

## Customized Web Application for NBA

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**Abstract**— National Board of Accreditation is entrusted with the task of evolving a procedure for quality assessment in the Engineering Education Sector and to assist the stakeholders in technical education to identify those institutes and their programmes which meet the quality benchmarks setup by international agencies. National Board of Accreditation is a process of quality assurance and improvement. The purpose of the accreditation by NBA is to promote and recognize excellence in technical education in colleges and universities. This process of accreditation helps in realizing a number of benefits for Department. Accreditation helps the institute to know its strengths, weaknesses and opportunities. In this project, we are going to make a web application for the NBA (National Board of Accreditation) process. The SAR (Self-Assessment Report) for the department is also created. It consist of 6 Course Outcomes (CO) and 12 Program Outcomes (PO). Attainment of Course Outcomes is done by mapping with the Program Outcomes. We are also creating Pre-Qualifier Form for Department. We will be using the data to generate an estimation of the SAR score that the particular institute might be able to score. We will be using JavaScript, HTML and php. This will consist of one database.

**Key words:** NBA, Web Application

### I. INTRODUCTION

Education plays a vital role in the development of any nation. Therefore, there is a premium on both quantity (increased access) and quality (relevance and excellence of academics programmes offered) of higher education. Like in any other domain, the method to improve quality remains the same that is, finding and recognizing new needs and satisfying them with products and services of international standards. NBA has been setup to help all participating Institutions assess their performance vis-à-vis set parameters.

NBA accreditation is a quality assurance scheme for higher technical education. It is open to all Institutions in Engineering and Technology, Management, Architecture, Pharmacy, Hotel management and Catering Technology, Town and Country Planning, Applied Arts and Crafts in India which provide technical education to students.

Accreditation is a process of quality assurance and improvement, whereby a programme in an approved Institution is critically appraised to verify that the Institution or the programme continues to meet and exceed the Norms and Standards prescribed by AICTE from time to time. Accreditation does not seek to replace the system of award of degree and diplomas by the Universities/autonomous Institutions. But, accreditation provides quality assurance that the academic aims and objectives of the Institution are honestly pursued and effectively achieved by the resources currently available, and that the Institution has demonstrated capabilities of ensuring effectiveness of the educational programme(s), over the validity period of accreditation.

### A. Modules & Their Description

- 1) *Vision, Mission & Program Educational Objectives:*
  - State the Vision and Mission of Department.
  - State the Program Educational objectives (PEOs).
  - Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders.
  - State the process for defining the Vision and Mission of the Department and PEOs of the program.
  - Establish consistency of PEOs with Mission of the Department.
- 2) *Program Curriculum & Teaching-Learning Processes:*
  - a) *Program Curriculum*
    - State the process used for attaining the Program Outcomes and Program Specific Outcomes.
    - State the delivery details of the content beyond the syllabus for attainment of POs and PSOs [4].
  - b) *Teaching-Learning Processes:*
    - Describe process followed to improve quality of Teaching & Learning.
    - Quality of internal semester Question papers, Assignments and Evaluation
    - Quality of student projects
    - Initiatives related to industry interaction
    - Initiatives related to industry internship/summer training
- 3) *Course Outcomes & Program Outcomes*  
Establish the correlation between the Courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) .
- 4) *Student's Performance*
  - Enrolment Ratio
  - Success Rate in the stipulated period of the program
  - Success rate without backlogs in any semester/year of study
  - Success rate in stipulated period
  - Academic Performance in Third Year
  - Academic Performance in Second Year
  - Placement, Higher Studies and Entrepreneurship
- 5) *Faculty Information & Contributions*
  - Student-Faculty Ratio (SFR)
  - Faculty Cadre Proportion
  - Faculty Qualification
  - Faculty Retention
  - Innovations by the Faculty in Teaching and Learning
  - Faculty as participants in Faculty development/training activities/STTPs
- 6) *Facilities & Technical Support*
  - Adequate and well equipped laboratories, and technical manpower
  - Additional facilities created for improving the quality of learning experience in laboratories
  - Laboratories: Maintenance and overall ambiance
- 7) *Continuous Improvement*
  - Actions taken based on the results of evaluation of each of the POs & PSOs

- POs & PSOs Attainment Levels and Actions for improvement – CAY
- Academic Audit and actions taken thereof during the period of Assessment
- Improvement in Placement, Higher Studies and Entrepreneurship
- Improvement in the quality of students admitted to the program

### B. Description

The purpose of the accreditation by NBA is to promote and recognize excellence in technical education in colleges and universities—at both the undergraduate and post graduate levels. Institutions, students, employers, and the public at large all benefit from the external verification of quality provided through the NBA accreditation process. They also benefit from the process of continuous quality improvement that is encouraged by the NBA’s developmental approach to promote excellence through technical education.

Through accreditation, the following main purposes may be served:

- Support and advice to technical Institutions in the maintenance and enhancement of their quality of provision.
- Confidence and assurance on quality to various stakeholders including students.
- Assurance of the good standing of an Institution to government departments and other interested bodies.
- Enabling an Institution to state publicly that it has voluntarily accepted independent inspection and has satisfied all the requirements for satisfactory operation and maintenance of quality in education.

## II. PROPOSED ARCHITECTURE

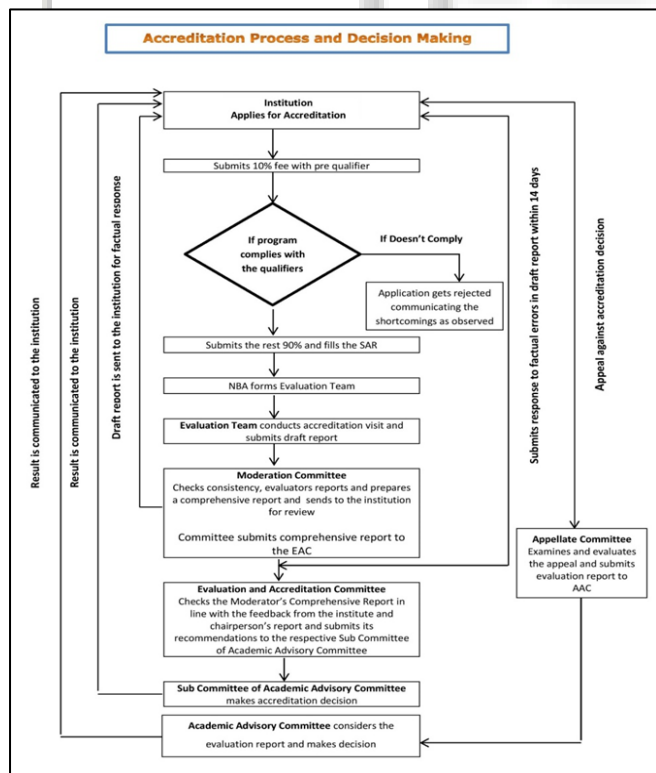


Fig. 1.1: Accreditation Process & Decision Making

## III. HARDWARE REQUIREMENT

Processor	Any processor starting from Pentium
RAM	Minimum 512Mb
Hard Disk	Minimum 250Gb

### 1) Connectivity

Two channels of connectivity are mandatory for devices. First connectivity as GPRS is mandatory. Second connectivity can be through Wi-Fi b/g/n/Fixed broadband. E.g. GPRS + broadband, GPRS + Wi-Fi, etc.

### 2) Status Indications

Multi-color LEDs/LCD (to indicate network connection, signal strength, to indicate battery charge remaining etc.) or on screen display of all indicators like battery charge, network strength etc.

### 3) Display

Minimum 2.5 screen or higher.

### 4) Battery Backup

Minimum 4 hours battery backup.

### 5) Power Adaptor

AC/DC Adaptor with surge protection, input 100-264V AC, 50Hz.

### 6) Speaker

A facility should be provided for voice confirmation of the transaction.

## IV. SOFTWARE REQUIREMENT

### A. Operating System

An operating system (OS) is system software that manages computer hardware and software resources and provides common services for computer programs.

#### 1) Full Supported List

- Windows XP
- Windows Vista
- Windows 7 / 8 / 8.1 / 10

#### 2) Minimum

- Windows XP

### B. Web Browsers

A web browser (commonly referred to as a browser) is a software application for retrieving, presenting, and traversing information resources on the World Wide Web. It supports the following Web Browsers

#### 1) Full Supported List

- Chrome
- Microsoft Edge
- Firefox
- Internet Explorer

### C. Lack of knowledge

Engineering education system is of utmost importance in generating the technical manpower required for building a strong nation. Presently there are 1265 approved engineering colleges with a total intake of about 3,81,000 students in India (www.aicte.ernet.in). With the ongoing liberalization and globalization of the economy, more and more foreign universities/institutes are entering into joint ventures with Indian universities/institutes. All this has resulted in bringing the Quality of education on to the centre stage. A mechanism is needed to assess and assure the education offered by

various institutions. This mechanism should be developed based on the conditions prevailing in the technical education sector of that country.

Positive changes, which favour quality improvement, are visible in these revisions. The change of grading system from 'A, B, and C' classification to 'Accredited for 5 years and 3 years' reduces the disparity between the accredited programmes. The increase of minimum required points from 550 to 650 for getting accreditation, tightened the quality assurance of the programmes. An attempt to reduce the number of variables to be assessed during the accreditation process is visible in the second revision. A tendency to give more weight to the institute level performance than the department level is visible in the new accreditation process. A new outlook of process approach can be viewed in the modified system compared to the resource approach in the earlier system

NBA has been assisting the stakeholders in technical education to identify those institutions and their specific programmes, which meet the norms and standards and criteria prescribed by AICTE. The process has been reviewed periodically to make it more effective. These revisions indicate a positive shift of assessment from resource perspective to process perspective. Improvements are still possible to reduce subjectivity from the process and to make the accreditation fool proof.

#### D. Proposed System

We are introducing Multi Client-Server Architecture. In this architecture there are multiple clients who are connected with one Server through a network i.e. Internet or Intranet.

One database is required to store the data of Pre-qualifier form, Staff and Department. The response will be bi-directional i.e. Client can request to Server through Internet then Server will request to Database for accessing the data which is request. After that Database will respond to Server by giving the information which is needed then Server will respond to Client through Internet or Intranet.

##### 1) Pre-Qualifier Form

Under this process, there are two parts i.e. Part A & Part B. The institution will first be required to pay only 10 % of the fee and fill in the pre-qualifier format. These details filled by the institution in the pre-qualifier format will be evaluated by NBA.

If status in all cases is yes then the institute shall be treated as eligible for furnishing the e-SAR & which may be considered for accreditation

#### E. Advantages

- The significance of our project is to simplify the accreditation process for the institution.
- Accreditation process like pre-qualifier form can be filled on a single click
- Accreditation puts a stamp of approval on graduates: graduating from an accredited institution indicates that graduates are ready to practice at a certain level.
- It affords the opportunity for continuous improvement of institutions and educational programs.
- In addition, accredited programs often have advantage in governmental decisions on public funding of research or educational infrastructure.

#### 1) Applications

- Our web application can be used for accreditation process of both graduate and under graduate level of
- Engineering institutions
- Management institutions
- Architecture institutions
- Pharmacy/ Hospitality institutions

#### 2) For students

Students studying in NBA accredited Institutions can be assured that they will receive education which is a balance between high academic quality and professional relevance and that the needs of the corporate world are well integrated into programmes, activities and processes. It signifies that he has entered the portals of an Institution, which has the essential and desirable features of quality professional education.

#### 3) For parents

It signifies that their ward goes through a teaching-learning environment as per accepted good practices.

#### 4) For country

Accreditation helps in gaining confidence of stakeholders and in giving a strong message that as a country, our technical manpower is of international standards and can be very useful in enhancing the global mobility for our technical manpower.

## V. CONCLUSION

The aim of our project is to help in accreditation process to fulfill the goal so that many of the institutions will be accredited. NBA accreditation is a quality assurance scheme for higher technical education.

NBA will facilitate to enhance the quality of technical education and help in establishing relevancy of technical education as per the needs of the industry and society at large.

NBA's key objective is to contribute to the significant improvement of the Institutions involved in the accreditation process. Accreditation process quantifies the strengths, weaknesses in the processes adopted by the Institution and provides directions and opportunities for future growth.

NBA provides a quality seal or label that differentiates the Institutions from its peers at the national level. This leads to a widespread recognition and greater appreciation of the brand name of Institutions and motivates the Institutions to strive for more.

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