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

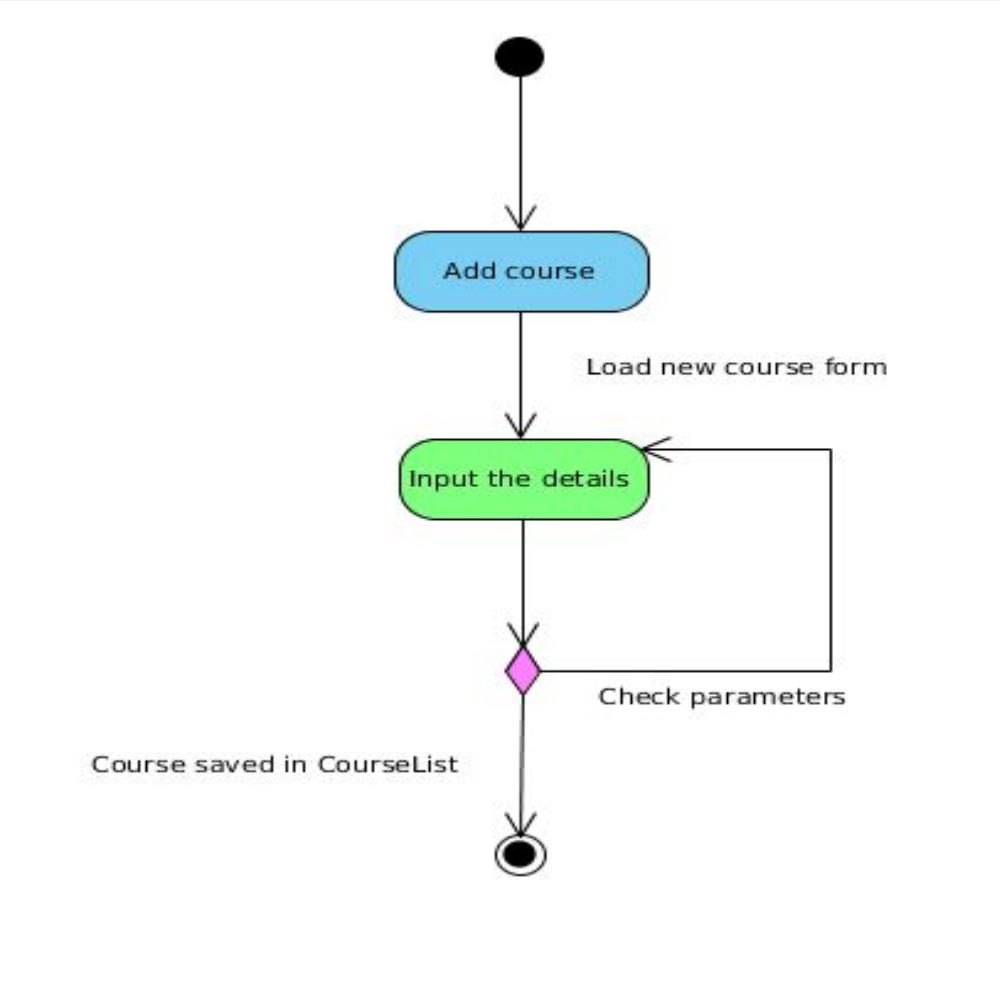
- The UDIS software is meant to manage the information database of a university department.
- It allows the user to store, modify and display the student and course lists, inventory, research information, publication details, and cashbook of a department.
- This software is intended to be used by the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

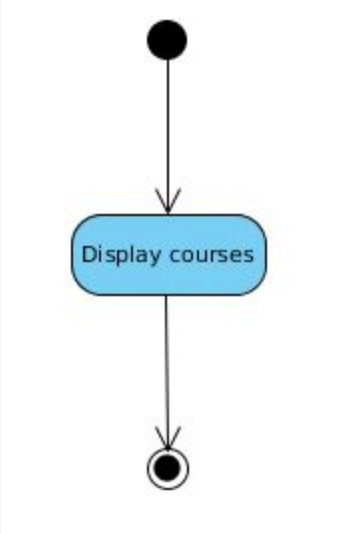
## 1.3 Glossary

| 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 recieves 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. |

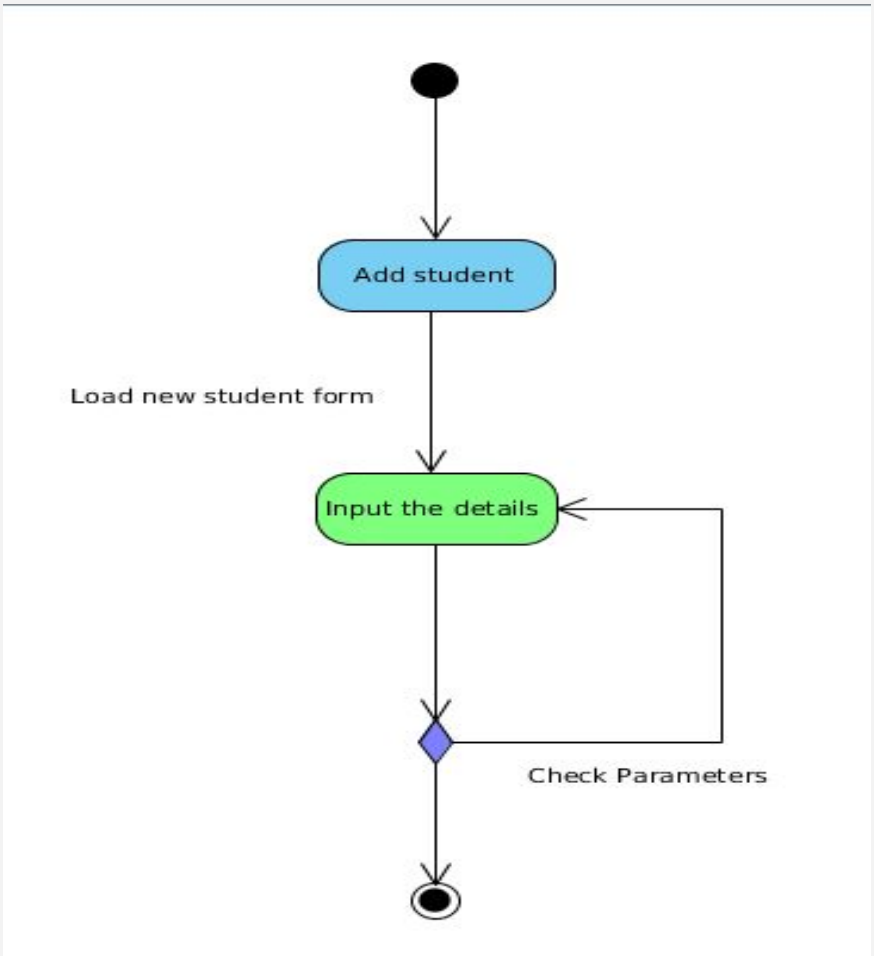
# 2. Activity Diagrams

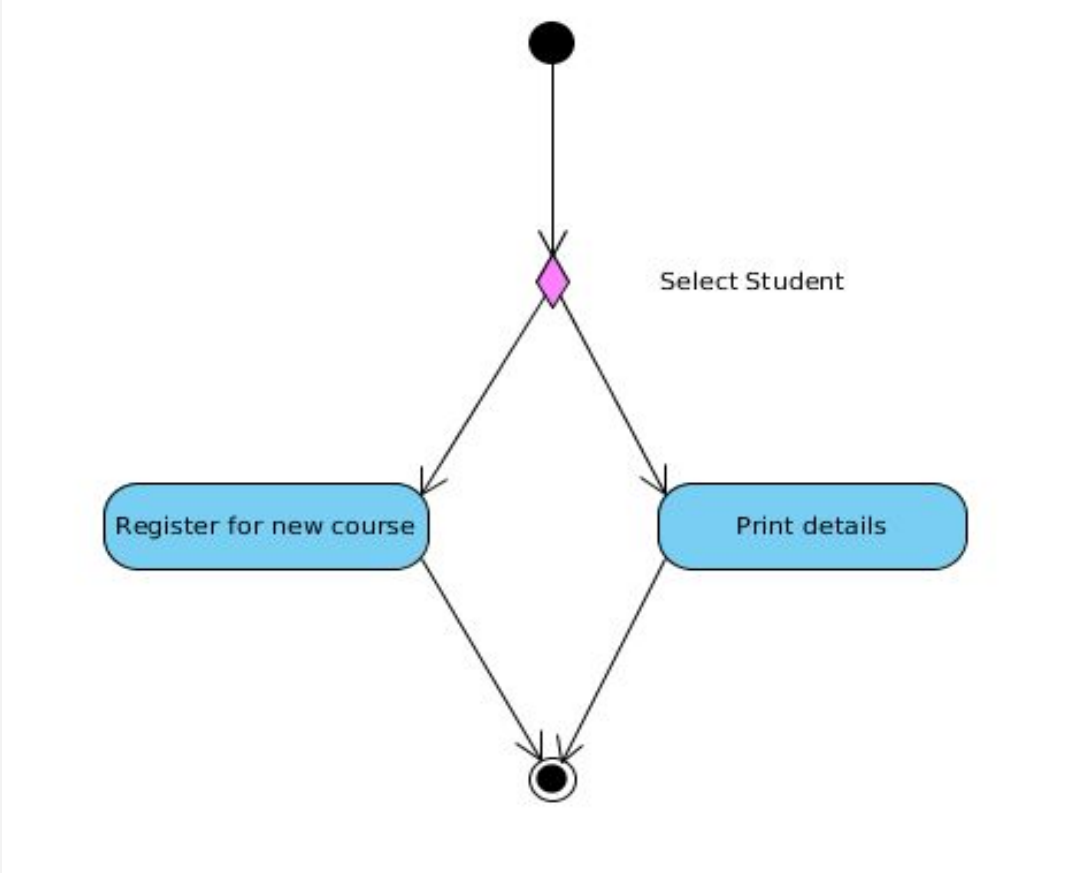
## 2.1 Add course & view course



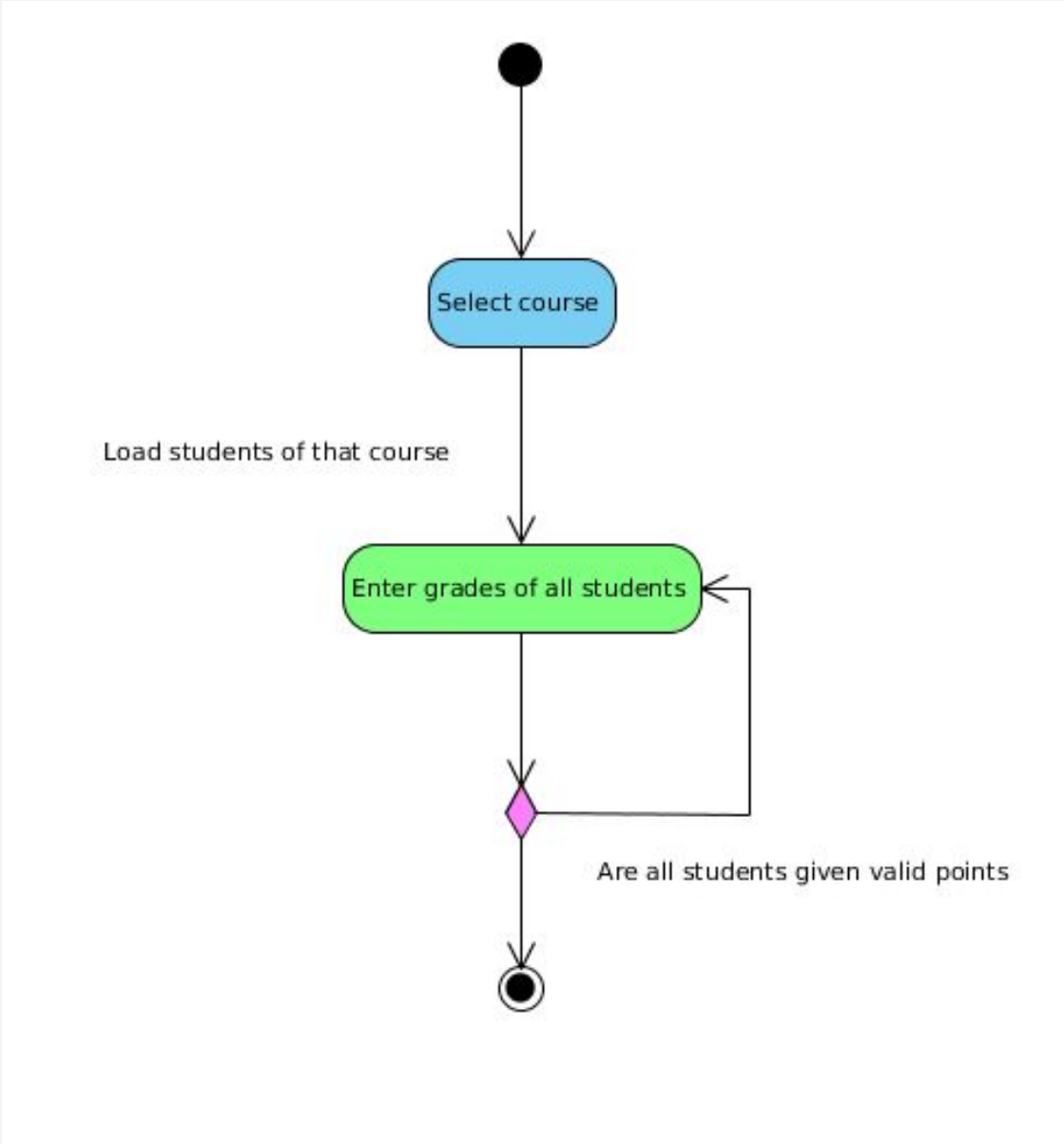



## 2.2 Enroll new student & view student

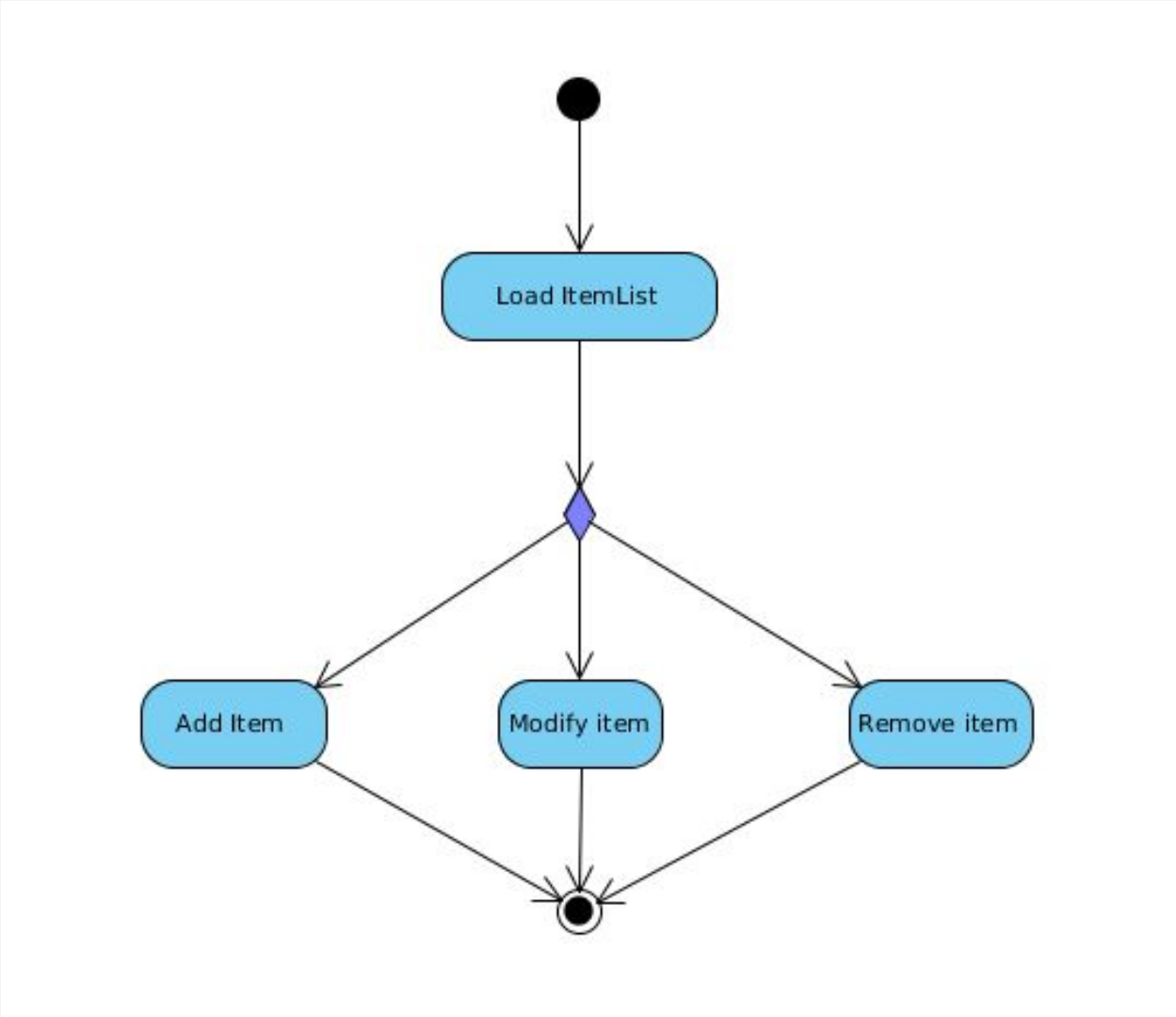



Select Student
Register for new course
Print details

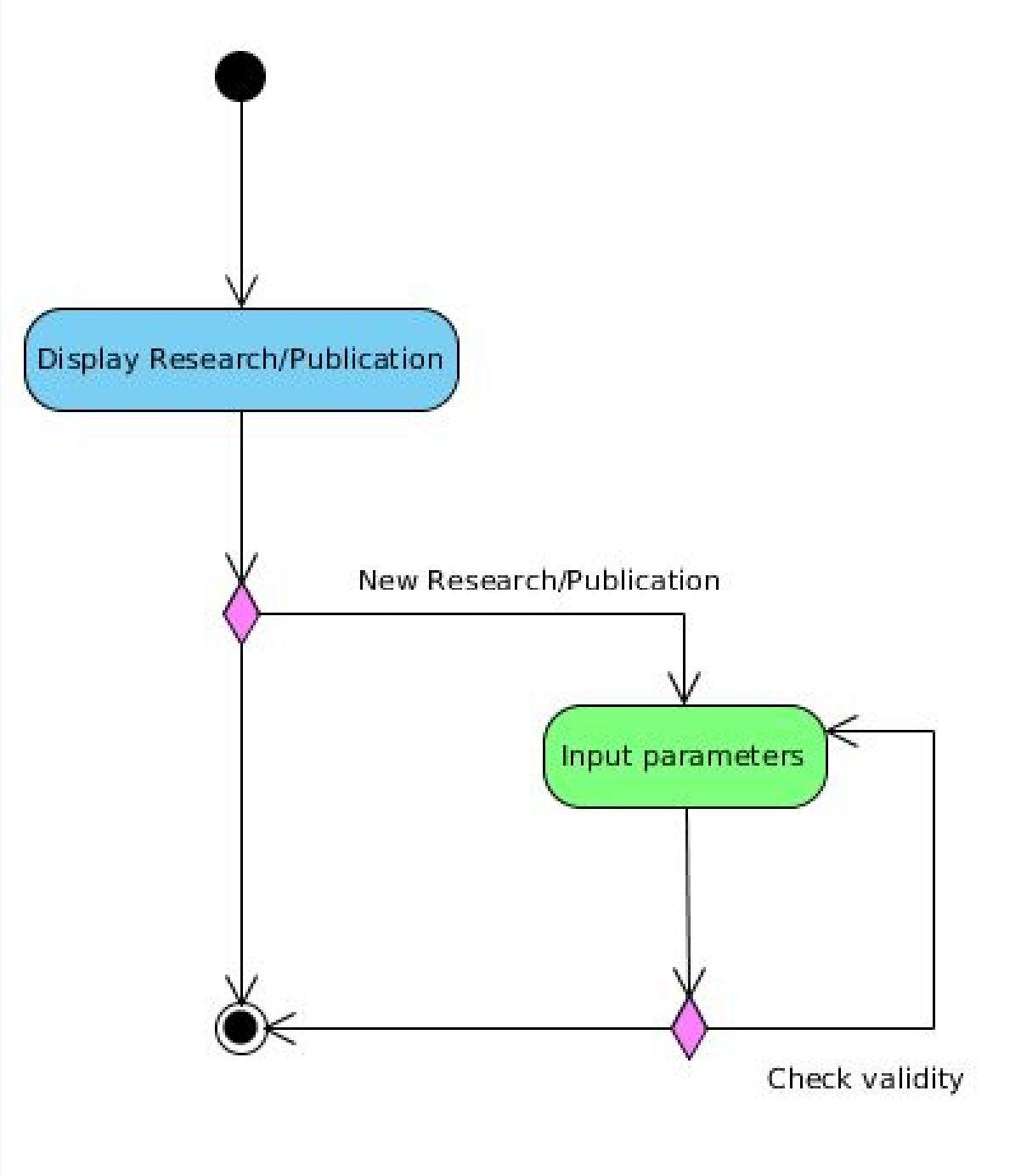
## 2.3 Evaluate students for a course



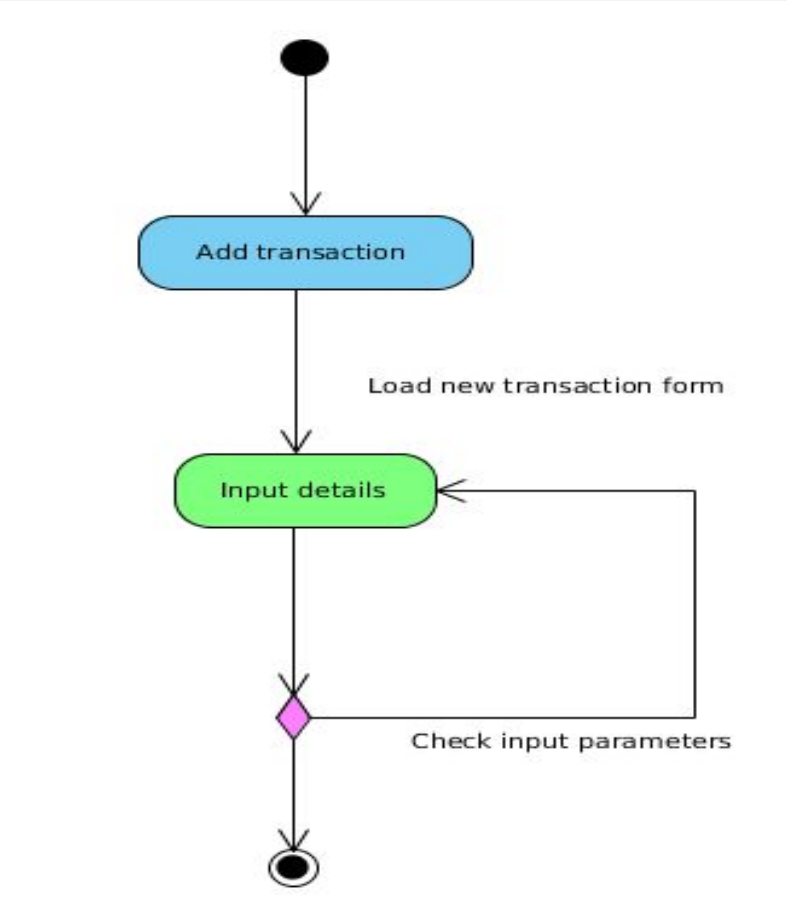
## 2.4 View Inventory

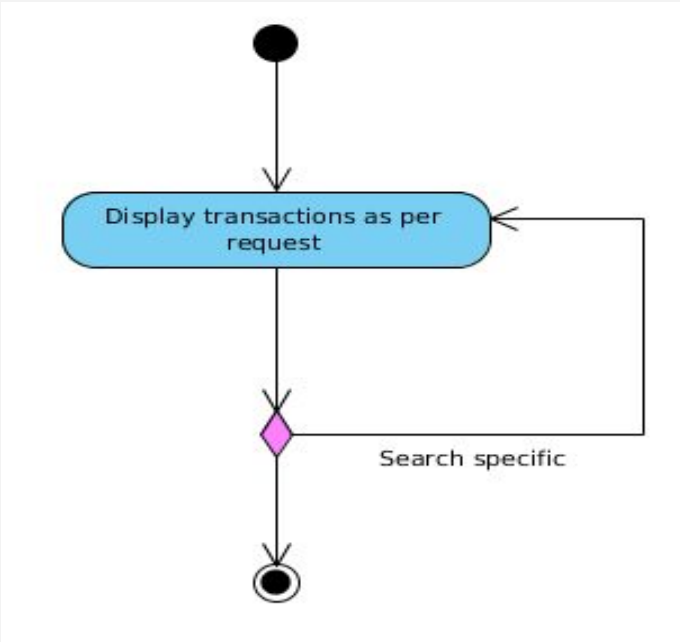


2.5 View Research/Publication



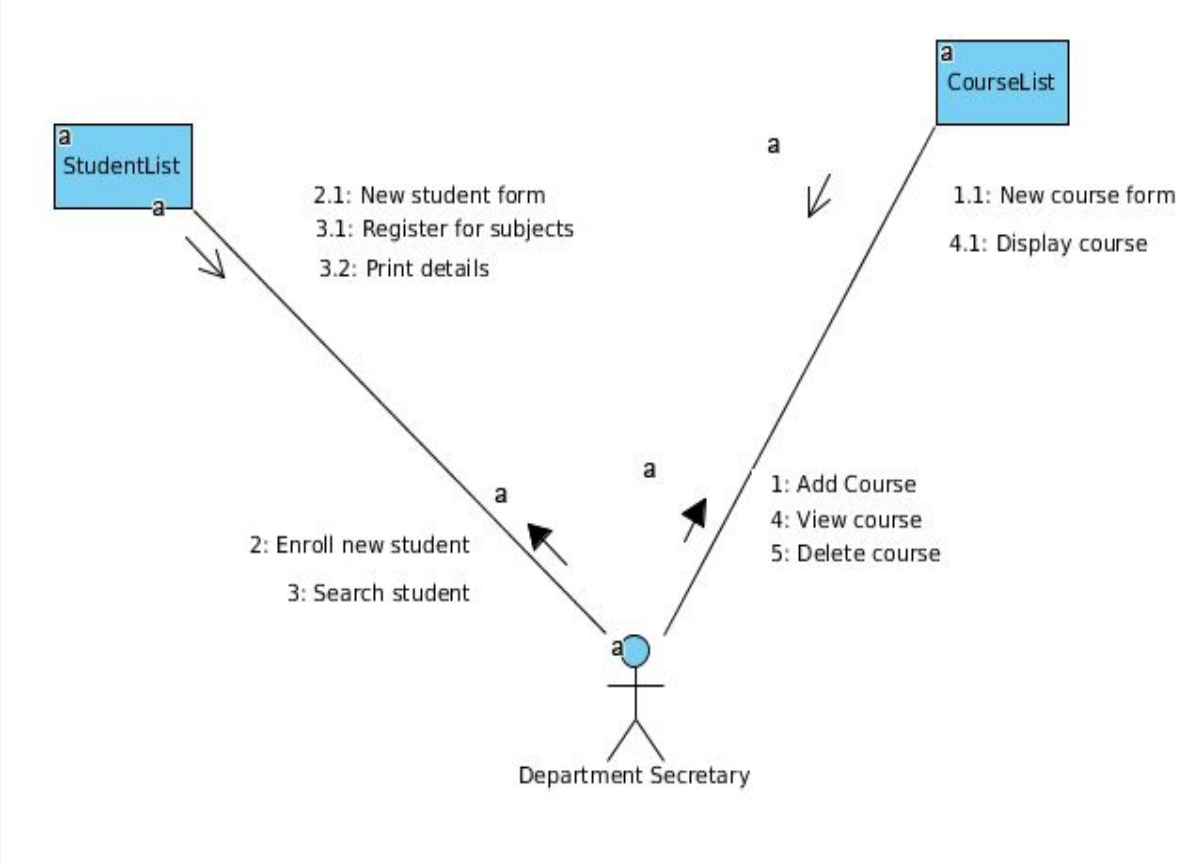
## 2.6 Add transaction & View transactions



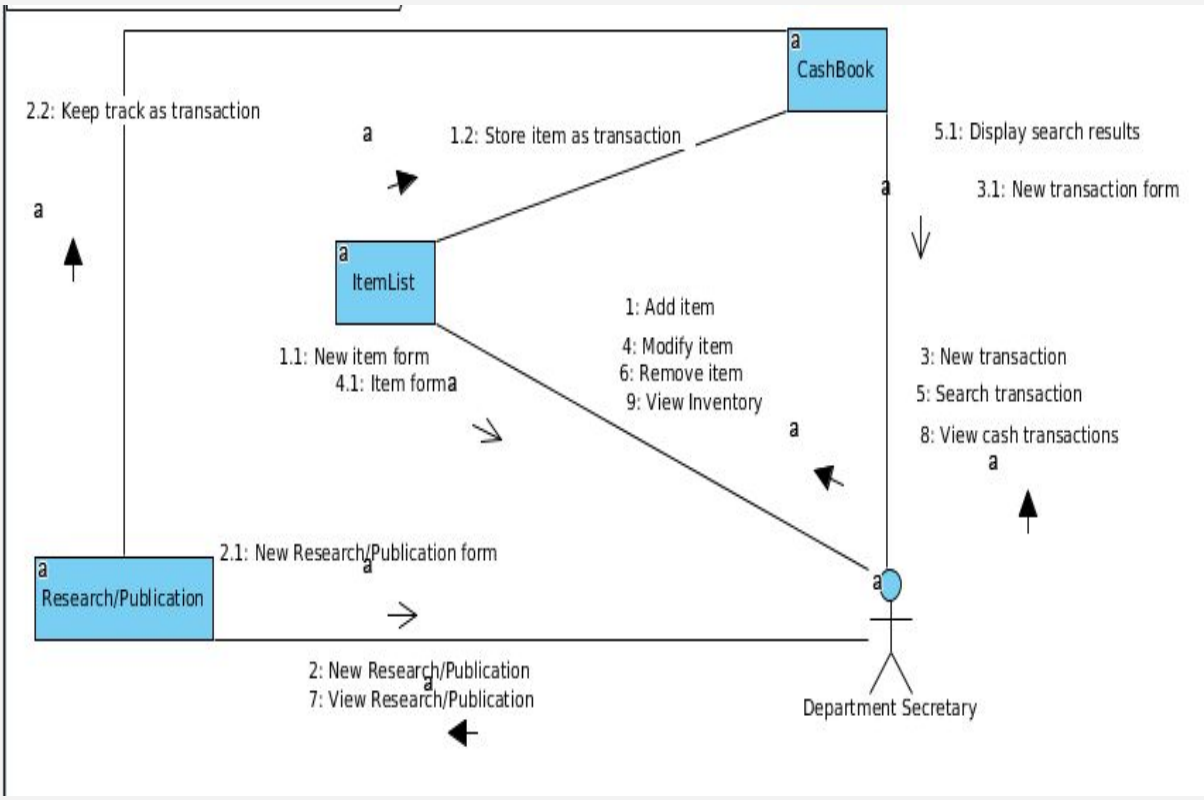



# 3.Communication Diagrams

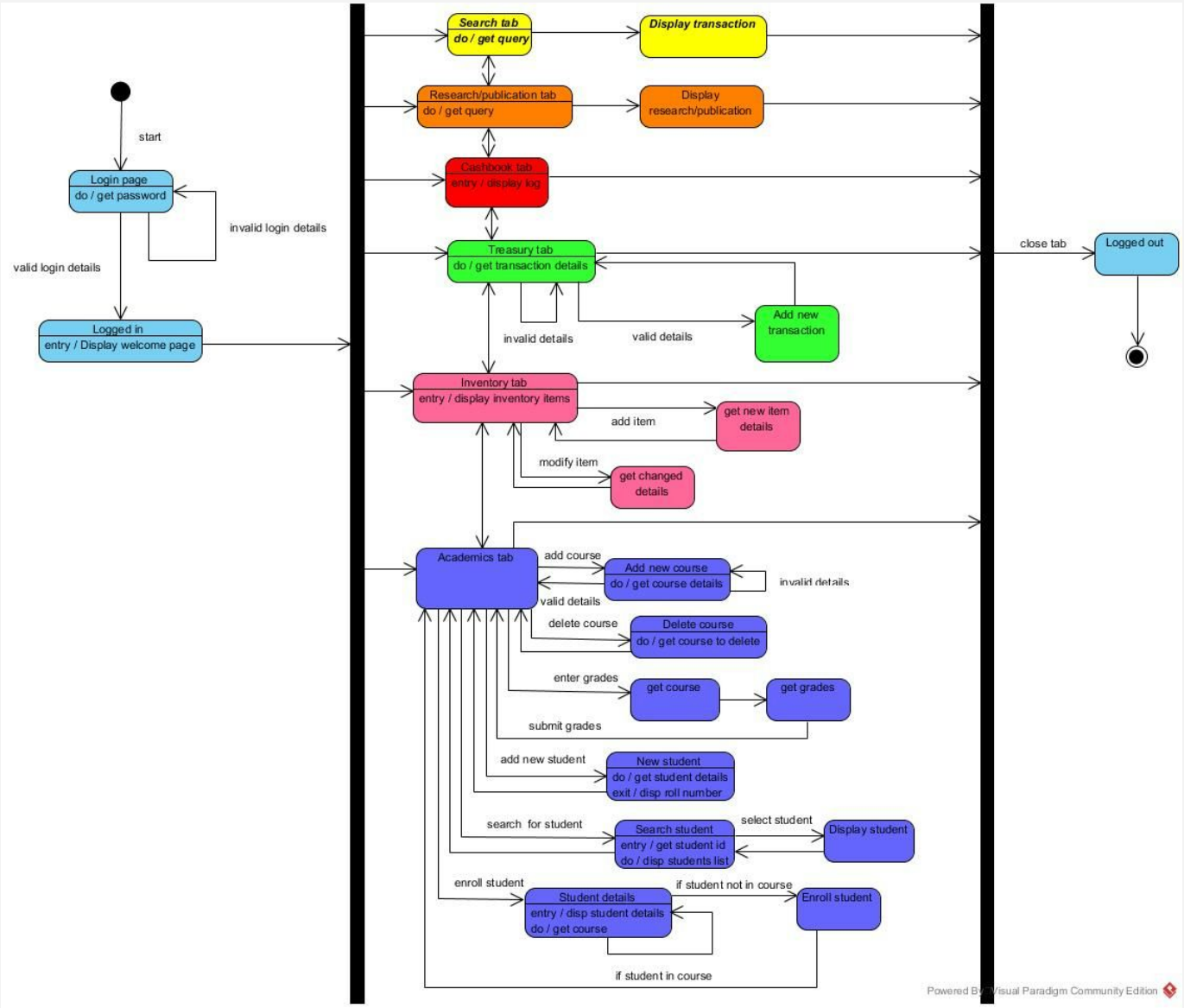
## 3.1 Academics



## 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.