

# Functional and Non-functional requirements

## Functional requirements

### - Students:

- + A map of available printers in the system can be seen by all students.
- + Each student has their personal drive space in the system so that they can upload their files.
- + Students are able to choose a printer and specify the printing properties before printing.
- + Each student can see their page balance.
- + Each student can access the BKPay system to pay for extra pages and choose one of the available payment options.
- + Students are able to see their printing history up to one month before.
- + Students are able to cancel during the printing process.

### - SPSO:

- + Is able to know which printer runs out of paper or ink.
- + Is able to add, enable, disable a printer.
- + Is able to manage other configurations of the system.
- + Is able to view the reports of the printing system anytime.
- + Is able to control who accesses the printer.
- + Is able to track the cost of printing to help cost control.

### - IT staff:

- + The system should be well organized and developed.
- + The system should keep detailed logs of any errors.
- + The system should have clear documentation on how it works and how to maintain it.
- + The system must provide mean to contact the system distributor for support.
- + The system must provide tool for update to add more features or to fix bugs.

## Non-Functional requirements

### - Performance:

- + The web-based app and the mobile app takes no more than 5 seconds to load.
- + Response time for each action is less than 1 second.
- + The app must be able to handle multiple print jobs simultaneously at most 5 seconds delay during peak times such as exams.

### - Usability:

- + The system interface will be in English, with the ability to switch to Vietnamese in future versions.
- + All students and staff should be able to operate the system under 1 hour of usage.
- + The app server is able to work well in office hours and recover quickly from any failures.
- + The system should be compatible with a wide range of devices (Phone, PC) and operating systems (MacOS, Window).

### - Security:

- + The system must protect private information of users and prevent unauthorized accesses or invalid actions.

### - Maintainability:

- + The system should go down monthly for maintenance, with the expected downtime being no more than 1 hour.
- + The system should be easy to update and maintain.
- + The system must not change any user data after update.
- + The system must be able to save logs of errors that occur.