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SOFTWARE ENGINEERING (CO3001)

SSPS SOFTWARE REPORT

Task 1.3

GROUP CC03-05

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1 Task descriptions

1.3: Draw a use-case diagram for the whole system. Choose an important module and draw its use-case diagram, as well as describe the use-case using a table format

2 Usecase Diagram for the whole system

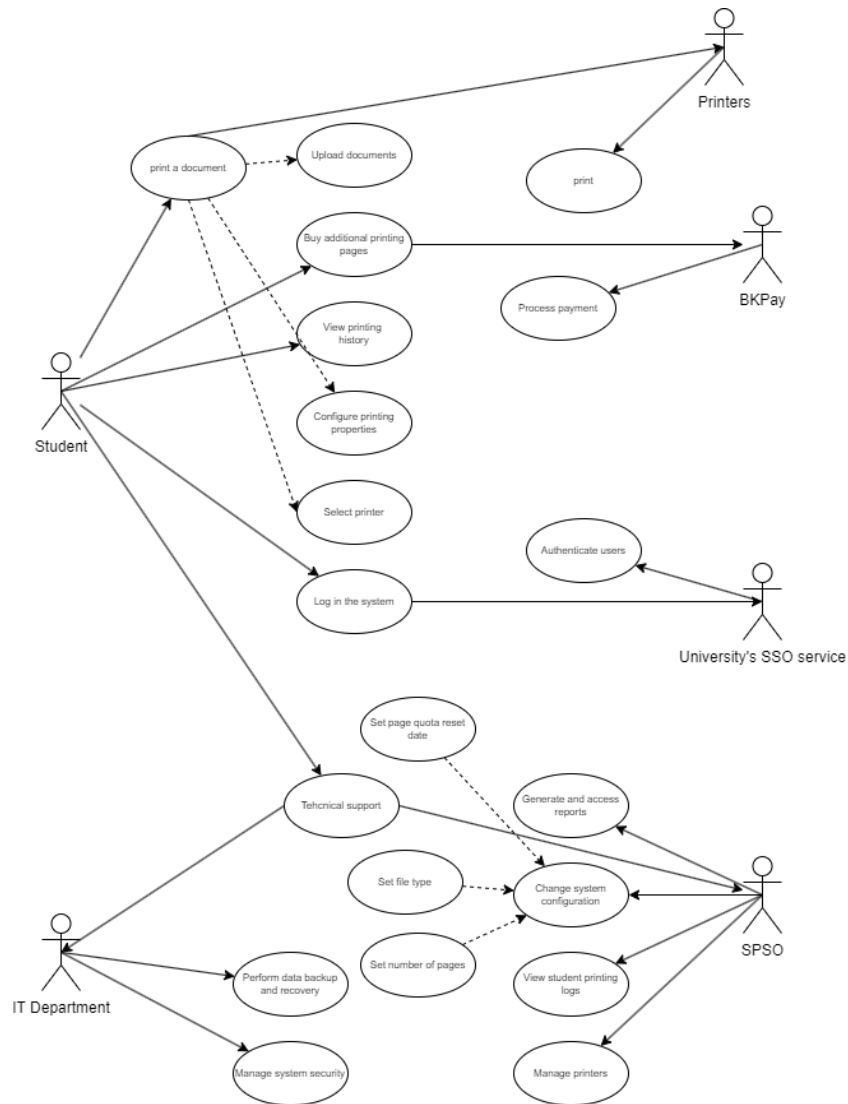


Figure 1: Usecase Diagram for the whole system

3 Printer Management Module

Since the system is centered around the printing service, we'll focus on the module that manages printers and their components for closer examination. For each use case within this module, two detailed description tables will be provided to make the review process easier: one outlining the high-level overview, and the other detailing the flow of the use case, including alternative and exception scenarios.

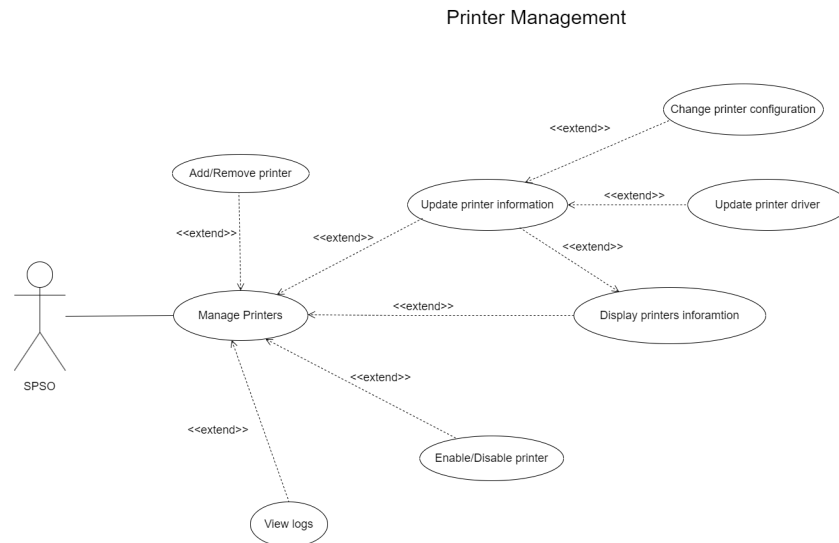


Figure 2: Printer Management Use-case Diagram

3.1 Manage Printers Use Case

ID and Name	UC-1 Manage Printers
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Printer Devices, Printer Driver
Description	The SPSO manages printers in the system by adding or removing printers, updating their information, enabling or disabling them, and viewing logs. This also extends to updating drivers and displaying printer details.
Trigger	SPSO initiates printer management operations.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. System has printer devices available for management. PRE-3. SPSO has sufficient privileges for printer configuration.
Postconditions	POST-1. Printer details are updated in the system. POST-2. Any changes to printer configuration, drivers, or logs are reflected in the system's database.

Table 1: UC-1 Overview: Manage Printers

ID and Name	UC-1 Manage Printers
Normal Flow	1.0 Manage Printers 1. SPSO selects the option to manage printers from the system interface. 2. System displays a list of currently installed printers. 3. SPSO selects the desired action to perform. 4. System executes the selected action and confirms completion.
Alternative Flows	1.1 No Printers Available for Management 1. SPSO accesses the "Manage Printers" feature but no printers are available in the system. 2. System displays a message indicating no printers are available to manage.
Exceptions	1.1.E1 Printer Management Unavailable The system cannot access the printer management module due to connectivity or internal system errors.

Table 2: UC-1 Details: Normal Flow, Alternative Flows, and Exceptions

3.2 Add/Remove Printer Use Case

ID and Name	UC-2 Add/Remove Printer
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Printer Devices
Description	The SPSO adds a new printer to the system or removes an existing one. This process updates the system's printer registry and makes the printer available or unavailable for users.
Trigger	SPSO selects to add or remove a printer from the system.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. Printer device or driver is available or identified for removal. PRE-3. SPSO has the necessary permissions to make printer changes.
Postconditions	POST-1. The system reflects the updated printer list. POST-2. The added printer is available for use, or the removed printer is decommissioned.

Table 3: UC-2 Overview: Add/Remove Printer

ID and Name	UC-2 Add/Remove Printer
Normal Flow	2.0 Add/Remove Printer 1. SPSO selects the option to add or remove a printer. 2. System prompts for printer details for adding, or shows available printers for removal. 3. SPSO enters printer details for adding or selects the printer for removal. 4. System processes the request to add or remove the printer. 5. System updates the printer registry to reflect the changes. 6. System confirms the printer has been successfully added or removed.
Alternative Flows	2.1 Printer Already Exists / Printer Not Found 1. SPSO tries to add a printer that already exists or remove one that is not found in the system. 2. System displays an error message indicating the action cannot be completed.
Exceptions	2.1.E1 Printer Driver Not Available Printer addition fails because the driver is not available or not supported by the system.

Table 4: UC-2 Details: Normal Flow, Alternative Flows, and Exceptions

3.3 View Log Use Case

ID and Name	UC-3 View Logs
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Log System, Printer Devices
Description	The SPSO views logs related to printer management activities, such as error logs, maintenance logs, or operational history.
Trigger	SPSO requests to view the logs of specific printers.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. Logs are available in the system. PRE-3. SPSO has permissions to view printer logs.
Postconditions	POST-1. SPSO retrieves and reviews the logs for the selected printers. POST-2. Any necessary corrective actions are noted or performed based on log entries.

Table 5: UC-3 Overview: View Logs

ID and Name	UC-3 View Logs
Normal Flow	3.0 View Printer Logs 1. SPSO selects the option to view logs. 2. System presents a list of available printer logs. 3. SPSO selects the specific logs to view (e.g., error logs, maintenance logs, etc.). 4. System retrieves and displays the logs to the SPSO.
Alternative Flows	3.1 No Logs Available for Selected Printer 1. SPSO selects a printer for which no logs are available. 2. System displays a message indicating that no logs exist for the selected printer.
Exceptions:	3.1.E1 System Error in Retrieving Logs System is unable to retrieve logs due to a database or connectivity issue, and an error message is displayed.

Table 6: UC-3 Details: Normal Flow, Alternative Flows, and Exceptions

3.4 Enable/Disable Printer Use Case

ID and Name	UC-4 Enable/Disable Printer
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Printer Devices, Printer Network
Description	The SPSO enables or disables a printer in the system. Enabling a printer makes it available for use, while disabling prevents it from being accessed or used by the network.
Trigger	SPSO initiates the action to either enable or disable a printer.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. Printer is available in the system. PRE-3. SPSO has appropriate permissions for printer status changes.
Postconditions	POST-1. The printer's status is updated to enabled or disabled. POST-2. Users can or cannot access the printer based on its updated status.

Table 7: UC-4 Overview: Enable/Disable Printer

ID and Name	4.0 Enable/Disable Printer
Normal Flow	4.0 Enable/Disable Printer 1. SPSO selects the option to enable or disable a printer. 2. System shows the current status of the printer (enabled or disabled). 3. SPSO changes the status to enable or disable. 4. System updates the status of the printer in the registry. 5. System confirms the printer has been successfully enabled or disabled.
Alternative Flows	4.1 Printer Already Enabled/Disabled 1. SPSO attempts to enable an already enabled printer or disable an already disabled printer. 2. System displays a message indicating the printer is already in the selected status.
Exceptions:	4.1.E1 Printer Not Connected SPSO attempts to enable or disable a printer that is not connected, and the system cannot complete the action.

Table 8: UC-4 Details: Normal Flow, Alternative Flows, and Exceptions

3.5 View Log Use Case

ID and Name	UC-5 Update printer information
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Print Management System
Description	The SPSO updates the printer information in the system.
Trigger	The SPSO chooses to update the printer information.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. Printer is available in the system. PRE-3. SPSO has appropriate permissions for printer information changes.
Postconditions	POST-1. The printer information is successfully updated in the system. POST-2. Any user sessions that may be affected by the printer information change are notified of the update.

Table 9: UC-5 Overview: View Log

ID and Name	UC-5 Update printer information
Normal Flow	5.0 Update printer information 1. The SPSO selects the option to update printer information. 2. The system displays a form to enter the updated information. 3. The SPSO enters the new information and submits the request. 4. The system confirms and updates the printer information. 5. The system notifies that the update was successful.
Alternative Flows	5.1 Invalid Printer Details 1. The SPSO submits the updated printer information, but the details provided are invalid (e.g., incorrect specifications). 2. The system validates the input and displays an error message indicating which details are invalid. 3. The SPSO is prompted to correct the invalid details before submitting the update
Exceptions:	5.1.E1 System Error A system error occurs during the update process. The system displays an error message indicating that the update could not be completed due to a system error and advises the SPSO to try again later.

Table 10: UC-5 Details: Normal Flow, Alternative Flows, and Exceptions

3.6 Change Printer Configuration Use Case

ID and Name	UC-6 Change printer configuration
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Print Management System
Description	The SPSO changes the configuration of the printer, such as default settings or advanced options.
Trigger	The SPSO selects to change the printer configuration.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. Printer is available in the system. PRE-3. SPSO has appropriate permissions for printer configuration changes.
Postconditions	POST-1. The printer information is successfully updated in the system. POST-2. Any user sessions that may be affected by the printer information change are notified of the update.

Table 11: UC-6 Overview: Change Printer Configuration

ID and Name	UC-6 Change printer configuration
Normal Flow	6.0 Change printer configuration 1. The SPSO chooses to change the printer configuration. 2. The system displays the available configuration options. 3. The SPSO makes changes and submits the request. 4. The system updates the configuration and confirms success. 5. The system notifies of the successful change.
Alternative Flow	6.1 Configuration Options Unavailable 1. The SPSO tries to change settings that are not available for the selected printer (e.g., unsupported features). 2. The system displays an error message indicating that the selected configuration options are not applicable to this printer. 3. The SPSO is prompted to choose different configuration options that are compatible with the printer.
Exceptions	6.1.E1 System Error The SPSO initiates the configuration change, but a system error occurs. The system displays an error message and an error log is generated for review.

Table 12: UC-6 Details: Normal Flow, Alternative Flows, and Exceptions

3.7 Update Printer Driver Use Case

ID and Name	UC-7 Update printer driver
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Print Management System
Descriptions	The SPSO updates the driver for one or more printers to ensure compatibility and operational efficiency.
Trigger	The SPSO selects to update the printer driver.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. Printer is available in the system. PRE-3. A new driver must be available and compatible with the printer.
Postconditions	POST-1. The printer driver is successfully updated. POST-2. The system validates the compatibility of the new driver with existing printer configurations and functionalities. POST-3. The previous driver version is archived or marked for rollback if needed.

Table 13: UC-7 Overview: Update Printer Driver

ID and Name	UC-7 Update printer driver
Normal Flow	7.0 Update printer driver 1. SPSO selects the option to update the printer driver. 2. SPSO selects the printer for which the driver needs to be updated. 3. SPSO selects the new driver to update. 4. SPSO confirms the update request. 5. The system updates the driver and verifies compatibility. 6. The system notifies the SPSO that the driver has been successfully updated.
Alternative Flow	7.1 Driver Not Compatible 1. SPSO selects a driver that is not compatible with the selected printer. 2. The system displays an error message indicating the driver is incompatible. 3. SPSO selects a valid driver and proceeds then returns to Normal Flow step 4. 4.2 Invalid Driver File 1. SPSO attempts to upload a driver file that is corrupt or invalid. 2. The system displays an error message indicating the file is invalid. 3. SPSO uploads a valid driver file and proceeds then returns to Normal Flow step 4.
Exceptions	7.1.E1 System Error A system error occurs during the driver update process. The system displays an error message and advises the SPSO to try again later or contact support.

Table 14: UC-7 Details: Normal Flow, Alternative Flows, and Exceptions

3.8 Display Printer Information Use Case

ID and Name	UC-8 Display printer information
Created By	
Date Created	[Today's Date]
Primary Actor	SPSO
Secondary Actor	Print Management System
Descriptions	The SPSO views detailed information about printers in the system, including status, configuration, and usage history.
Trigger	The SPSO selects to view printer information.
Preconditions	PRE-1. SPSO is authenticated. PRE-2. Printer is available in the system. PRE-3. The SPSO has sufficient permissions to view printer details.
Postconditions	POST-1. The system successfully displays the selected printer's details.

Table 15: UC-8 Overview: Display Printer Information

ID and Name	UC-8 Display printer information
Normal Flow	8.0 Display printer information 1. SPSO selects the option to display printer information. 2. SPSO selects a printer from the list. 3. System displays the printer information.
Alternative Flow	8.1 Printer Not Found 1. SPSO selects a printer that is no longer available or registered in the system. 2. System displays an error message indicating that the printer is not found.
Exceptions	8.1.E1 System Error A system error occurs while retrieving printer information. System displays an error message.

Table 16: UC-8 Details: Normal Flow, Alternative Flows, and Exceptions