

Designing a Management Information System (MIS) using Data Mining for Central Assessment Programme (CAP) at the University Level



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Developing a MIS for Center Assessment Program activities at the University level have to control and handle the activities smoothly. As most of the educational organizations face enormous problems and difficulties for completing the assessment work with zero risks. This proposed research article encompass the assessment activities in the University level to resolve the problems and difficulties of the assessment activities conducted by the University Using mining tools and techniques this MIS is developed for CAP activities at university level.

Keywords: MIS, Assessment, Association Rule Mining, Pruning algorithms, CAP.

1. Introduction

A Central Assessment program (CAP) that reflects not only the curriculum's objectives but it shows the capabilities of the student's performance and the performance of the organization towards its vision and goal. In this research work the main ideas of developing a Knowledge Based System for Center Assessment Program with reference to the Answers Sheet evaluation of the BCA, BBA students at the University Level. Though every concerned in-charge takes care about the paper assessment work or try to make the 100 percent justice to this work but doing manual at the human being level may happens to unfair and unreliable. All the tasks involved in this assessment work can be processed thorough this proposed system. It helps to the concerned individual to analyze the total activities such as issuing, receiving the answer sheets bundle form the examiners or evaluators, preparing the lists off the examiners those who are eligible to assess the paper as per the rules and regulations of the University, analyzing the performance of the examiner with respect to the numbers of answer sheets assessed per day and shows the max and min of limits of assessing, it calculates the assessment remuneration of all the examiners as per the remuneration rules of the university, mark sheets preparing etc. The main attractive part of this proposed system is to calculate and give an complete analyzed reports of the daily transactions such as total disbursement of remuneration, pending and assessed answer sheets as per the date instructed by the university etc. Overall the activities involved in the central assessment programme can be done by this system. Above proposed system will be developed through Data Mining & Data warehousing techniques.

2. Objectivities

The main objective of developing a Knowledge Based System for Center Assessment Program with activities at the University level is to control and handle the activities smoothly. This proposed system encompasses to find out the seasons while assessment activities are conducted.

1. For improvement and impartial assessment each stake holders should understand his inclinations, mistakes and misunderstanding about assessment system.
2. One should give proper justice to the answers presented by the students against introspecting the optimistic, pessimistic and overvaluation attitudes of the examiners.
3. Finding the reasons behind not attempting the particular question by majority of the students and informing the lacuna to the paper setter and teachers covering the syllabi to fulfill the objectives of the curriculum or through knowledge.

3. Origin of the Research Problem

As Central Assessment Programme for paper assessment plays a vital role in the University level especially professional courses such as BBA, BCA etc. It is not only an important but also risky and real time activities. Because these activities encompass the overall performance of the students as well as the teaching groups and satisfy the organizational strategies and vision. Assessment work must be completed within the stipulated period. Most of the educational organizations face enormous minor and major assessment problems and difficulties for completing the assessment work. This proposed research project encompass the assessment activities in the University level to resolve the problems and difficulties of the assessment activities conducted by the University.

4. Interdisciplinary Relevance

This proposed system will help to complete the financial activities, administrative activities etc. Using this system it makes a huge difference between manual activities of various disciplines such as student progression, quality assurance cell,

personality and proficiency development etc. It can be utilized for all departments those are related to the assessment work directly or indirectly of an educational organization.

5. Review of Research and Development

5.1 International Status

International Competitions and Assessments for Schools (ICAS) is conducted by Educational Assessment Australia, UNSW Global Pty Limited. UNSW Global is a not-for-profit provider of education, training and consulting services and a wholly owned enterprise of the University of New South Wales. Students from over 20 countries in Asia, Africa, Europe, Pacific and the USA participate in ICAS each year. EAA produces ICAS papers that test students. The url of this university is <http://www.eaa.unsw.edu.au/>

The assessment of competence as a WSF Referee is undertaken primarily during a candidate's refereeing activity. However, some evaluation and informal assessment may also take place during a seminar on Interpreting the Rules and Decision-Making for WSF Candidates when candidates may be required to fill in the answer sheets supplied with the WSF DVD "Calling the Shots". http://www.worldsquash.org/ws/wpcontent/uploads/2010/12/101223_WSF-Referee

5.2 National Status

The evaluation of Swami Ramanand Teerth Marathwada University, Vishnupuri, Nanded - 431 606 , Maharashtra, India of answer sheets are done by external examiners at a central assessment programme (CAP). The answer sheets are masked before evaluation, so that examiners do not know identity of candidates. The assessed answer sheets are then moderated by another subject expert for discrepancy in assessment, if any. The moderated answer sheets are scrutinized for checking again whether all questions have been evaluated and whether the total of marks given is correct. The final mark sheet is then prepared by unmasking the answer sheets and entering the seat numbers of the students in the mark sheet. This information is taken from this URL: http://www.srtmun.ac.in/Administrative_%20Departments/Examination.aspx

University of Pune, Ganeshkhind, Pune-411007 is having the Examination Branch is mainly deal with the appointment of paper setters, Examiners, moderators, senior supervisors, preparation and publication of schedule of examinations, conduct of examinations, to get performance of the candidates at the examinations properly assessed and timely declaration of results and awarding degrees, diplomas and certificates. For the purpose of simplification, smooth and easier functioning, the work of Examination branch is divided into following three parts, on functional basis:

- Pre-Examination work.
- Actual conductance of Examinations &
- Preparation of Results.

6. Research Methodology

It describes the various methods used by investigators during the study. For the collection of data, the investigator will be collected primary data through questionnaire from workers & managers.

This research will be both exploratory and descriptive in nature and it will utilize both quantitative and qualitative data collection tools. In view of the objectives and hypotheses stated above the methodology adopted for the present study is elaborated as under: The researcher will use primary and secondary data collection methods for this research.

6.1 Sources Of Data and Tools for Data Collection

6.1.1 Primary Sources of data and tools for data Collection

Primary data refers to information that is developed or gathered by the researcher specifically for the research project at hand. It will be obtained from personal interviews & discussions with respective authorities. It is original & reliable source. The researcher will visit the sample firms and collect data using a structured Questionnaire.

6.1.2 Secondary Sources of Data and Tools for Data Collection

Secondary data refers to information that has previously been gathered by someone other than the researcher and/or for some other purpose than the research project at hand. It will be from the reports, records of the company which are already made or published.

An exhaustive desk research will be done both as a part of literature survey and secondary data collection. These sources include:

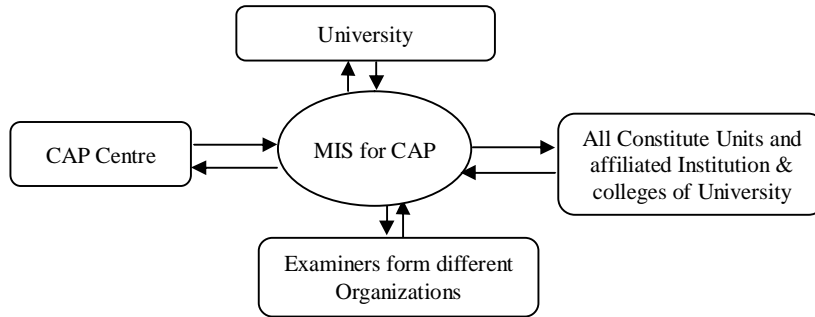
- Books on Human Resource Management, Employee Psychology, Attrition
- Journals
- Research reports and papers
- Articles appearing in dailies and periodicals
- Internet

7. System Design for CAP

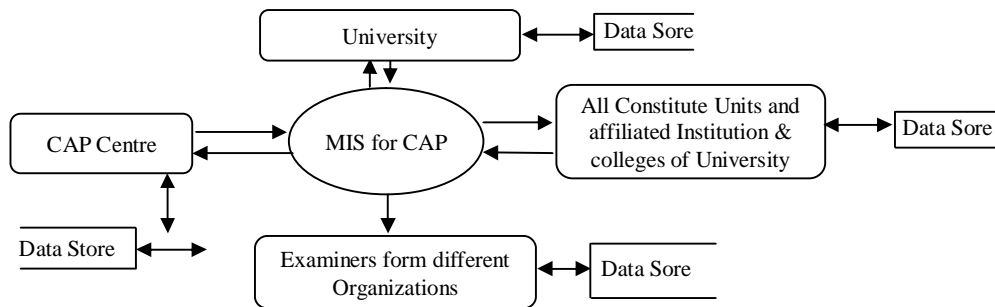
7.1 Data Flow Diagram (DFD)

This research study base on all activities on central assessment program at university level. Within this CAP there are so many sub process are conducted

Context Level of DFD



1 Level of DFD



7.2 Database Formulation

Table-1 Nil Report (Junior Supervisor Report) : This table is having the details of all absenteeism in examination. This is very important for the cap staff. When the mark sheet will be filled up the examiner, that time this report provides the sufficient information for the subject marks.

Table 1 Nil Report (Junior Supervisor Report)

Name of the Center	Varchar2(200)	Not Null
Name of the Examination	Varchar2(100)	
Day& Date	Date	
Subject	Varchar2(100)	
Block	Number(5)	
Supervisor Name	Varchar2(100)	
Total No. students allotted	Number(5)	
Total No. of Ans.Sheet	Number(5)	

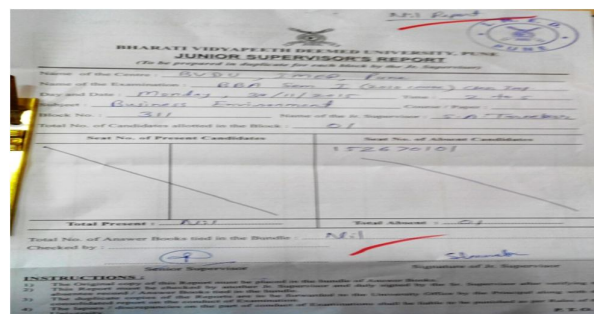


Table -2 Examiner’s Attendance Sheet: the examiner’s attendance sheet provides the information for calculating all examiners DA and Staff of the cap who are working for the specific period of time. By observing this table attendance the number of days of present will be found.

Table 2 Examiner's Attendance Sheet

Date	Varchar2(200)	Not Null
Name of the Examination	Varchar2(100)	
College/Institute Name	Date	
Entry Time of	Varchar2(100)	
Exit Time	Number(5)	
Total No of ans. Sheet assessed	Varchar2(100)	

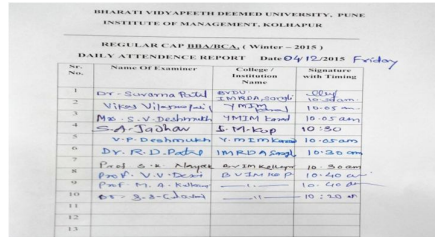


Table 3 Travelling/Conveyance Allowance

Date	Varchar2(200)	Not Null
Name of the Examiner	Varchar2(100)	
Address	Varchar2(100)	
College/Institute	Varchar2(100)	
Date of Work	Number(5)	
Total days	Varchar2(100)	
Travelling from	Varchar2(100)	
Travelling To	Varchar2(100)	

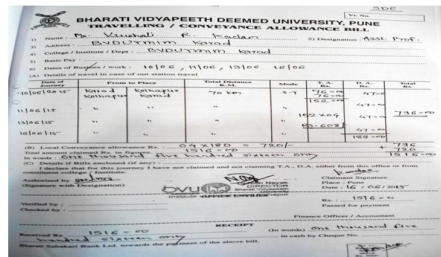


Table 4 Remuneration for Assessment Work

Name of the Examiner	Varchar2(100)	Not Null
Address	Varchar2(100)	
Examination	Varchar2(100)	
Session	Varchar2(100)	
Subject assessed	Varchar2(100)	
Total no. of papers assessed	Number(5)	
Total Amount paid	Number(8,2)	

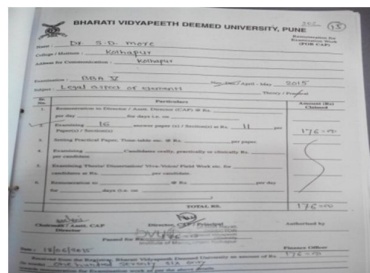


Table 5 Cap Staff Remuneration

Date	Varchar2(200)	Not Null
Name of the Examiner	Varchar2(100)	
Address	Varchar2(100)	
College/Institute	Varchar2(100)	
Date of Work	Number(5)	
Total days	Varchar2(100)	
Travelling from	Varchar2(100)	
Travelling To	Varchar2(100)	

Sr. No.	Name of Staff	Account No.	Amount
1	Dr. Anil K. Dixit	1000	2500
2	Prof. S. S. Nayak	1001	2500
3	Prof. S. S. Nayak	1002	2500
4	Prof. S. S. Nayak	1003	2500
5	Prof. S. S. Nayak	1004	2500
6	Prof. S. S. Nayak	1005	2500
7	Prof. S. S. Nayak	1006	2500
8	Prof. S. S. Nayak	1007	2500
9	Prof. S. S. Nayak	1008	2500
10	Prof. S. S. Nayak	1009	2500
11	Prof. S. S. Nayak	1010	2500
TOTAL			15000

(Rs. Fifteen thousand Four hundred only)

8. Conclusions

As a researcher after studying thoroughly all above literatures, found few gaps and problems for assessment activities where there are several constraints and methods of assessment which hampers the career of the student and the reputation of the Educational Organization. To conclude this research area, that through some recommender system which is based on scientific methods and formulas and mining algorithms. In this study Hybrid Recommender System is used because it captures both collaborative and content based recommender system. Dependence on the assessing regulation for different syllabus patterns of the organization, the proposed system can handle and suggest the appropriate solution to the problems.

9. References

1. Diamond RD. Creating Opportunities in Medical Education and Training: Health Resources and Services Administration Bureau of Health Professions for the General Internal Medicine Faculty Development Project; 2000.
2. Skeff KM, Stratos GA, Mygdal WK, et al. Clinical teaching improvement: past and future for faculty development. *Fam Med.* 1997;29:252-7.
3. Wilkerson L, Irby DM. Strategies for improving teaching practices: a comprehensive approach to faculty development. *Acad Med.* 1998;73:387-96.
4. Clark JM, Houston TK, Kolodner K, Branch WT, Levine RB, Kern DE. Teaching the teachers: National survey of faculty development in departments of medicine of U.S. teaching hospitals. *J Gen Intern Med.* 2004;19:205-14.
5. Skeff KM, Stratos GA, Mygdal W, et al. Faculty development. A resource for clinical teachers. *J Gen Intern Med.* 1997;12 (suppl 2):S56-63.
6. Cole KA, Barker LR, Kolodner K, Williamson PR, Wright SM, Kern DE. Faculty development in teaching skills: an intensive longitudinal model. *Acad Med.* 79:469-80
7. Elliot DL, Skeff KM, Stratos GA. How do you get to the improvement of teaching? A longitudinal faculty development program for medical educators. *Teach Learn Med.* 1999;11:52-7.
8. Teherani A, Hitchcock MA, Nyquist JG. Longitudinal outcomes of an executive-model program for faculty development. *Acad Med.* 2001;76:S68-70.
9. Gruppen LD, Frohna AZ, Anderson RM, Lowe KD. Faculty development for educational leadership and scholarship. *Acad Med.* 2003;78:137-41.
10. Pololi LH, Knight SM, Dennis K, Frankel RM. Helping medical school faculty realize their dreams: an innovative, collaborative mentoring program. *Acad Med.* 2002;77:377-8
11. McGaghie WC, Bogdewic S, Reid A, Arndt JE, Stritter FT, Frey JJ. Outcomes of a faculty development fellowship in family medicine. *Fam Med.* 1990;22:196-200.
12. Marks MB. Academic careers in medical education: perceptions of the effects of a faculty development program. *Acad Med.* 1999;74:S72-4.
13. Salerno SM, O'Malley PG, Pangaro LN, Wheeler GA, Moores LK, Jackson JL. *J Gen Intern Med.* 2002;17:779-87.
14. Stone S, Mazor K, Devaney-O-Neil S, et al. Development and implementation of an objective structured teaching exercise (OSTE) to evaluate improvement in feedback skills following a faculty development workshop. *Teach Learn Med.* 2003;15:7
15. Skeff KM, Stratos GA, Bergen MR. Evaluation of a medical-faculty development program—a comparison of traditional pre/post and retrospective pre/post self-assessment ratings.