Assignment 4

Software Analysis & Design

FOR

University Department Information System

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1. Introduction

1.1 Purpose

This Software Analysis & Design document is intended to describe the working and design of the University Department Information System (UDIS) through the means of UML(Unified Modeling Language) diagrams.

1.2 Scope

- The UDIS software is meant to manage the information database of a university department.
- It allows the user to store, modify and display the student and course lists, inventory, research information, publication details, and cashbook of a department.
- This software is intended to be used by the department secretary alone.

1.3 Document Convention

This section lists the conventions used in this document.

Initial node : 

Activity : 

Control Flow : 

Decision Node : 

Activity Final node : 

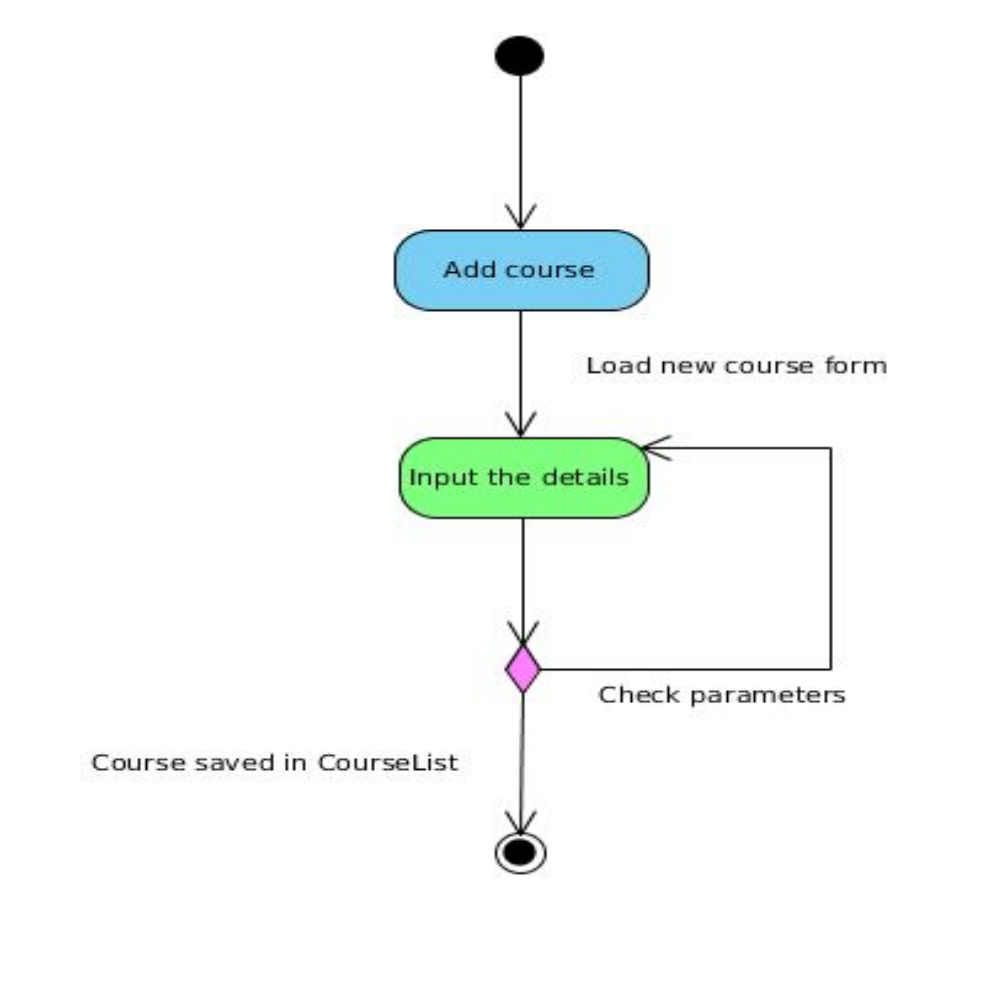
User : 

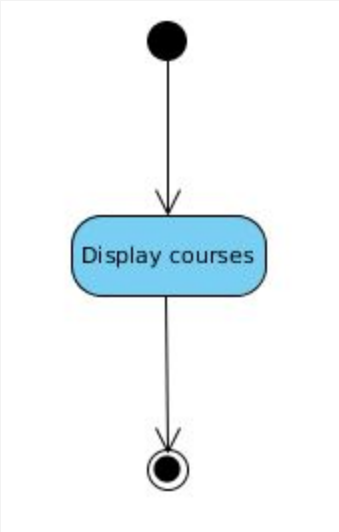
1.3 Glossary

Term	Definition
UDIS	Abbreviation for University Department Information System
Course	A series of lectures in a particular subject leading to examination and/or qualification.
Student	A person who pursues one or more courses in the department.
Grade	A particular level of quality, level or value a student receives for a particular course.
Inventory	A list of property or goods.
Item	An individual article or unit , which is a member of the inventory.
Transaction	An instance of spending/receiving money , extending to details of research work ongoing in the department.
Database	A structured set of data which may be accessible in many ways.

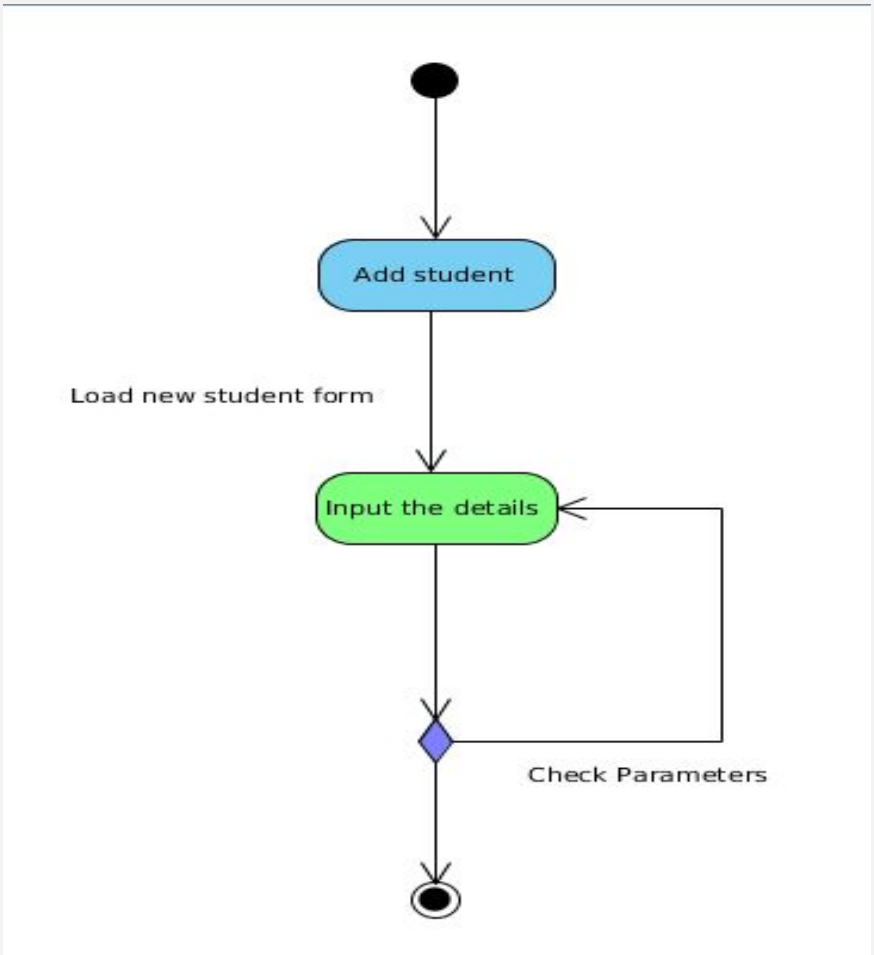
2. Activity Diagrams

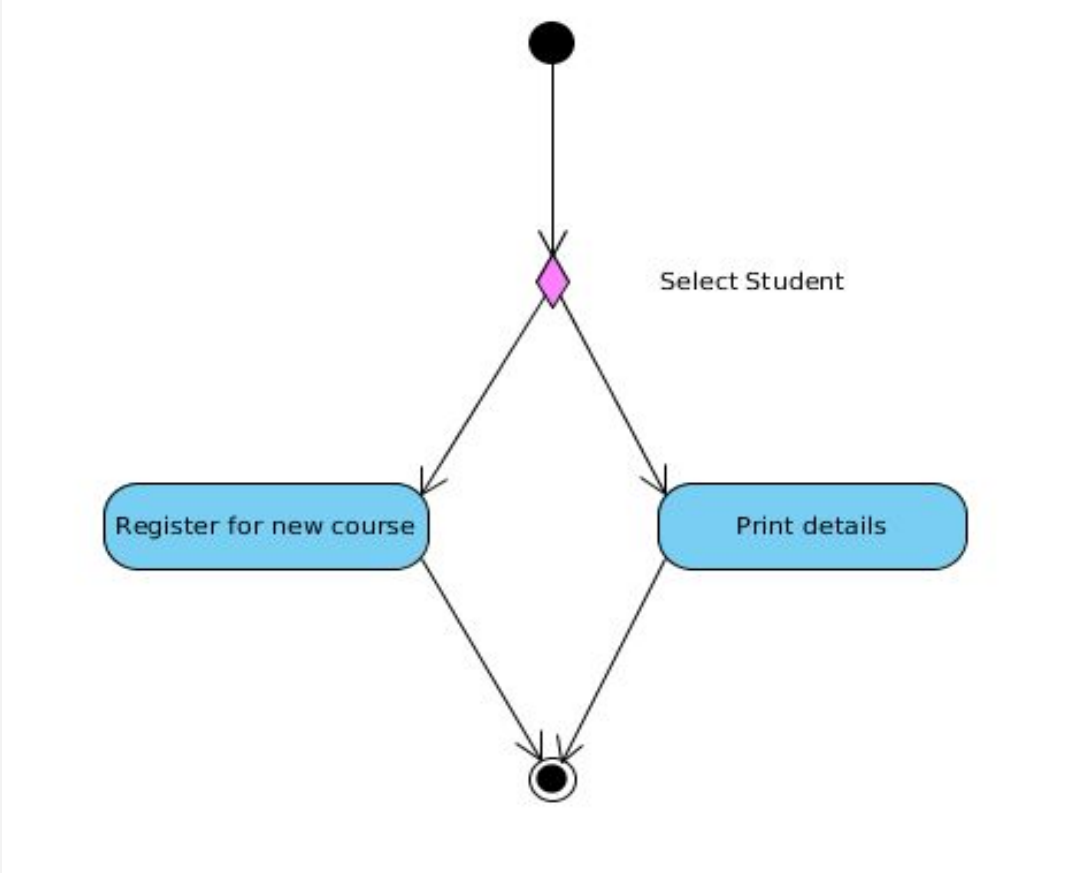
2.1 Add course & view course



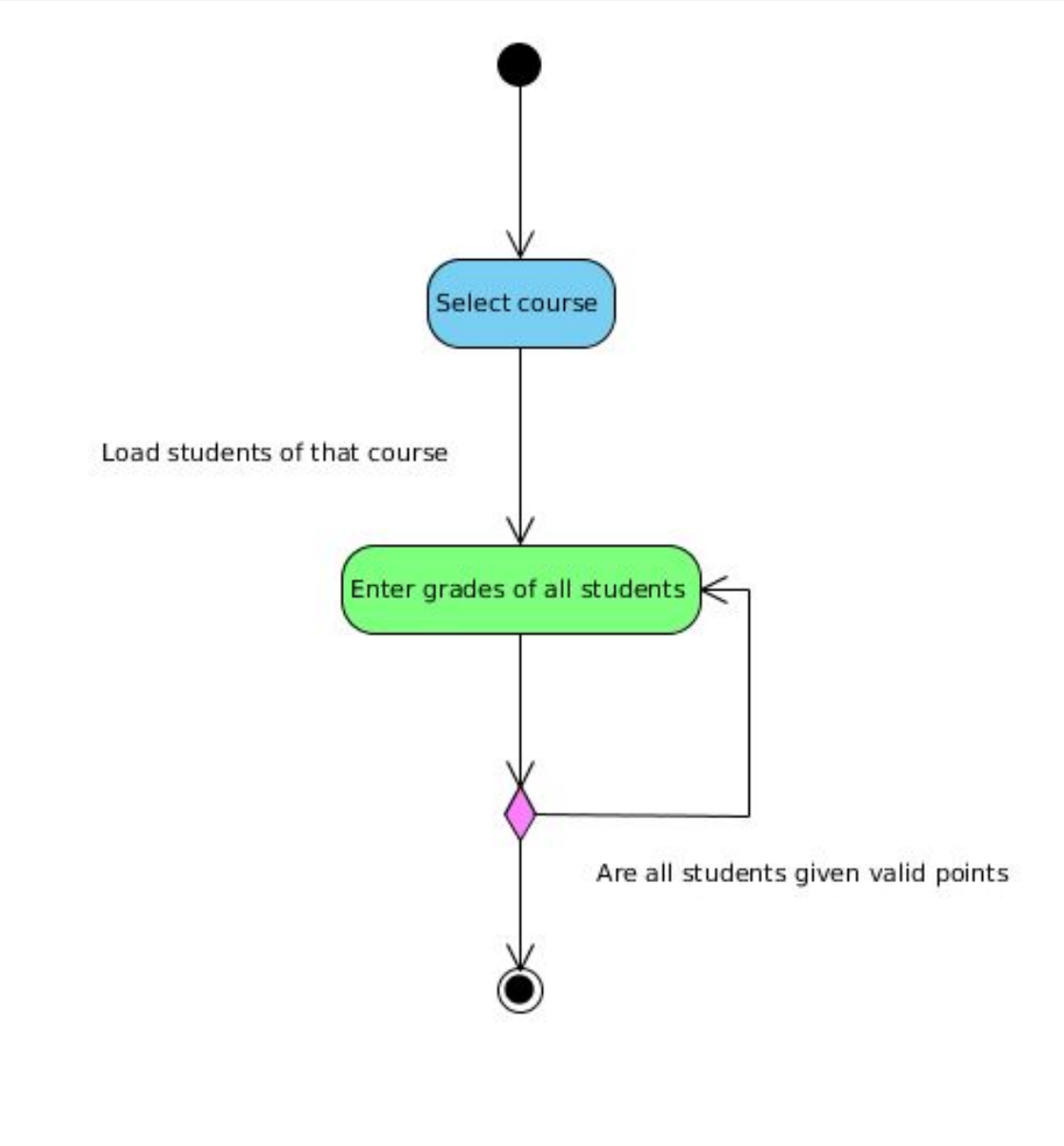


2.2 Enroll new student & view student

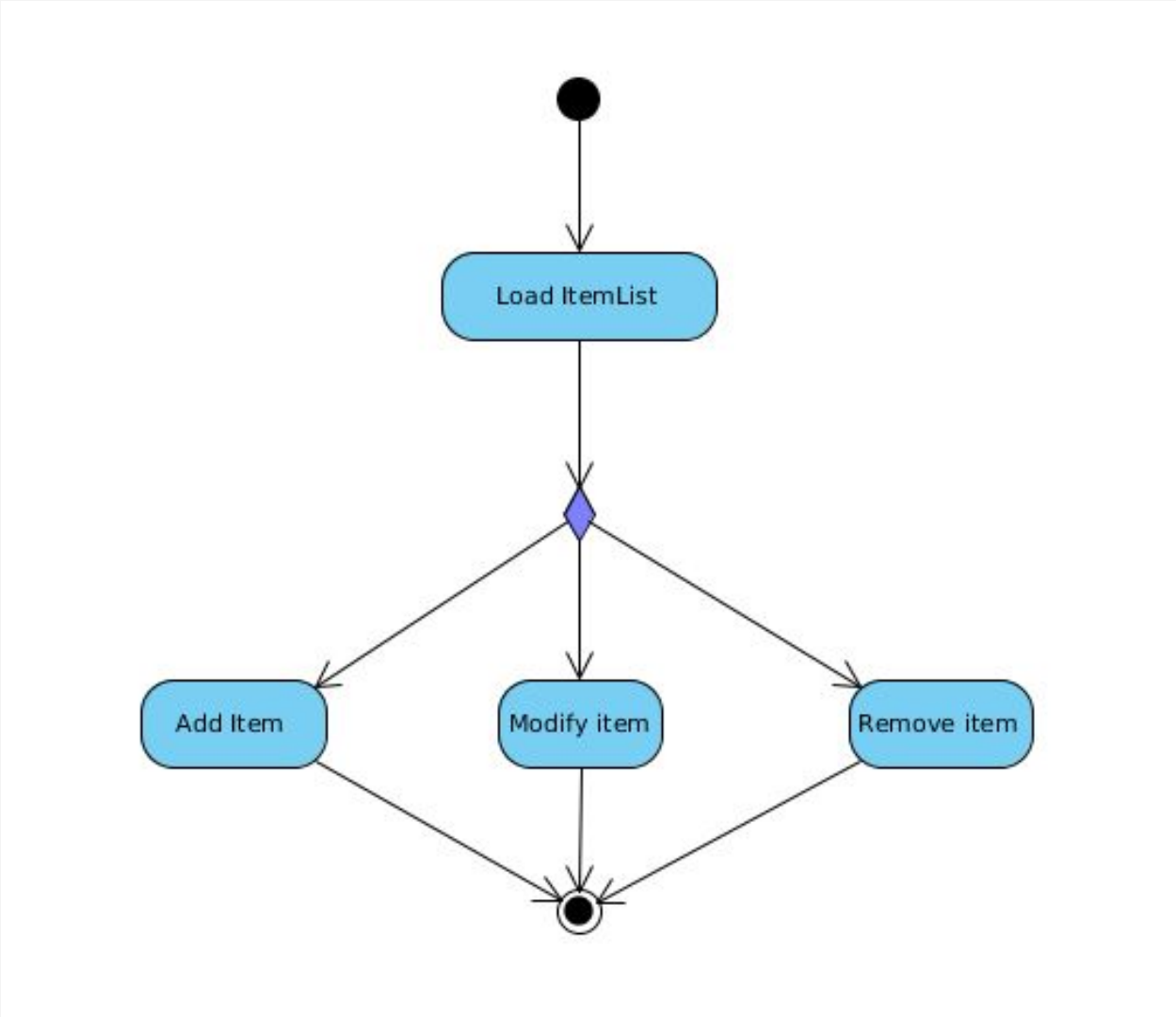



Select Student
Register for new course
Print details

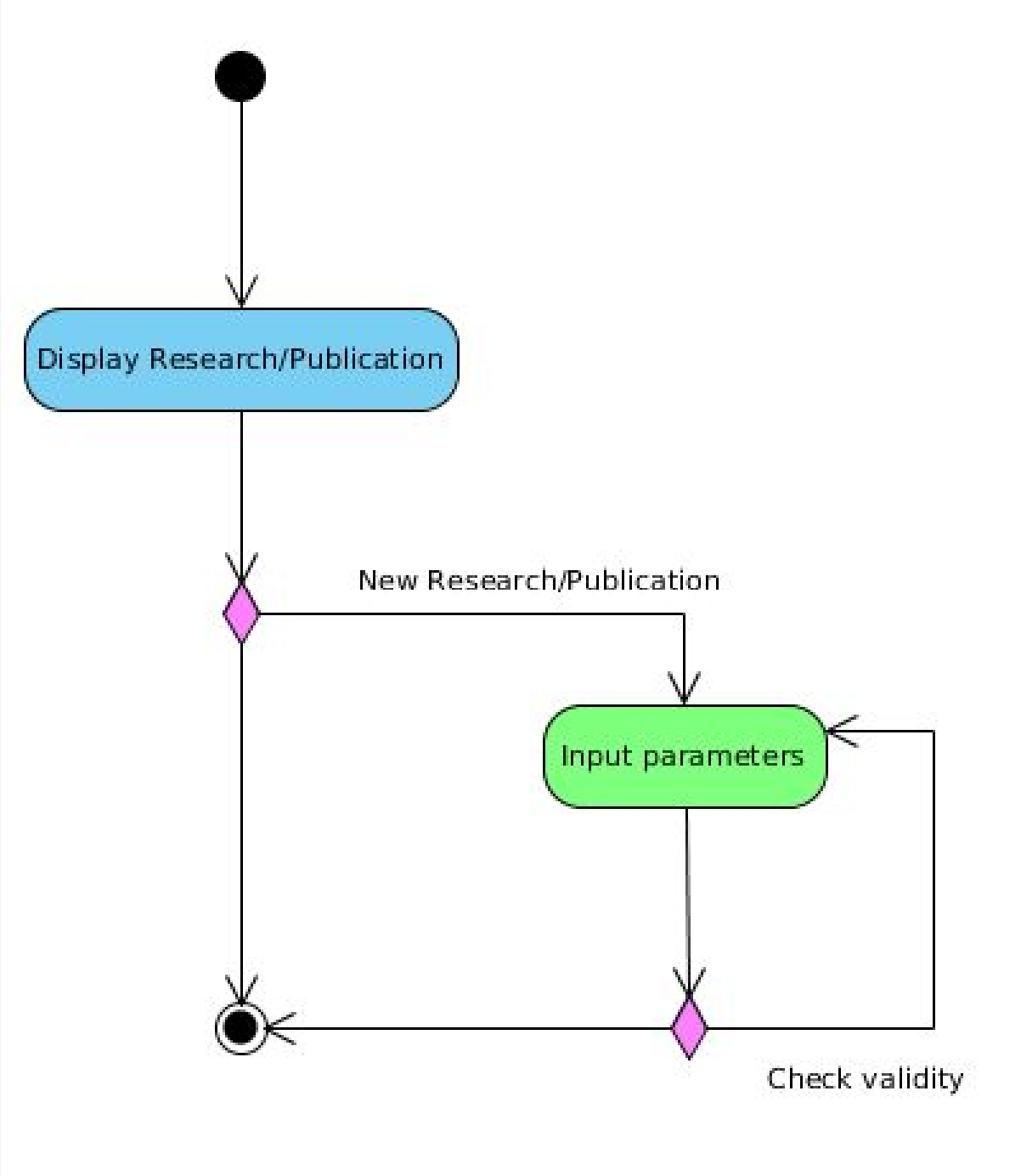
2.3 Evaluate students for a course



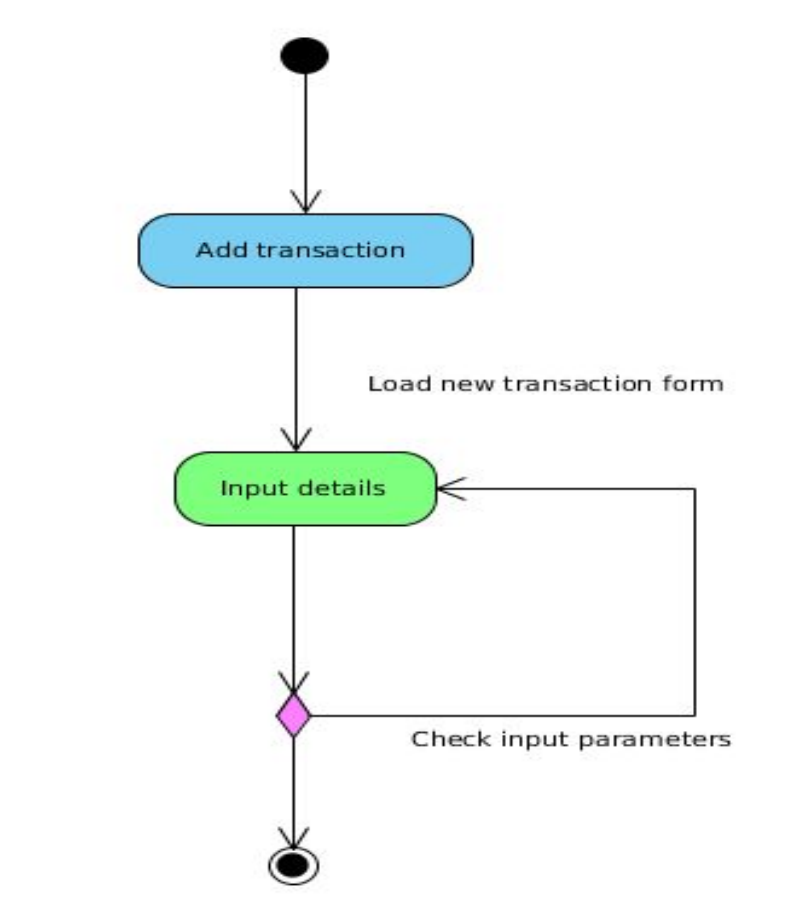
2.4 View Inventory

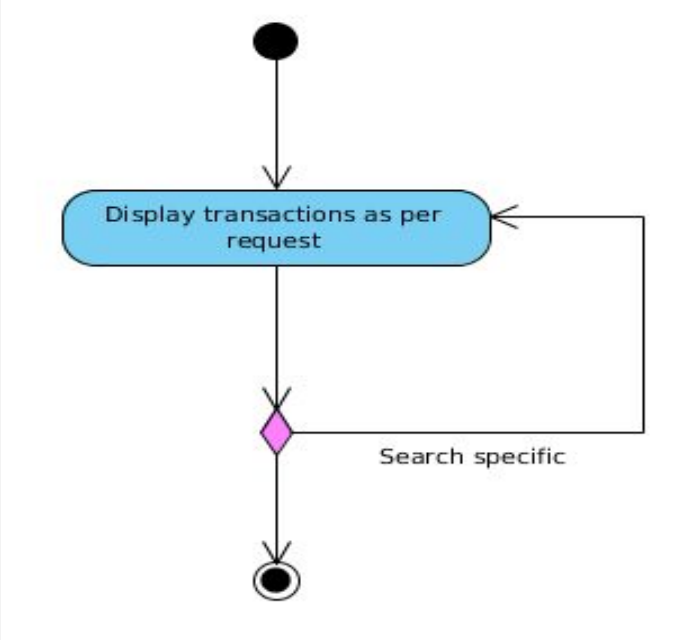


2.5 View Research/Publication



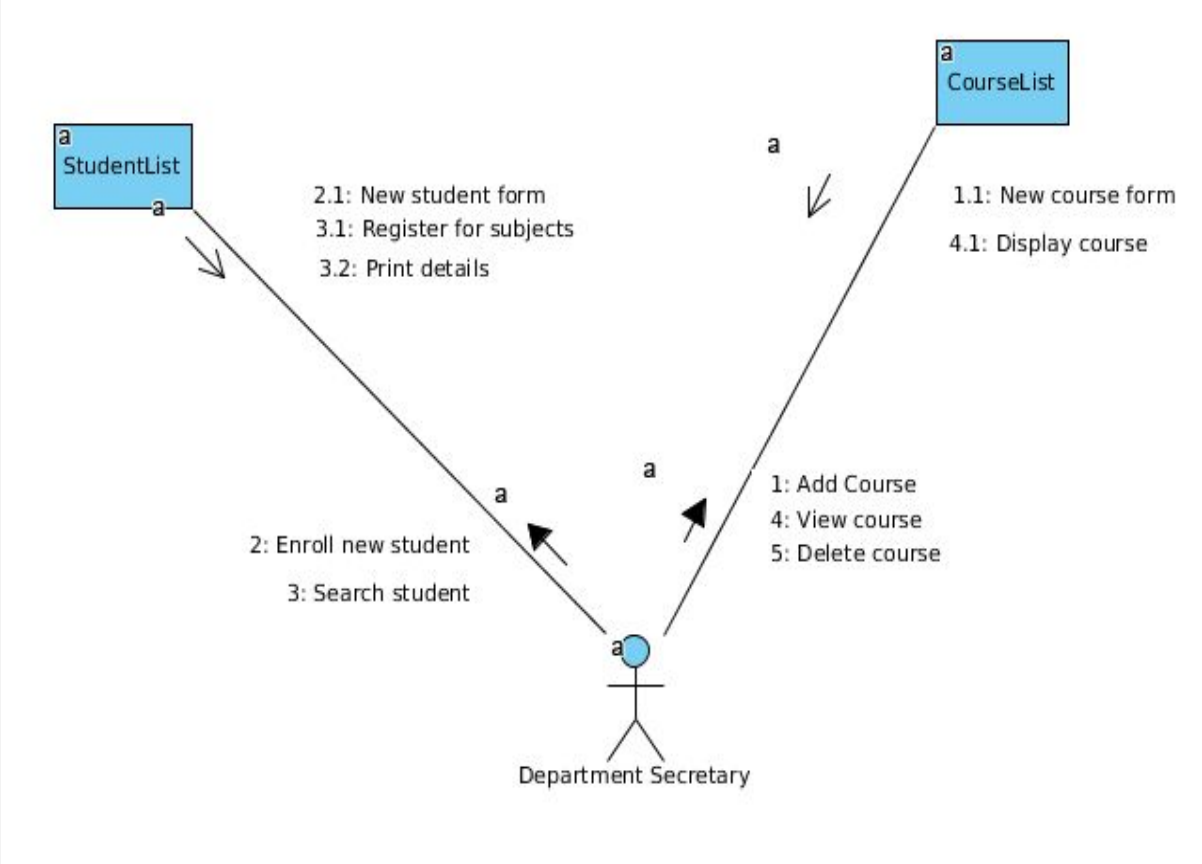
2.6 Add transaction & View transactions



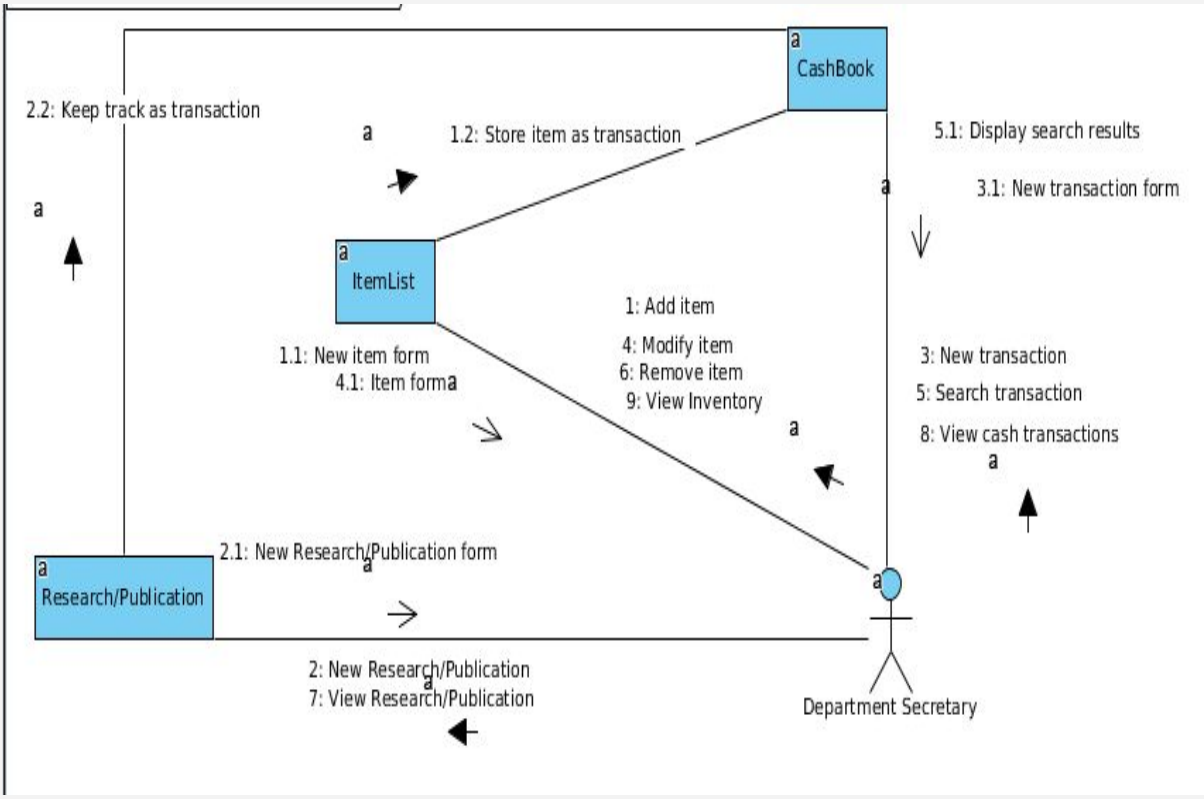


3.Communication Diagrams

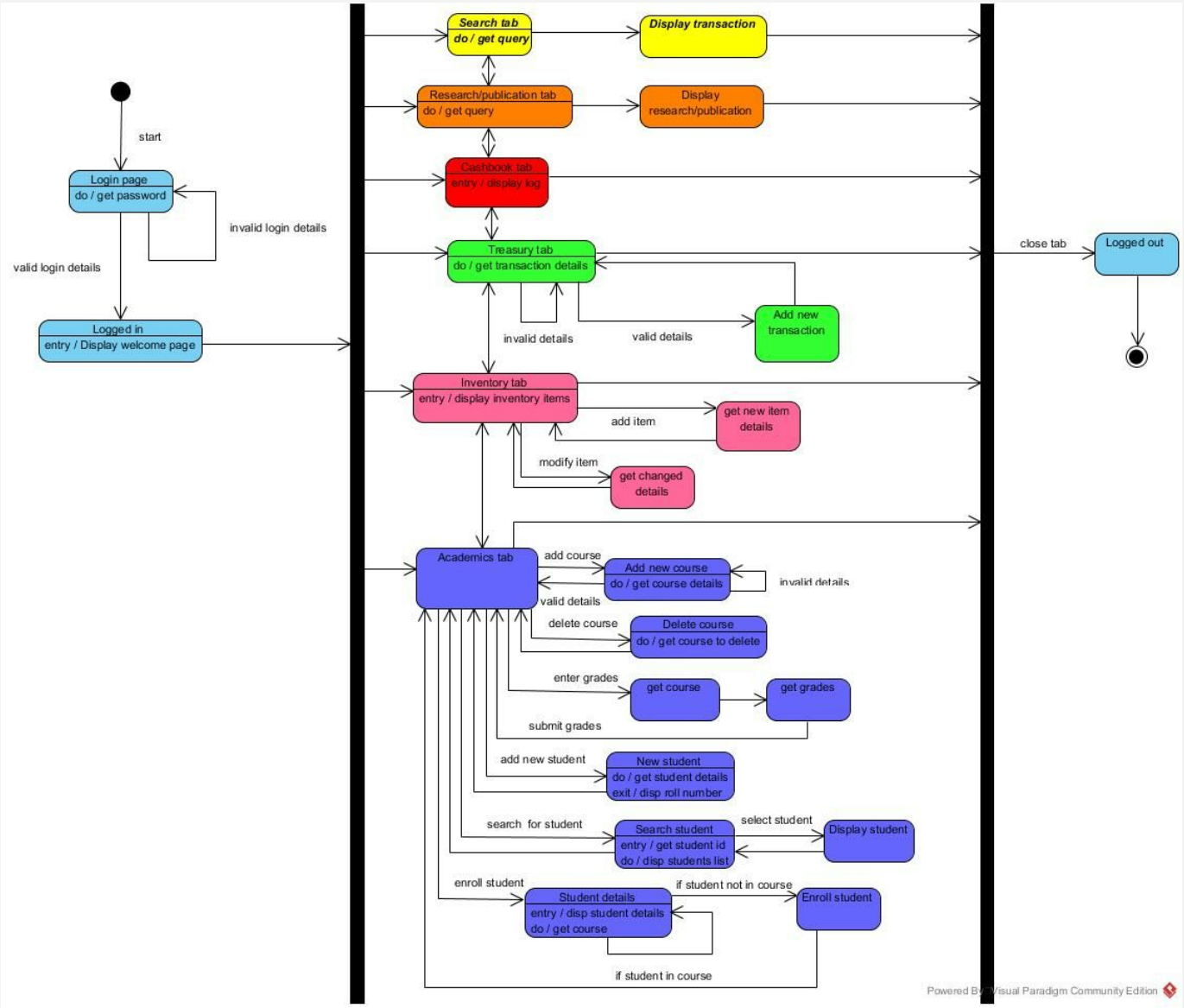
3.1 Academics



3.2 Finance and Research



4.State chart Diagram



5. System Specifications

5.1 System Requirements

- The software is designed to run on Windows platform directly by clicking on the jar file . For using in Linux , it will first have to be marked as executable using the command : chmod u+x UDIS.jar after changing the directory in the terminal.

- Java JRE(Java Runtime Environment) version 7 or later (preferably 8) must be set up in the system in which the software is wished to be run.

5.2 Platform choice

- The software has been developed keeping Windows as the primary OS to serve in mind , as it is the most popular choice . As described above , it may also be used in Linux . However , if that method fails , the user may have to run the project through a Java IDE like Eclipse or Netbeans.
- The language chosen for development is Java , mainly because of two reasons :
    - ❏ It is one of the most popular language for UI development.
    - ❏ Since javascript will be used if online storage is made available , there will not be major code reforms due to the similarities in java and javascript.

- This particular software will be developed using Netbeans8_1

5.3 Limitations/Future Scope

- The current software stores database in the form of a file on the local system on which it is run . A future implementation would be to facilitate the storage of online database using MySQL/SQLite for this process.

- The current system supports storage/logs for only one department . A platform where multiple department secretaries are able to save their individual logs would be much handy.

- The current software allows access to only one user . It would be better if students were able to access this software in order to enroll themselves , view their grades , etc similar to the ERP system of IIT Kharagpur.

- The login screen demands password and provides no way to reset the password . If online storage is used , a new password could be generated by sending a mail to the stored e-mail of the secretary . Also , protection could be extended to not only password , but finger recognition or face recognition , but this is beyond the scope of the current usage.