

Project report on

“Digitalization of the MCA Department”

A Dissertation submitted in partial fulfilment of the requirement for the award of degree

**MASTER OF COMPUTER APPLICATIONS
OF
VISVESVARAYA TECHNOLOGICAL UNIVERSITY**



By

SHASHANK KATTI

1BY22MC047

Under the Guidance of

Dr. Shivakumara T
Assistant Professor
Department of MCA
BMSIT&M
Bengaluru-560064



Department of Master of Computer Applications

BMS Institute of Technology and Management
(An Autonomous Institution, Affiliated to VTU, Belagavi)
Bengaluru – 560064

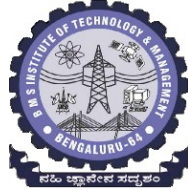
July-2024

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(An Autonomous Institution, Affiliated to VTU, Belagavi)

Bengaluru – 560064

July-2024



CERTIFICATE

This is to certify that the dissertation titled “**Digitalization of the MCA Department**” submitted in partial fulfilment of the requirements for the degree “**Master of Computer Applications**” by Visvesvaraya Technological University is based on an original study and is record of bonafide work carried out by **Shashank Katti** bearing university registration number **1BY22MC047** during the period **April 2024 to July 2024** under our supervision and guidance and that no part of the report has been submitted for the award of any other Degree/ Diploma/ Fellowship or similar title or prizes. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Master of Computer Applications Degree.

Signature of the Internal Guide

Dr. SHIVAKUMARA T

shivakumarat@bmsit.in

Asst. Prof

Department of MCA

BMSIT&M

Bengaluru-560064

Signature of the HOD

Dr. M SRIDEVI

sridevim@bmsit.in

Asst. Prof. & HOD

Department of MCA

BMSIT&M

Bengaluru-560064

Signature of the Principal

Dr. SANJAY H A

principal@bmsit.in

Principal

BMSIT&M

Bengaluru-560064

External Viva-Voice

Name of Examiners

1. -----

2. -----

Signature

Signature

DECLARATION

I Shashank Katti, student of MCA, BMS Institute of Technology and Management, bearing USN 1BY22MC047 hereby declared that project entitled **“Digitalization of the MCA Department”** has been carried out by me under the supervision of guide Dr. Shivakumara T and submitted in the partial fulfilment of the requirements for the award of Degree of Master of Computer Applications by the Visvesvaraya Technological University during the academic year 2023-24. This report has not been submitted to any other Organization/University for any award of degree or certificate.

Place: Bengaluru

Date:

Name: Shashank Katti

USN: 1BY22MC047

ACKNOWLEDGEMENT

The project would not have been complete without remarking and thanking people who guided me, helped me and encouraged me throughout the development of this project. I would like to utilize this opportunity to express gratitude to each person who made it possible for me to complete my project successfully. Thus, I would like to remark few people, whom I want to thank and express sincere gratitude. I convey my truthful gratitude to BMSIT Management for providing a good infrastructure and educational support in lighting our career.

I would like to show my sincere gratitude to our Principal, Dr. Sanjay H A for his kind support in completing this project.

I take this opportunity to thank our Head of Department, Dr. M Sridevi, Assistant Professor, who supported me with her valuable inputs on this project.

I express my deep sense of gratitude to my guide Dr Shivakumara T, Assistant Professor, Department of MCA for his support, encouragement, and valuable inputs throughout the completion of this project.

I take this opportunity to thank Dr. Rajashree M, Associate Professor, BNMIT who supported me with her valuable inputs on this project.

I also thank all my professors and non-teaching staff members, who contributed their help and support directly or indirectly in completing this project. Last but not the least, I thank my parents and friends who stood with me as a moral support and encouraging me in accomplishing this project.

Shashank Katti

1BY22MC047

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(An Autonomous Institution, Affiliated to VTU, Belagavi)

Bengaluru – 560064

Department of MCA



VISION

To develop quality professionals in Computer Applications who can provide sustainable solutions to the societal and industrial needs.

MISSION

Facilitate effective learning environment through quality education, state-of-the-art facilities, and orientation towards research and entrepreneurial skills.

Programme Educational Objectives (PEOs)

PEO 1: Develop innovative IT applications to meet industrial and societal needs.

PEO 2: Adapt themselves to changing IT requirements through life-long learning.

PEO 3: Exhibit leadership skills and advance in their chosen career.

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(An Autonomous Institution, Affiliated to VTU, Belagavi)

Bengaluru – 560064

Department of MCA

Programme Outcomes (POs)

- PO 1:** Apply knowledge of computing fundamentals, computing specialization, mathematics and domain knowledge to provide IT solutions.
- PO 2:** Identify, analyse and solve IT problems using fundamental principles of mathematics and computing sciences.
- PO 3:** Design, Develop and evaluate software solutions to meet societal and environmental concerns.
- PO 4:** Conduct investigations of complex problems using research-based knowledge and methods to provide valid conclusions.
- PO 5:** Select and apply appropriate techniques and modern tools for complex computing activities.
- PO 6:** Understand professional ethics, cyber regulations and responsibilities.
- PO 7:** Involve in life-long learning for continual development as an IT professional.
- PO 8:** Apply and demonstrate computing and management principles to manage projects in multidisciplinary environments by involving in different roles.
- PO 9:** Comprehend & write effective reports and make quality presentations.
- PO 10:** Understand the impact of IT solutions on socio-environmental issues.
- PO 11:** Work collaboratively as a member or leader in multidisciplinary teams.
- PO 12:** Identify potential business opportunities and innovate to create value for the society and seize that opportunity.

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(An Autonomous Institution, Affiliated to VTU, Belagavi)

Bengaluru – 560064

Department of MCA

Course Outcomes (COs)

CO 1: Review the existing literature to identify and formulate the problem in contemporary technologies/ issues related to society/environment which leads to development of IT solution.

CO 2: Analyse the requirements and prepare Software requirement specifications (SRS) document as per IEEE format in consistency with the problem defined.

CO 3: Create models that are consistent with the requirements specified in the SRS.

CO 4: Develop the solution by applying appropriate techniques, software engineering and management principles and modern tools to meet the requirements either as an individual or by involving in team.

CO 5: Verify & validate the data and results to arrive at valid conclusions and communicate the work done effectively in terms of presentations, writing reports and research article as per the format given.

CO 6: Follow ethical principles in all stages of project work by avoiding plagiarism.

CO 7: Articulate the impact of IT solutions developed in the project work with respect to societal, environmental and industrial issues at large.

ABSTRACT

The digitalization of the MCA Department involves the comprehensive integration of hardware and software systems to enhance operational efficiency and user experience. This initiative necessitates the deployment of standard desktops or laptops equipped with modern multicore processors and sufficient RAM, compatible with major operating systems and web browsers. These hardware components ensure a stable platform for accessing the newly developed application, facilitating seamless interaction and data management within the department. On the software front, the project employs a robust stack of technologies tailored to meet the complex demands of Digitalization of MCA Departments. HTML5 provides a structured foundation for organizing Digitalization -related content, while CSS3 enhances the portal's visual appeal and user interface. JavaScript augments frontend functionalities with dynamic features, ensuring real-time updates and interactive user experiences. Backend operations are powered by Django, leveraging Python's capabilities for rapid development and security. A SQLITE database management system ensures reliable storage and retrieval of critical Digitalization data, maintaining transactional integrity and scalability for future needs. Overall, the digitalization effort aims to create a sophisticated Digitalization of MCA Department that not only meets current departmental requirements but also anticipates future scalability and security needs and faster a responsive environment for both staff and students within the MCA Department.

TABLE OF CONTENTS

	Page No.
1. INTRODUCTION	1
1.1.Project description	1
2. LITERATURE SURVEY	2
2.1.Existing and Proposed System	2
2.2.Feasibility study	2
2.2.1. Technical feasibility study	3
2.2.2. Operational feasibility study	3
2.2.3. Economic feasibility study	4
2.3.Tools and Technologies used	4
2.3.1. HTML	4
2.3.2. CSS	4
2.3.3. Python	5
2.3.4. Django	5
2.3.5. SQLite	5
2.4.Hardware and Software requirements	5
3. SOFTWARE REQUIREMENT SPECIFICATION	6
3.1.Users	6
3.1.1. Scope and Objective	6
3.1.2. Assumptions and Dependencies	6
3.2.Functional requirements	6
3.3.Non Functional requirements	7
4. SYSTEM DESIGN	8
4.1.System Architecture	8
4.2.System Perspective	8
4.3.Context diagram	8
5. DETAILED DESIGN	9
5.1.Dataflow diagram	9
5.2.Activity diagram	10
5.3.Use Case diagram	11
5.4.Sequence diagram	11

6. IMPLEMENTATION	12
6.1.Snippet code	12
6.2.Screenshots	32
7. SOFTWARE TESTING	35
7.1.Unit Testing	35
7.2.Automation testing	35
7.3.Test Cases	35
8. CONCLUSION	37
9. FUTURE ENHANCEMENT	38
10. REFERENCES	39
APPENDIX – A	40
APPENDIX – B	41



LIST OF FIGURES

Particulars	Page no
4.2 System Architecture	10
5.1 Dataflow diagram	12
5.2 Activity diagram	12
5.3 Use case diagram	13
5.4. Sequence diagram	13
6.2.1 Registration Image for New Students	31
6.2.2 Search Alumni	32
6.2.3 Search Button – To Search the Students	33
6.2.4 A group of five graduates in blue caps	34
6.2.5 A group of graduates	35
7.4 Test Case Results	37

6.2.5 Test Case Results	37
6.2.6 Conclusion	38

LIST OF TABLES

Particulars	Page no
7.3.1 Test cases	37