# Open Source Software Analysis and Design

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• Detailed design class diagram.
• Statechart that models the overall behavior of the system
• Detailed statecharts that model the behavior of the key algorithms..
• Test Case Design document.

      I will be using add-on and coding debugging tools such firebug and xdebug to debug php in the same environment as javascript to prevent any coding errors
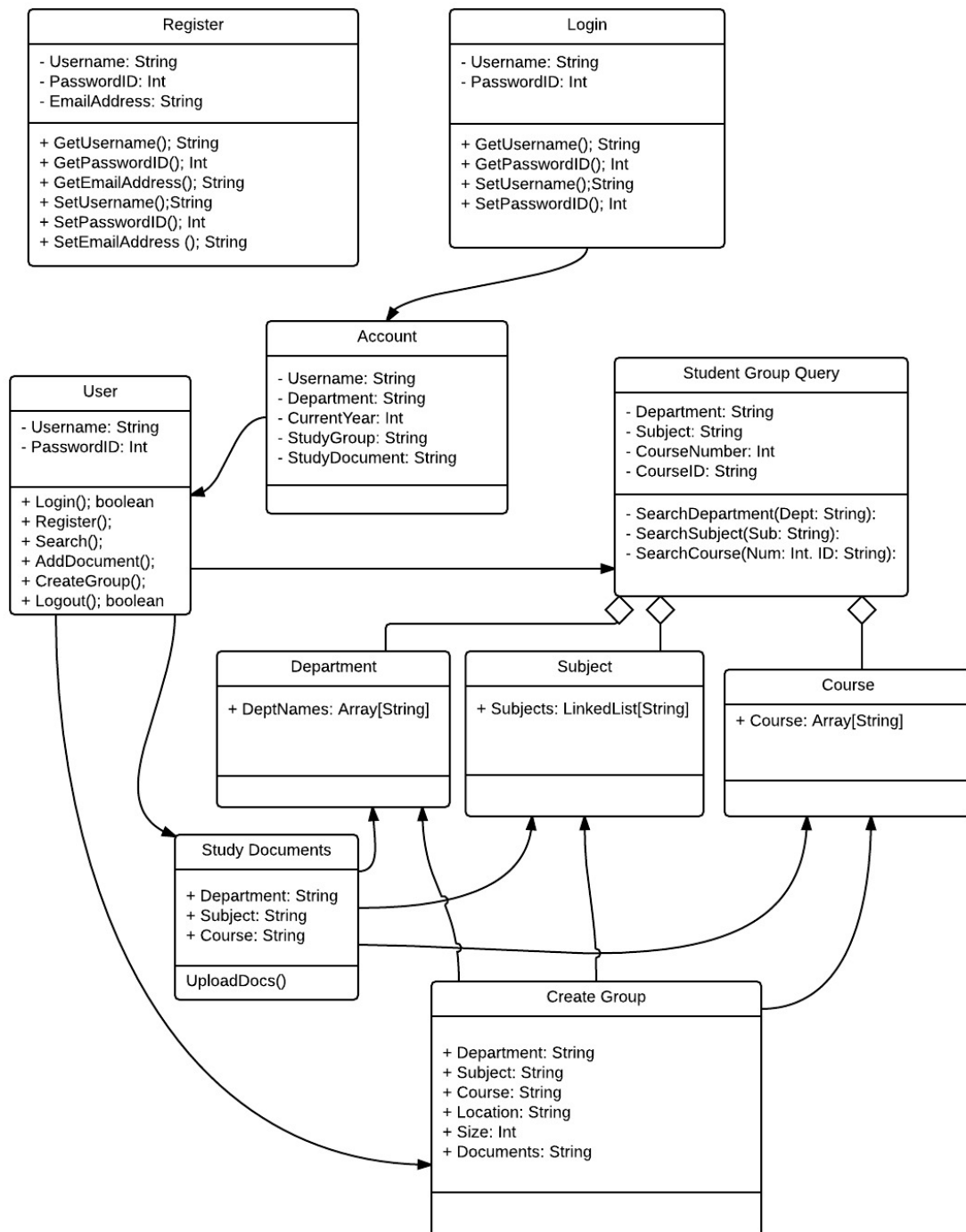
| Functionality Tested | Inputs | Expected Outputs | Error Handling |
| --- | --- | --- | --- |
| Login | Username, Password | Account | The login page will be presented again as a result of incorrect login information |
| Department and Course Search | Department, Course Name and ID | Offered Study Groups | An error message will be presented if incorrect data inputted and the search will be presented again. |

• Full link to private repository on Github.
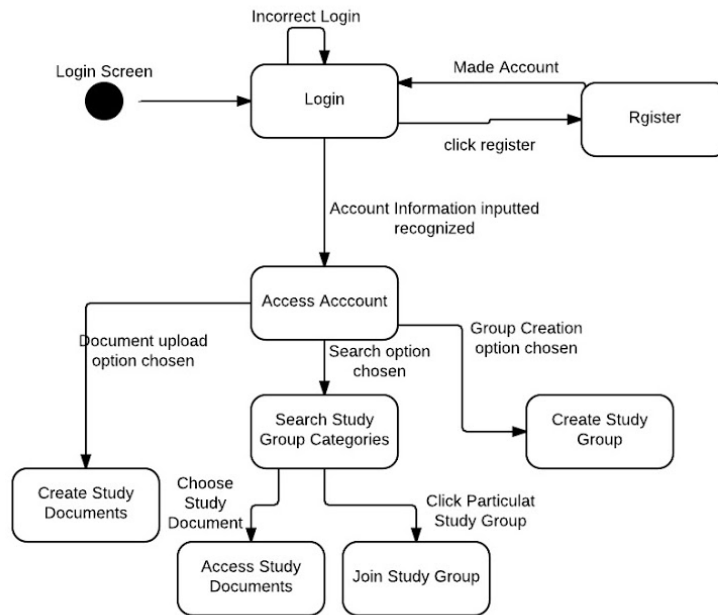      https://github.com/clarks3/OSProject

Testing Methodology
      For system development, I will be using the spiral model. Starting in the planning phase, requirements are gathered and risk is assessed which helps with development in later stages. Additional Functionality can be added at a later date due to software produced early in the software life cycle.

# Design Class Diagram

## Register

- Username: String
- PasswordID: Int
- EmailAddress: String

+ GetUsername(); String
+ GetPasswordID; Int
+ GetEmailAddress(); String
+ SetUsername();String
+ SetPasswordID(); Int
+ SetEmailAddress (); String

## Login

- Username: String
- PasswordID: Int

+ GetUsername(); String
+ GetPasswordID(); Int
+ SetUsername();String
+ SetPasswordID(); Int

## Account

- Username: String
- Department: String
- CurrentYear: Int
- StudyGroup: String
- StudyDocument: String

## User

- Username: String
- PasswordID: Int

+ Login(); boolean
+ Register();
+ Search();
+ AddDocument();
+ CreateGroup();
+ Logout(); boolean

## Student Group Query

- Department: String
- Subject: String
- CourseNumber: Int
- CourseID: String

- SearchDepartment(Dept: String):
- SearchSubject(Sub: String):
- SearchCourse(Num: Int. ID: String):

## Department

+ DeptNames: Array[String]

## Subject

+ Subjects: LinkedList[String]

## Course

+ Course: Array[String]

## Study Documents

+ Department: String
+ Subject: String
+ Course: String

UploadDocs()

## Create Group

+ Department: String
+ Subject: String
+ Course: String
+ Location: String
+ Size: Int
+ Documents: String
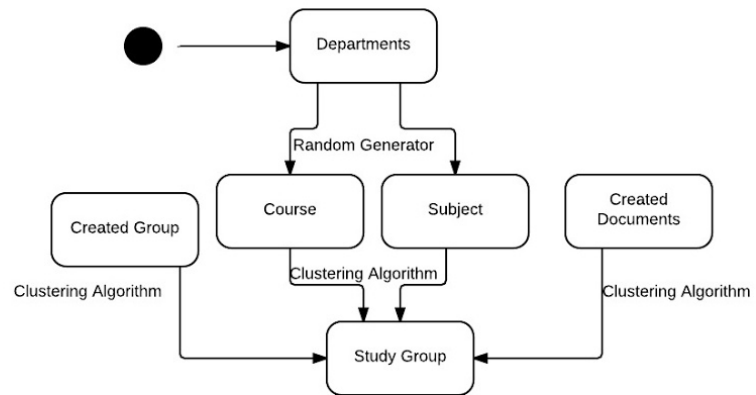
Statechart that models the overall behavior of the system.

Detailed statecharts that model the behavior of the key algorithms.

```
      ●────────▶┌──────────────┐
               │ Departments  │
               └──────────────┘
                   │       │
                   │ Random Generator
               ┌───┘       └───┐
               ▼               ▼
┌──────────────┐  ┌──────────┐  ┌──────────┐  ┌──────────────┐
│              │  │  Course  │  │ Subject  │  │   Created    │
│Created Group │  │          │  │          │  │  Documents   │
└──────────────┘  └──────────┘  └──────────┘  └──────────────┘
                        │ Clustering Algorithm
 Clustering Algorithm   └───┐   ┌───┘        Clustering Algorithm
        │                   ▼   ▼                   │
        └──────────▶┌──────────────┐◀───────────────┘
                    │  Study Group │
                    └──────────────┘
```

# Mock ups

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**StudyBuddy**

UserName[        ]
Password[        ]
        Login
        Register

---

**Register**

Username[    ]
Password[    ]
EmailAddress[   ]

---

**Account**            **SearchLink**

Username:
Department:
Current Year:
Create Group Link
Study Groups:
[                    ]
Create Documents Link
Study Documents:
[                    ]

---

**Group Search**

SearchDepartment[          ]
SearchSubject[          ]
SearchCourse[          ]

---

**Create Group**
Department[        ]
Subject[        ]
CourseNumber[        ]
CourseID[        ]
        Description
[                ]

[                ]

---

**Create Documents**
Department[        ]
Subject[        ]
CourseNumber[        ]
CourseID[        ]

[                ]

[                ]

---

**Departments**

Science
Engineering
Education
    ....

---

**Subjects**

Calculus
Physics
Chemistry
    .........

---

**Courses**

CSC415
MAT128
SPA101
    .........

---

**Groups**
- CalculusStudy
- SpanishGroup
    ........

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**Group Page**
    Title:
Description: