

The Smart Printing Service for students at HCMUT

TN01 - GROUP 05

01



Overview

- | | |
|---------------------------|----|
| ▶ Members | 01 |
| ▶ Overview | 02 |
| ▶ Project Outcomes | 03 |
| ▶ Key Technical Decisions | 04 |
| ▶ Risks and Challenges | 05 |
| ▶ Experiences | 06 |

02



Members

➤ Nguyen Phuc Gia Khiem	2211573
➤ Nguyen Quang Huy	2211235
➤ Nguyen Quang Minh	2212063
➤ Nguyen Tien Khoa	2211632
➤ Nguyen Tran Dang Khoa	2211635



Our Group Roles

Nguyen Quang Huy

Responsibility:

- Front-end developer
- Use-case diagram designer
- Architecture diagram designer
- Sequence diagram designer

Nguyen Quang Minh

Responsibility:

- Front-end developer
- Use-case diagram designer
- Activity diagram designer
- Component diagram designer

Nguyen Tien Khoa

Responsibility:

- Back-end developer
- Use-case diagram designer
- Class diagram designer
- API management designer

Nguyen Phuc Gia Khiem

Responsibility:

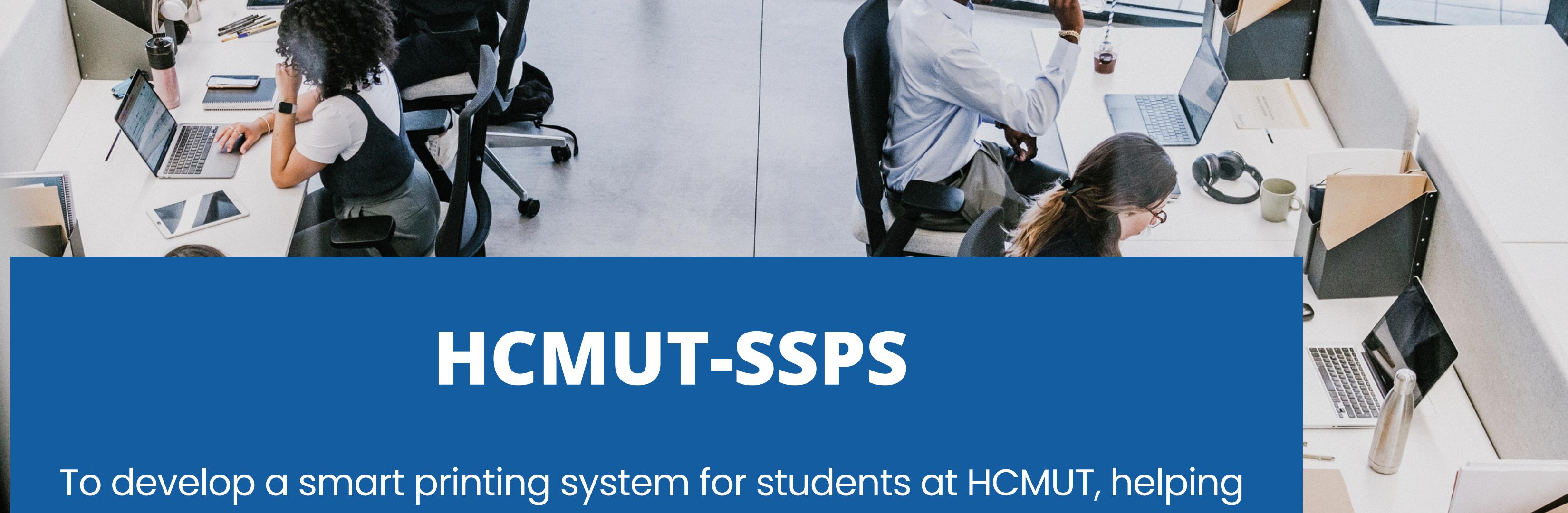
- Back-end developer
- UI/UX designer
- Team leader
- Database designer

Nguyen Tran Dang Khoa

Responsibility:

- Front-end developer
- Use-case diagram designer
- UI/UX designer

OVERVIEW



HCMUT-SSPS

To develop a smart printing system for students at HCMUT, helping them easily print documents at campus printers with features like account management, BKPay payment integration, print history tracking, and printer configuration.

Overview

07

- 
- 01 Waterfall model
 - 02 SQL database system
 - 03 Hybrid architecture

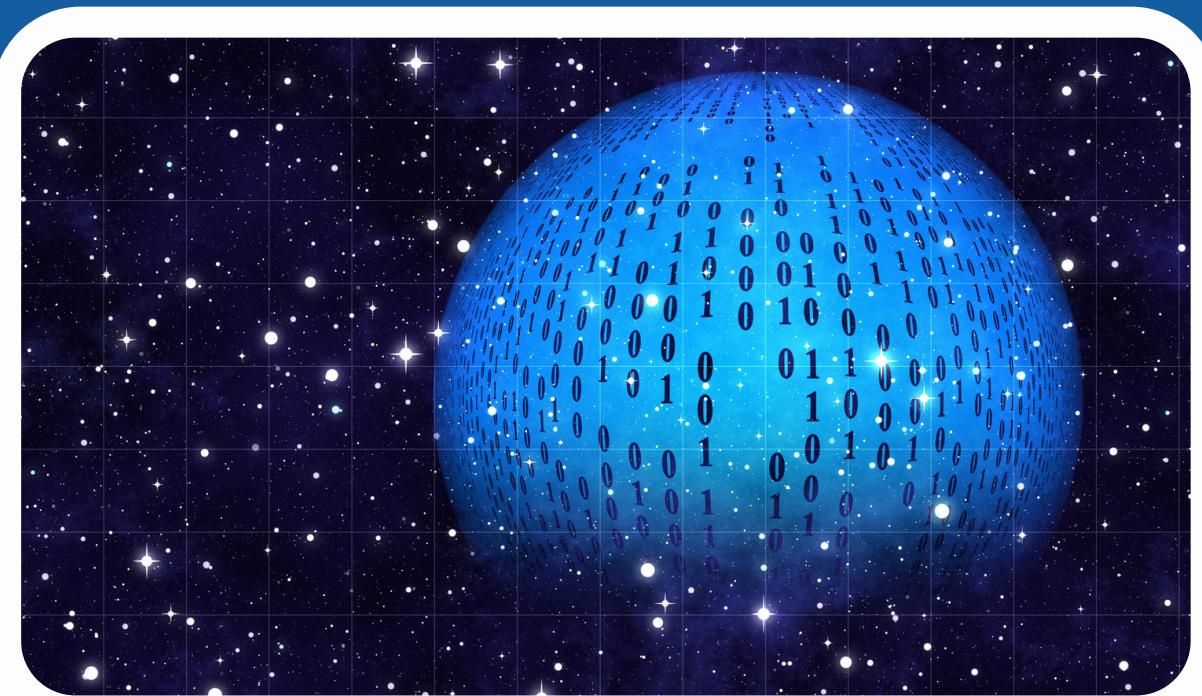
Project Outcomes



User Interface (UX/UI)

A close-up shot of a computer monitor displaying a code editor. The code shown is a Ruby script with syntax highlighting. The script includes require statements for 'spec_helper', 'rspec', 'capybara/rspec', and 'capybara/rails'. It also contains configuration for a JavaScript driver, category deletion, and test framework integration. The code is written in a standard text-based interface with some UI elements visible in the background.

Architectural Decisions



Workflow

UI/UX

MENU



ĐẠI HỌC QUỐC GIA TP. HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC BÁCH KHOA

IN TÀI LIỆU LỊCH SỬ IN MUA TRANG IN

K

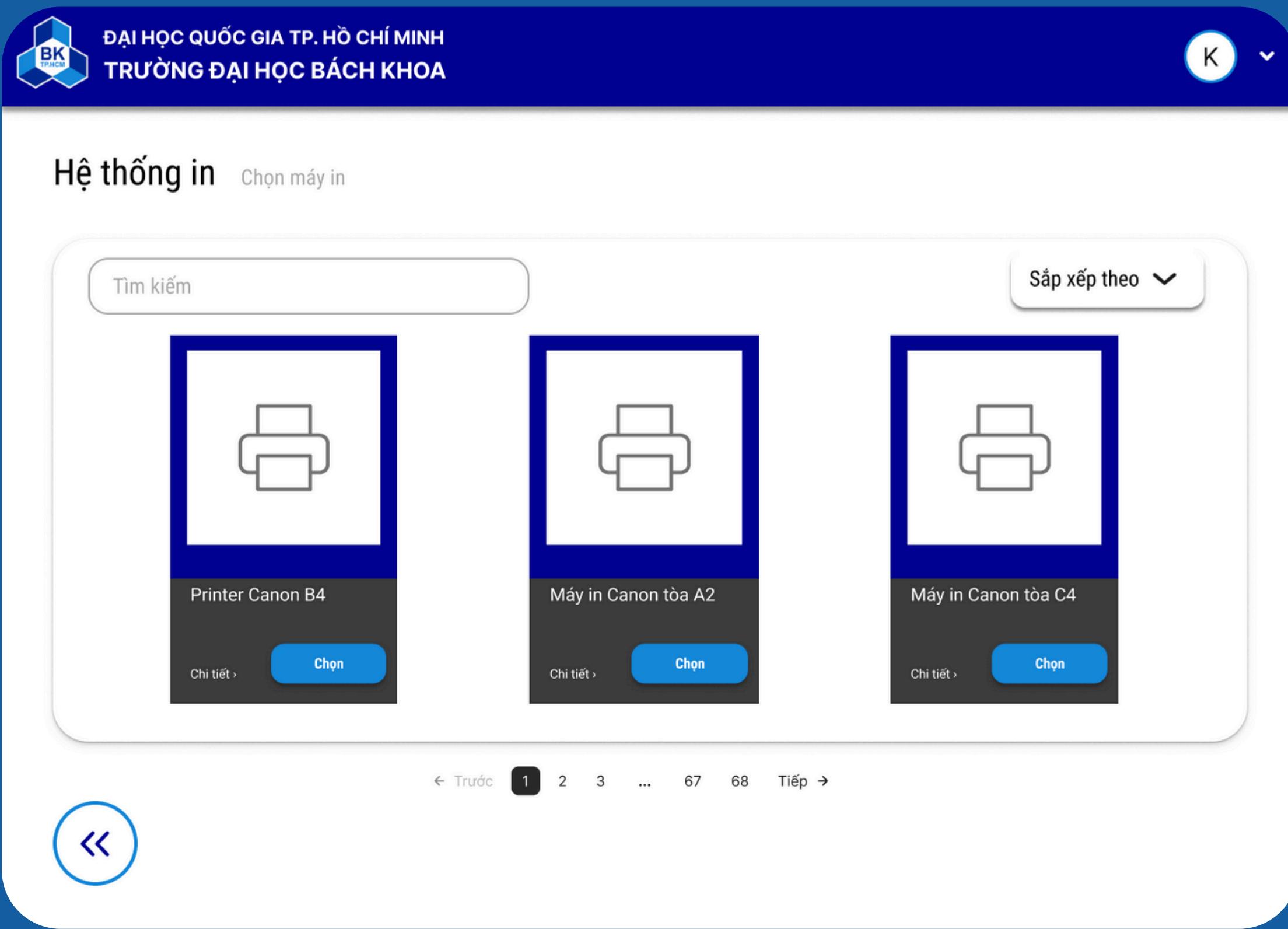
The screenshot shows a user interface for selecting documents to print. At the top, there is a header with the logo of the National University of Ho Chi Minh City (Đại học Quốc gia TP. Hồ Chí Minh) and the Faculty of Technology (TRƯỜNG ĐẠI HỌC BÁCH KHOA). On the right side of the header is a user profile icon with the letter 'K' and a dropdown arrow.

The main area is titled "Hệ thống in" (Printing System) and "CHỌN TÀI LIỆU IN" (Select Document). It features a green button labeled "Tải lên ↑" (Upload ↑). Below this is a search bar with the placeholder "Tìm kiếm" (Search) and a sorting dropdown labeled "Sắp xếp theo" (Sort by).

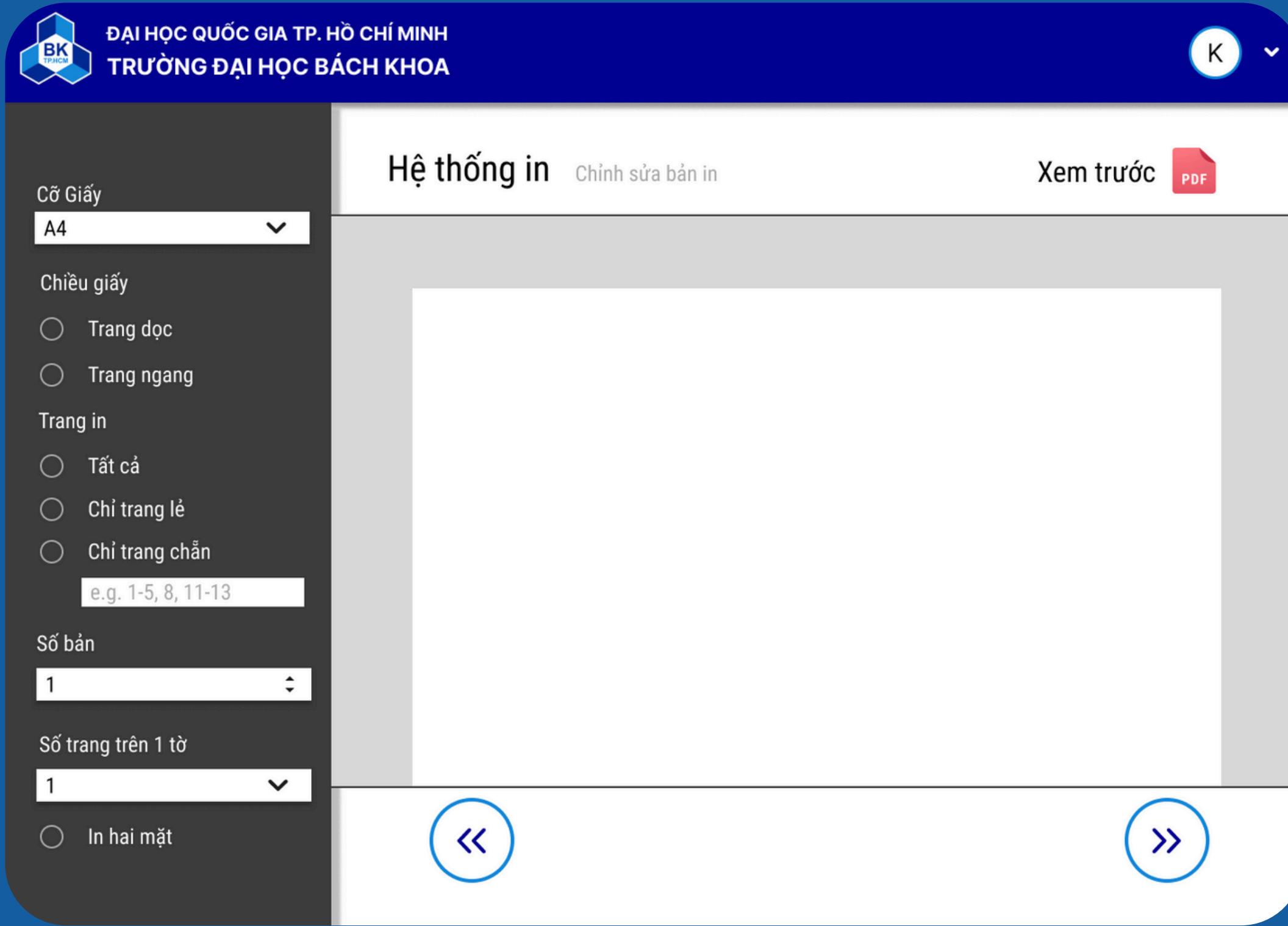
A list of four files is displayed:

File Type	File Name	Last Modified
PDF	File name.pdf	13/10/2024
XLS	File name.xls	13/10/2024
PPT	File name.ppt	13/10/2024
DOC	File name.doc	13/10/2024

At the bottom left of the interface is a circular navigation button with a double-left arrow symbol («).



SETTING PRINTING PROPERTIES



ĐẠI HỌC QUỐC GIA TP. HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC BÁCH KHOA

A2

A3

A4

A5

Letter

Hệ thống in GIAO DỊCH MUA THÊM TRANG IN

Loại giấy: A4 Đơn giá: 300 VND/trang

Số lượng hiện có / Số lượng yêu cầu: 12/40 Còn thiếu: 28 trang

Số lượng (trang):
Số trang

Thành tiền (VND):
Số tiền

VAT (VND): 10%
Số tiền

Hủy Thêm

Giao dịch

The screenshot shows a mobile application interface for a printing system. At the top, there is a dark blue header with the logo of 'ĐẠI HỌC QUỐC GIA TP. HỒ CHÍ MINH TRƯỜNG ĐẠI HỌC BÁCH KHOA' and a user profile icon with the letter 'K'. Below the header, the main title 'Hệ thống in' is displayed, followed by a smaller link 'LỊCH SỬ IN'. The main content area is a list of four files, each with a small icon representing its file type (DOC, PPT, XLS, PDF) and the text 'File name.' followed by the extension. To the right of each file entry is the date '13/10/2024'. At the bottom of the list is a button with a left arrow icon. Above the list, there are two search/filter buttons: 'Tìm kiếm' on the left and 'Sắp xếp theo' with a dropdown arrow on the right.

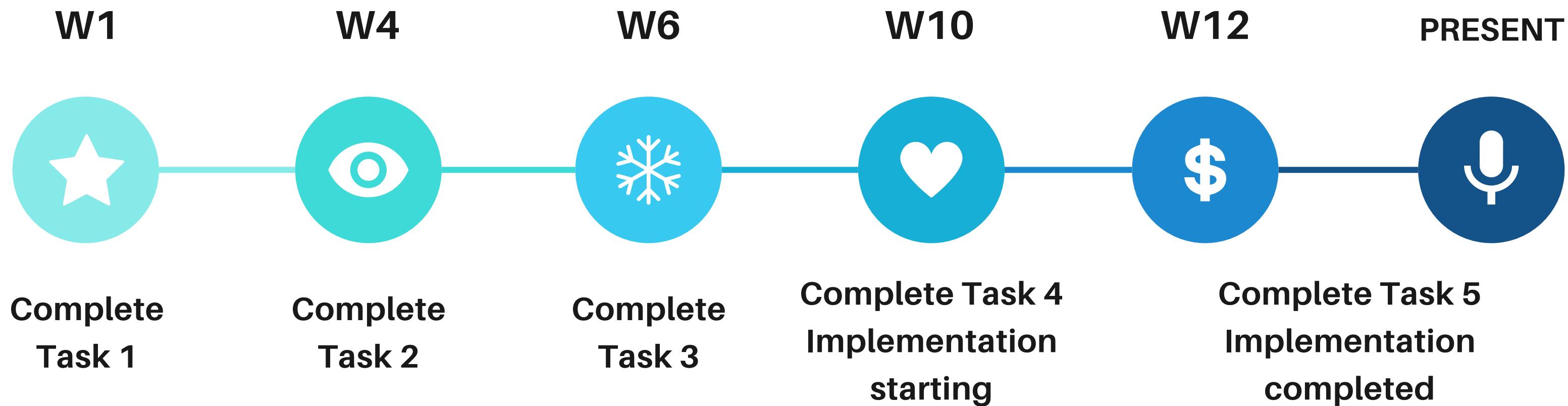
File Type	File Name	Date
DOC	File name.doc	13/10/2024
PPT	File name.ppt	13/10/2024
XLS	File name.xls	13/10/2024
PDF	File name.pdf	13/10/2024

Architectural Decisions

- 
- 01 **Layered pattern**
 - 02 **Client-server pattern**
 - 03 **SQL database system**

TIMELINE

A brief history of a quirky design



KEY TECHNICAL DECISIONS

Key Technical decisions

01

Version control system

02

**Database
management system**

03

**Front-end
development**

04

**Back-end
development**

Version control system

Git-hub

Sharing workspace

Git provides a co-working space for collaborators as a convenient environment for independent development and communication between teammates.

Controlling versions

Git stores the information about the previous versions so that it helps us take the backup if needed as well as manage the branches' safety.



Database management system

SQL - PostgreSQL

01

Clean structure

02

Easy to debug

03

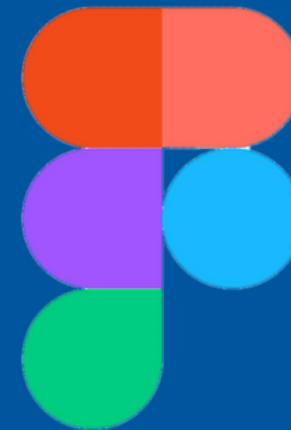
Easy to query

04

Guarantee the scalability

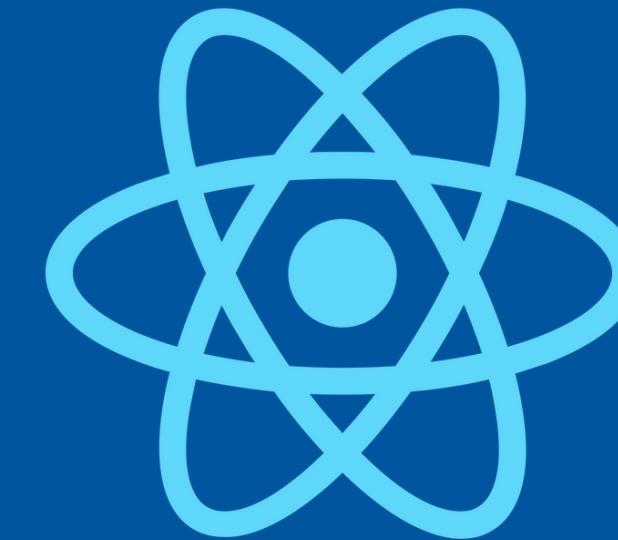
Front-end development

Design



Figma

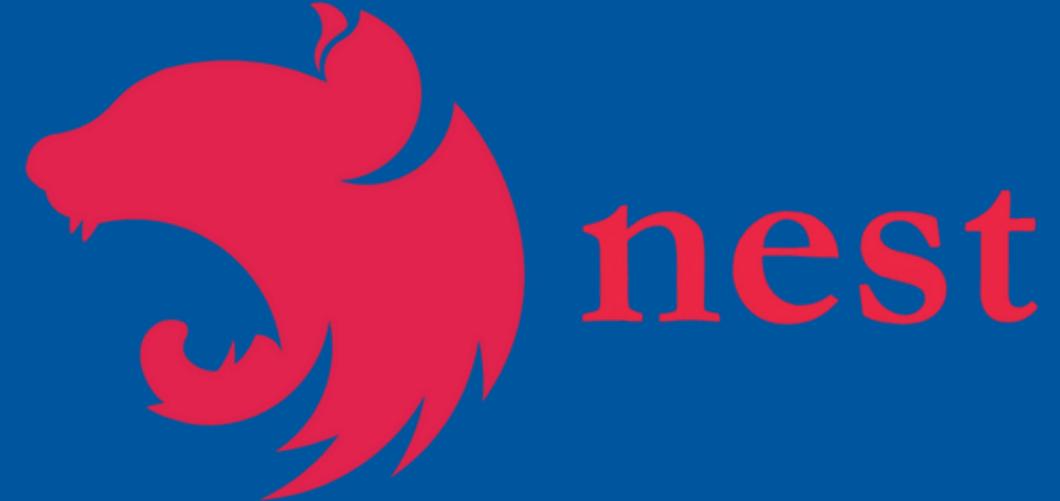
Implementation



React

Back-end development

Implementation



Risks and challenges

Design

- 01 Requirements specification
- 02 Activities of the system
- 03 Database structure
- 04 Layered division

Implement

- 01 Choosing the DBMS
- 02 Choosing frameworks
- 03 Communication
- 04 Testing

Experiences

01

Requirements specification

02

Co-working of the team

03

Time management

THANK YOU!

