

# National Board of Accreditation Report Generating Software



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## 1. Introduction

All over the world, governments and international communities are working towards the goal of improving the quality of education by investing in pieces of training, improving general grading schemes, and taking up many other initiatives. To take this initiative forward our institute has been following the outcome-based approach to learning and has recently been accredited by National Assessment and Accreditation Council (NAAC). Accreditation is a process of validation where institutions providing higher education are evaluated on their quality status. There are a set of standards over which a committee reviews the institution. The analysis is done based on the institute's policies and student performance. A major consideration is how learning assessment criteria that provide comparable data between objectives and outcomes are correlated. Accreditation is useful in different contexts at various levels in the following ways:

- Students: Choosing the right institutes for their higher studies and proper growth.
- Faculty: Good academic environment and a better career Prospect.
- Parents: Assurance of quality education to their wards.
- Alumni: Reputation and better career paths.
- Industries and Employers: Recruitment of well-qualified, competent and role-ready graduates

## 2. Objective

The objective of this project is to automate the process of generating the NBA Report. An application intended for college faculty members to ease the process of generating an NBA report by taking input from faculty and student. Generating Accreditation, matching CIF outcome with program outcome, taking feedback from students on their program outcome, taking indirect feedback from the teacher, etc.

An interface is designed on which the faculty puts in a few parameters and reports are generated in a specified format, making this work easy. No formulas need to be applied by the faculty, no calculations need to be done. All the information is mapped, tabulated and represented properly, making it easier to analyze the course, its outcomes, its assessment components and improve upon them or accordingly take the steps or changes, if any, for the course or may be the program as a whole.

### **3. Motivation behind choosing this project**

National Board of Accreditation is becoming compulsory for future and every college will need a software because manually calculating course outcomes and program outcome is a tedious task and time taking. A step is taken to automate the process.

**4. NBA Report Generating Software** This Software generates NBA Report.

#### **4.1 NBA Calculation Procedure**

- a) Direct feedback about the course taught to student is taken from the students and  $w_1$  that is weight of direct feedback is calculated.
- b) For the calculation of the the weight  $w_2$  of indirect feedback input of the course details, student performance is taken from the faculty.
- c) Final Course Outcome is calculated by adding the weight  $w_1$  of direct feedback and weight  $w_2$  of indirect feedback and Corresponding Program Outcomes achieved are calculated thereafter.

#### **4.2 NBA Calculation**

**4.2.1 Direct Feedback** Direct Feedback about the course taught by faculty is taken by each student of that course. And then Direct Weight is calculated from the direct feedback obtained.

**4.2.2 Indirect Feedback** It is calculated from the inputs taken from faculty.

**4.2.2.1 Course Outcome** Course Specific goals set by the course mentor at the start of the session. Most fundamental to outcome-based learning. Course outcomes describe what the learners will be able to do as the course ends when they gain complete knowledge from the whole course. It is a must for each course outcome to align with one of the program outcomes.

**4.2.2.2 Program Outcome** Program Outcomes reflect those particular information and aptitudes you hope scholars will secure as part of their educational experience in the program.

**4.2.2.3 Program Specific outcome** Program outcome specific to a course.

**4.2.2.4 Assessment Component** Different exams/ quizzes/ assignments/ projects that are conducted by the faculty of that course to assess students.

Different assessment component have a percentage of question/task from the particular course outcome that is needed to be achieved.

**4.2.2.5 Correlation Matrix** Weight for direct and indirect measurements.

**4.2.2.6 Marks List** Marks list of the particular subject is taken for the calculation of the percentage of students attaining the course outcome.

#### **4.4.4.7 Indirect Feedback Calculation**

1. Calculating Success % for each Assessment Component for corresponding to each course.
2. Calculating weighted sum for CO with respect to AC for every course.
3. Correlation between Course Outcomes and Program Outcomes Course outcomes is mapped to program outcomes.

### **4.3 Technical Challenges**

1. Session Management

#### **Challenge**

This software will be used by multiple people. Many students and teacher will have their profile. So It was necessary to have sessions for individual users.

#### **Solution**

Httpsessions were made for every login by users.

### **4.4 Software Design**

This project is a smart documentation project. So, the major requirements for the project are to extract the information from the text document of a specific format, operate on the data retrieved and then display the data on a web page.

Following is the major functioning of the project and the software requirements for it and their integration to acquire desired results.

#### **4.4.1 Backend**

1. Eclipse Oxygen to run our code.
2. Apache POI used for creating JAVA APIs for reading Microsoft Excel files in Java. It provided libraries of Java for reading and writing files in formats of Microsoft Office.

#### **4.4.2 Frontend**

For developing the front end of this smart documentation application, HTML, CSS and JavaScript is used.

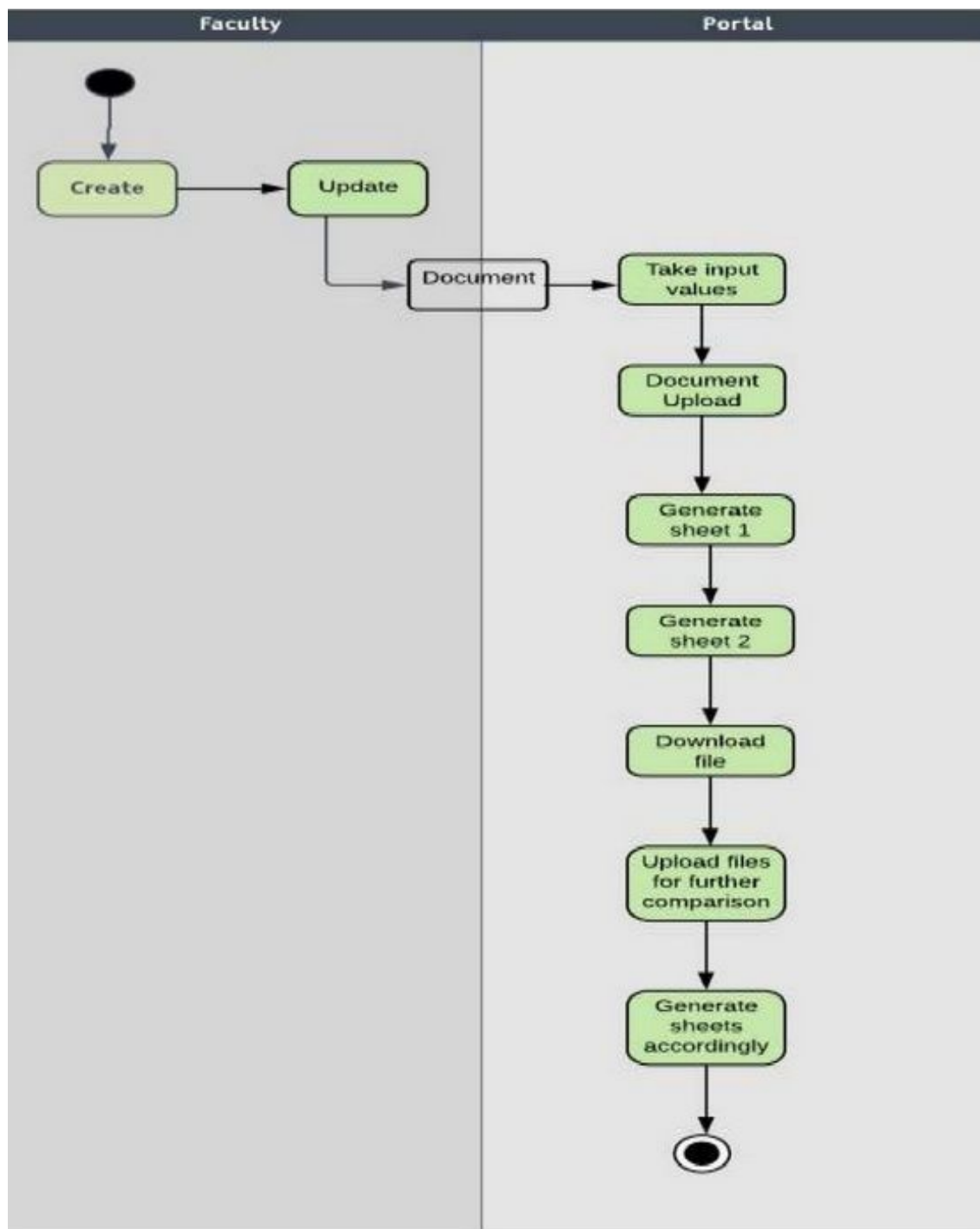
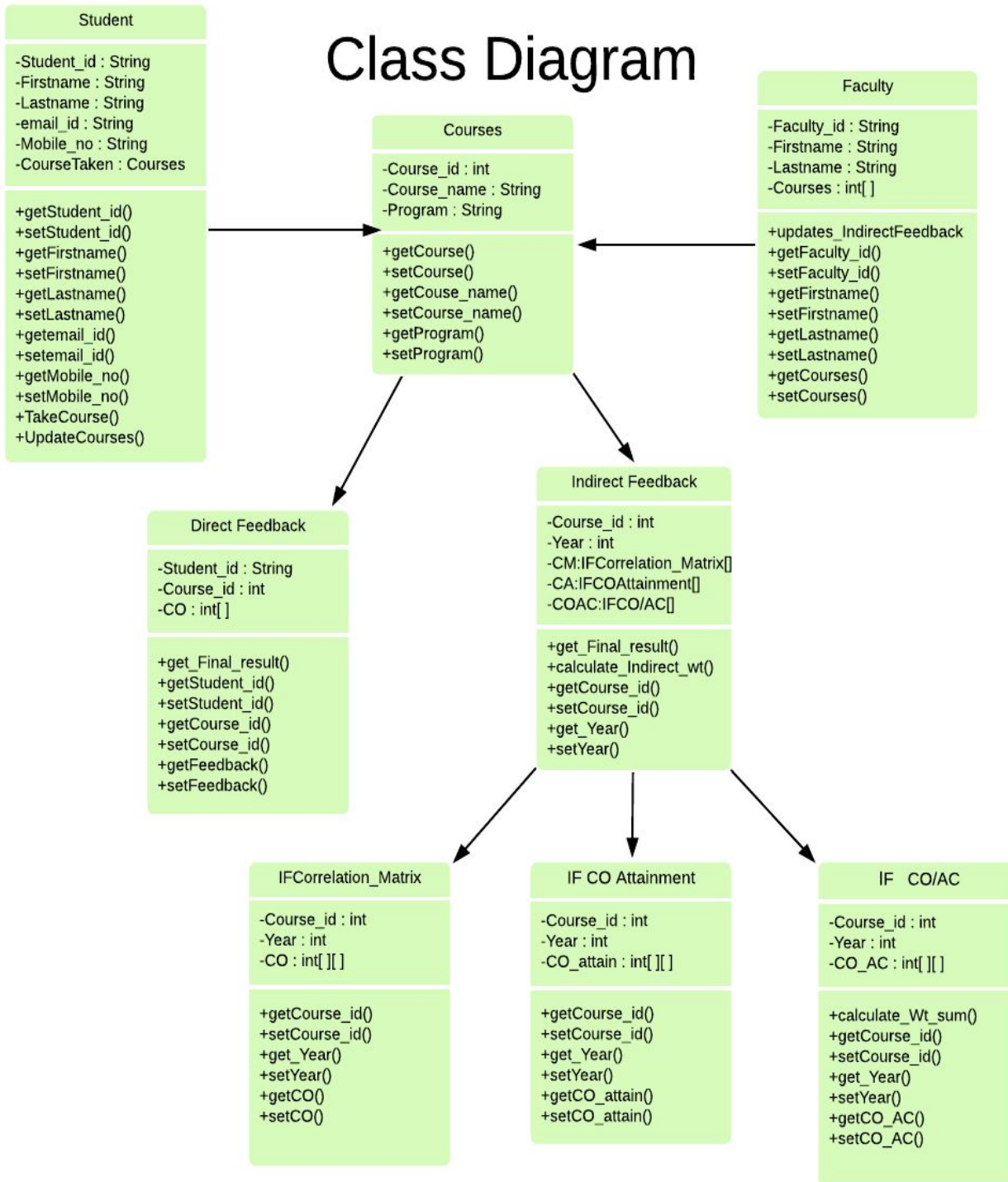


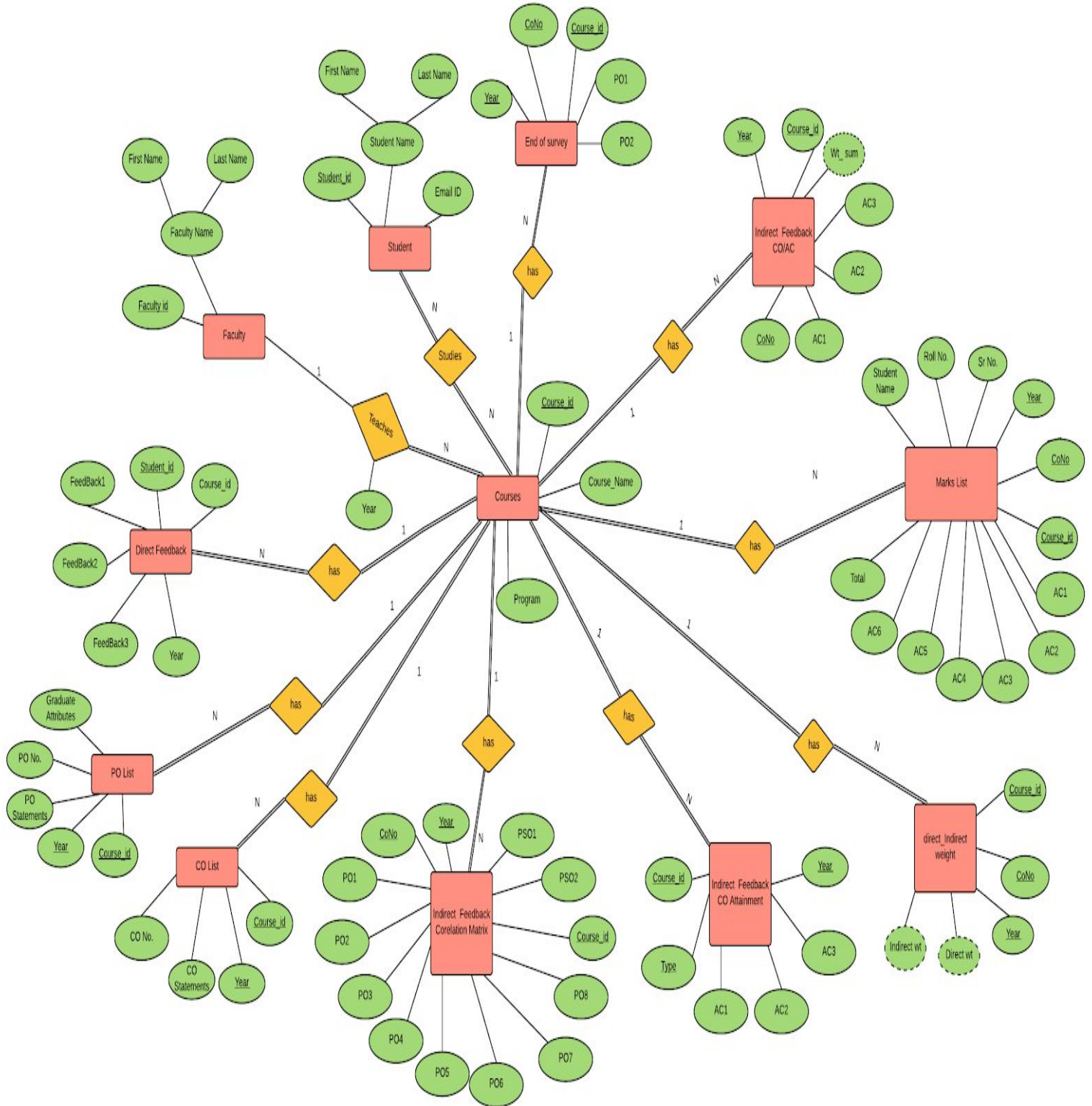
Figure 5: SYSTEM DESIGN ACTIVITY DIAGRAM

## Class Diagram for NBA Accreditation

# Class Diagram



# ER Diagram



## **5. Conclusion**

This project is a smart documentation project. So, the major requirements for the project are to extract the information from the text document of a specific format, operate on the data retrieved.

The aim of the software is to reduce the workload on faculty of entering all the data in excel sheet, applying all the formulae to it. Also, it is now easy to customize the number of assessment components, course outcomes, program outcomes, etc. for different courses and programs. Two sheets are automatically generated just after entering the required set of numbers on the interface and all the hard work is done at the back end, generating the file in the specified format. All of this is aimed towards achieving ease of understanding the data and properly compiling it for accreditation purposes.