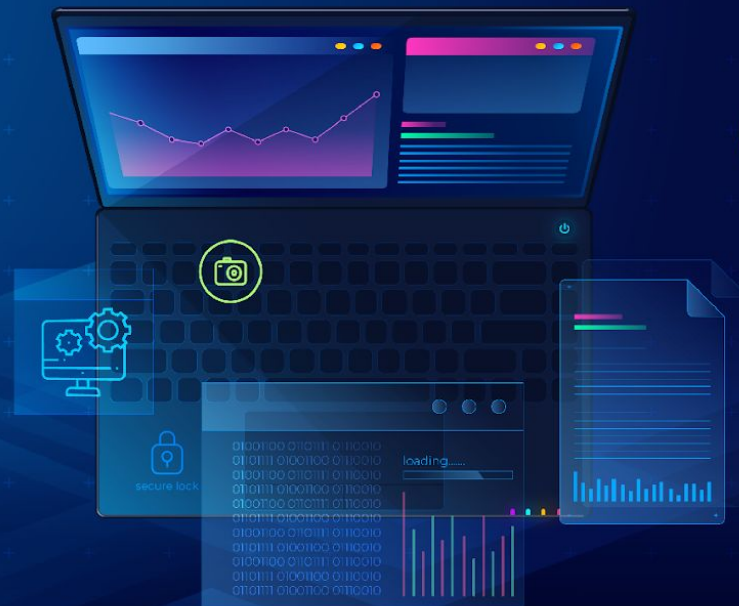
Hướng dẫn bài tập: Ứng dụng quy trình phần mềm trong thực tế

Biên soạn:

TS. Nguyễn Nhất Hải

Trình bày:

TS. Nguyễn Nhất Hải



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Bài học tiếp theo:

Tổng quan về phương pháp Agile

Tài liệu tham khảo:

- [1] R. Pressman, Software Engineering: A Practitioner's Approach. 8th Ed., McGraw-Hill, 2016 và bộ slide đi kèm.
- [2] I. Sommerville, Software Engineering. 10th Ed., AddisonWesley, 2017.
- [3] Pankaj Jalote, An Integrated Approach to Software Engineering, 3rd Ed., Springer.
- [4] Shari Lawrence Pleege, Joanne M. Atlee, Software Engineering theory and practice. 4th Ed., Pearson, 2009