Institute of Innovation in Technology & Management, New Delhi

**Academic Circular**

# PROJECT WORK METHODOLOGY: BCA SEMSTER VI STUDENTS

## Objective

1. Students of Semester VI of BCA are to carry out a software project as part of curriculum. At the end of the semester, the students are to submit a written project report to be forwarded to GGSIP University. The objective of this Academic Circular is to standardise the format of submission of the project report and to lay guidelines to conduct the project. **This project work is the training for conceiving an idea, developing application software and writing a Technical Report using theoretically correct technique (s).**

**University Scheme for Project**

2. As per the syllabi of BCA (Paper No BCA-356), students of Semester VI are to write a project report comprising of 5 credits. The project report has two components, viz.

(a) External : **Project** (60 Marks), where a written report is to be

submitted. It involves external viva and presentation.

(b) Internal : **Project** (40 Marks), it includes continuous evaluation

from idea generation to final presentation.

**Scope of the** **Project**

3.It is partly the responsibility of the student to find a relevant topic for his/her project and decide it in consultation with the guide allocated to him/her. The project work shall be an application development in a language/platform that the student has learnt during the previous semesters. It shall be an in-house development. **A team of two students are required to carry out the independent work and submit the report individually. ANY PREVIOUS WORK OR BORROWED REPORT WILL BE SUMMARILY REJECTED AND IN ALL CASES OF REJECTION THE WORK IS TO BE REPEATED AFRESH.**

**Proposal**

4. The project proposal should be about one/two page long and must be submitted in writing to your respective guide. The format of the proposal is attached as **Appendix-A**. **All students are required to submit the proposal in between 3rd January to 6th January 2014**.

**Final Report**

5. The Guidelines for methodology to be adopted for conducting the project is attached as **Appendix-B**. The format of the project report is attached as **Appendix-C**. **All students are to adhere to these guidelines.**

**Schedule of Submissions**

6. Students are required to strictly follow the schedule given on the next page:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Institute of Innovation In Technology and Management** | | | | | | | | |
| **Major Project Internal Evaluation Report BCA 6th Sem (M/E)** | | | | | | | | |
| Enrollment No : | |  | | Project Title : | |  | | |
| Name : | |  | | Modules : | |  | | |
| Class : | |  | | Team Member Name : | |  | | |
| Contact No. | |  | | Platform( hardware & Software) | |  | | |
| **S.No** | **Activity** | **Due Date** | **Completion Date** | **Remarks,  if any** | **Alloted Marks** | **Marks Obt.** | **Students Sign** | **Guide  Sign** |
|
| 1 | Pre-Project briefing | 3-Jan-14 |  |  |  |  |  |  |
| 2 | Submission of Project Title and Team Member Name | 3-6Jan14 |  |  |  |  |  |  |
| 3 | Allocation of Guide | 8-Jan-14 |  |  |  |  |  |  |
| 4 | Meeting with the guide and discussion about synopsis | 9-10jan14 |  |  |  |  |  |  |
| 5 | Submission of draft of Synopsis | 11-Jan-14 |  |  |  |  |  |  |
| 6 | Final Submission of Synopsis and briefing  about chapter1 | 13-14Jan14 |  |  | **1(Total)** |  |  |  |
| 7 | Chapter 1 : Introduction |  |  |  |  |  |  |  |
|  | 1.1 Data Collection | 15-17Jan14 |  |  | 2 |  |  |  |
|  | 1.2 SDLC Model | 18-20Jan14 |  |  | 1.5 |  |  |  |
|  | 1.3 Gantt Chart | 21-22Jan14 |  |  | 1.5 |  |  |  |
|  | Submission of Chapter 1 | 23-27Jan14 |  |  | **5(Total)** |  |  |  |
| 8 | Discussion with the guide  about chapter 2 | 28-31Jan14 |  |  |  |  |  |  |
|  | Draft of Chapter 2 : SRS | 1-3Feb14 |  |  | 3 |  |  |  |
|  | Submission of Chapter 2 | 4-5Feb14 |  |  | **3(Total)** |  |  |  |
| 9 | Discussion with the guide  about chapter 3 | 6-7Feb14 |  |  |  |  |  |  |
|  | Chapter 3 : System Design |  |  |  |  |  |  |  |
|  | 3.1 Block Diagram | 8-10Feb14 |  |  | 1 |  |  |  |
|  | 3.2 Database Design | 11-13Feb14 |  |  | 2 |  |  |  |
|  | 3.3 DFD Level 0 | 14-15Feb14 |  |  | 1 |  |  |  |
|  | 3.4 DFD Level 1 | 17-19Feb14 |  |  | 1 |  |  |  |
|  | 3.5 ERD | 20-24Feb14 |  |  | 2 |  |  |  |
|  | 3.6 Use Case | 25-27Feb14 |  |  | 1 |  |  |  |
|  | 3.7 Sequence Diagram | 28-3Mar14 |  |  | 1 |  |  |  |
|  | 3.8 Site Map | 4-5Mar14 |  |  | 1 |  |  |  |
|  | Submission of Chapter 3 | 6-Mar-14 |  |  | **10(Total)** |  |  |  |
|  | Discussion with the guide  about chapter 4 | 7-8Mar14 |  |  |  |  |  |  |
| 10 | Chapter 4 : Software Development |  |  |  |  |  |  |  |
|  | 4.1 Designing of Front Pages | 10-12Mar14 |  |  | 2 |  |  |  |
|  | 4.2 Database Design | 13-15Mar14 |  |  | 2 |  |  |  |
|  | 4.3 Connectivity | 16-21Mar14 |  |  | 2 |  |  |  |
|  | Submission of Chapter 4 | 22-24Mar14 |  |  | **6(Total)** |  |  |  |
| 11 | Discussion with the guide about chapter 5 | 25-26Mar14 |  |  |  |  |  |  |
|  | Chapter 5 : System Testing |  |  |  |  |  |  |  |
|  | 5.1 Functional Testing | 27-28Mar14 |  |  | 1 |  |  |  |
|  | 5.2 User Interface Testing |  |  |  |  |  |  |  |
|  | 5.3 Navigation Testing | 29Mar-1Apr14 |  |  | 1 |  |  |  |
|  | 5.4 Form Testing | 2-4Apr14 |  |  |  |  |  |
|  | 5.5 Database Testing | 5-7Apr14 |  |  | 1 |  |  |  |
|  | Submission of Chapter 5 | 9-11Apr14 |  |  | **3(Total)** |  |  |  |
| 14 | Chapter 6 : Scope of Improvement, Summary  and Conclusions(Draft Submission) | 12-14Apr14 |  |  | 1 |  |  |  |
|  | Final Submission of Chapter 6 | 13-15Apr14 |  |  | **1(Total)** |  |  |  |
| 15 | Review of References and Appendices | 16-17Apr14 |  |  | **1(Total)** |  |  |  |
|  |  |  |  | **Grand Total** | **30** |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | 10Marks-Presenatation & Viva |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

1. All Students of BCA Semester VI (Prof. Anil Chopra)

2. All IT Faculty Members (DIRECTOR)

**Appendix ‘A’**

(Refer Para 4)

**FORMAT OF THE PROJECT PROPOSAL/SYNOPSIS**

1. **Title of the Project**: The title of the project is to be meaningful and must convey the tools//platform used, e.g.

***“Matrimonial Website Using ASP.net/vb.net/PHP”***

While selecting the language/platform for development students are advised to select it where they have proven (java /.net /PHP are suggested, but students who wish to do projects on other platforms should have undergone certification for the same) strength.

2. **Problem Definition**: Students are required to give brief description of the system that is proposed to be computerised (e.g., in case of Matrimonial Website, your understanding of this system must be explained in brief). In addition students are required to give the exact outcome of the system. i.e., what/which part of the system is proposed to be computerised in the time schedule and available expertise?

3. **Objectives & Scope**: Explain the objectives and the scope of the project.

4. **Methodology**:

(a) Explain the methodology for data collection.

(b) Explain the technique (s) & tools/platform proposed to be used for systems analysis, design, testing and development of software.

(c) Project Planning

**NOTE: ONCE THE TITLE, LANGUAGE/PLATFORM ARE FIXED THEY CANNOT BE CHANGED.**

Appendix-B

(Refer Para 5)

**METHODOLOGY FOR THE PROJECT WORK**

Chapter-1: Introduction

Following aspects need to be covered in this chapter:

**1.1 Brief Description of the System under Study**: Describe the system under study in details. It must clearly bring out how the existing information system works and achieves the task.

**1.2 About the proposed System:** Explain the Aim, Objectives and Scope for developing information system vis-à-vis the referenced organisation. For the purpose of this project the organisation could be a virtual set up. Clearly spell out what is proposes to be done in the project

**1.3 Methodology used for Analysis, Design & Development:** Explain which methodology you will adopt for analysis and design for example System Development Life Cycle (SDLC) approach or its variant, Object Oriented Method, Structured analysis and development method or prototype method. You may follow a mixed methodology and tools; however, you should clearly mention the steps and tools and techniques that you are going to follow in the current project with brief justification.

**1.4 Methodology used for Data Collection:** To carryout systems analysis and establish user requirements students can use either **primary data** (through a questionnaire, interview or observation) or **secondary data** (through document analysis or published data) or both. In either case, the method and source used must be mentioned with proper references.

**1.5 System Requirement Tools:** Explain the software and hardware tools and platform that you proposed to use in the project.

**1.6 Project Planning:** Give the plan of distribution of work giving name of task/activity, precedence/order (date-wise) in which these are performed.

**Chapter-2: Systems Requirement Specifications**

**System Requirement Submission Report (As per IEEE Format): Prepare a** SRS document as per IEEE standard notation for implementing the user requirement of the proposed system.

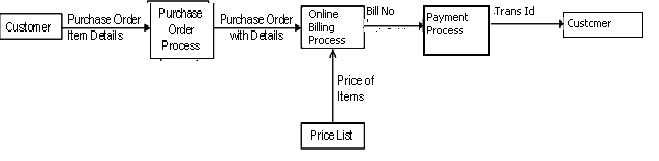
**NOTE: IN THE ‘TRAINING ENVIRONMENT’ YOUR GUIDE WILL INVARIABLY ACT AS THE USER OF SYSTEM.**

## Chapter-3: Systems Design

This phase of the project requires the complete study of the system before database design and Interface Design could be formalised. Following activities are to be undertaken in this phase:

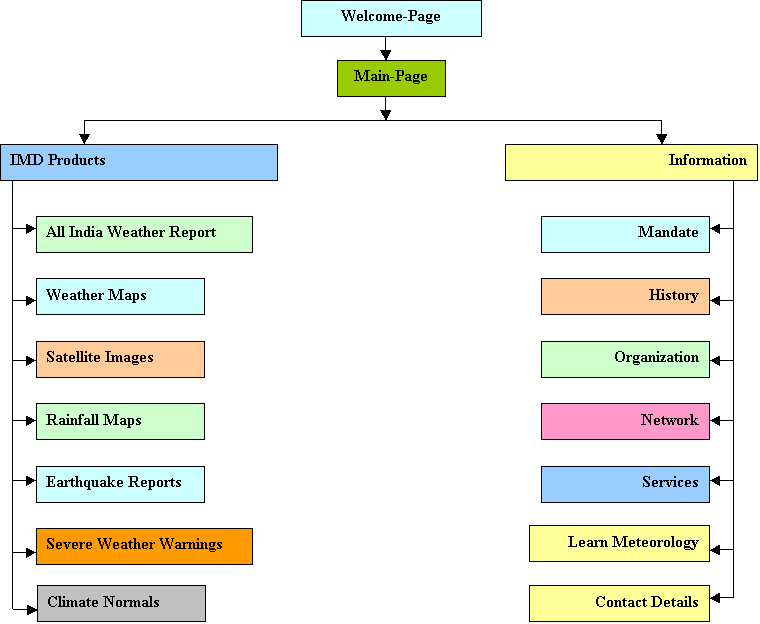
**Description of Information System**:

1. **Overall Design of the System**: Describe the purpose and functioning of the proposed website under study in narrative form in details. Draw a functional ‘Block Diagram’ to show generic input, output and connectivity/flows between various entities of the system. It must also include external/outside entities that interact with the system to identify external source/sink of data/information. As an example, a block diagram for Online Bill Payment System of a Shopping Mart is shown in Figure-1:



**Figure-1: Functional Diagram of Online Billing System**

1. **Physical Design**: Draw Use case, Activity and sequence diagram. Explain the linkages between web pages using **Site Map** . A site map is a visual or textually organized model of a Web site's content that allows the users to navigate through the site to find the required information.



**Figure2-: Site Map**

**c) Database Design:** Create Database File (Attach relational/ER diagram of database).

1. Table (s) designs for back-end database - it is to be presented as per example given in Table-1.

**Table-1: Database Description**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **FILE NAME: STOCK LIST LINKED TO PURCHASE ORDER PROCESS** | | | | |
| **Field Name** | **Field Code** | **Field Type** | **Size (No of Characters)** | **Description** |
| Item Code | Item\_Code | Alphanumeric | 10 | Unique code of each item |
| Item Name | Item\_Name | Alphabetic | 20 | Name of item |
| Quantity | Qty | Numeric | 10 | Quantity in stock |

1. Webpage(s) design for data entry should be discussed before implementation as shown in Table-2. Each project should have at least one data entry page.

**Table-2: Webpage Description**

|  |  |  |
| --- | --- | --- |
| **INPUT NAME: PURCHASE ORDER FORM (FOR PURCHASE ORDER PROCESS)** | | |
| **Name of Label in the Form** | **Description/Purpose** | **Validation Required** |
| Date | Date of Purchase Order | In the format ddmmyyyy |
| Item Code | Unique code of each item | Alphanumeric (size 10) |
| Item Name | Name of item | Alphabetic (Size 20) |
| Quantity | Quantity ordered | Numeric (Size 10) |

**(d) Interface Design**:

(i) **Output Design**: Screen & Print layouts, i.e., the format and contents (fields) to be included – along with the file to which it is linked.

(ii) **Input (Form or Screen) Design**: For keying-in data. Give fields, format, codes to be used, validation (error detection) requirements & the file to which it is linked.

**NOTE: YOU MUST INCLUDE SOME VALIDATION CHECKS. SECURITY AND CONTROL FEATURES (ACCESS RIGHTS) COULD BE ADDITIONAL.**

**Chapter-4: Systems Development, Testing & Implementation**

**Purpose**: To carry out the activities of writing actual programmes, their debugging, testing and validation. Following activities are to be carried out:

(a) **Program Development**: Develop the programs using the tools/platform specified in Chapter-1 (both back-end and front-end). Attach program codes, screen prints of GUI and ‘Actual Output Reports’ using the real data. Codes may be attached as appendix & on CD.

(b) **Testing & Debugging**: Use *Past Data* to check whether the programs work as intended by you or you can use dummy data.

(c) **Implementation:** Strategy used in implementation *if any*

**Test Report format**

**Test case ID 1:-**

* Input given
* Expected output
* Actual output

**NOTE: INCLUDE THE TEST REPORTS IN THE PROJECT TO SHOW THE ERRORS, IF ANY, AND A BRIEF WRITE-UP ON THEIR RECTIFICATION.**

**Chapter-5: Scope of Improvement, Summary and Conclusions**

Describe what has been achieved vis-à-vis objectives & scope of the project. Is the application developed by you ready for use or some bugs remain? Describe limitations and scope for future development/improvement.

**Appendix-C**

(Refer Para 5)

**FORMAT OF THE PROJECT REPORT**

## Format

1. The format for compilation of final report is given below:

* + 1. Title Page
    2. Certificate
    3. Acknowledgements
    4. Abstract
    5. List of Tables
    6. List of Figures
    7. List of Symbols
    8. Table of Contents
    9. Body of the Project Report
    10. References/Bibliography
    11. Appendices

## Title Page

2. The format of the title page is attached as **Annexure-I**.

## Certificate

1. The format of the certificate is attached as **Annexure-II**. A certificate by the student, guide and duly authenticated by the Director/Project Coordinator is to be attached.

## Acknowledgement

4. In the “Acknowledgement” page, the writer recognises his indebtedness for guidance and assistance by the guide and other members of the faculty. Courtesy demands that he/she also recognises specific contributions by other persons or institutions such as libraries and research foundations. Acknowledgements should be expressed simply, tastefully, and tactfully **duly signed above the name.**

## Abstract

5.A abstract is a brief or condensed summary of the project for higher-level management positions. It should be about 1 page. It should comprise problem definition, brief description of the system, objectives & scope of the project.

**Contents**

6. The format of ‘Table of Contents’ and list of Tables/Figures/Symbols is attached as **Annexure-III**.

###### Body of the Project Report: Guidelines for Project Report Writing

7. The guidelines for the Body of the Project Report (methodology) are detailed in **Appendix-B**. Following aspects must be adhered to:

(a) **Page Size**: Good quality white A4 size executive bond paper should be used for typing and duplication.

(b) **Chapter/Para Numbering**: The chapters are to be numbered as Chapter-1, Chapter-2 etc. The heading/title of the chapter is to appear below the chapter number in uppercase. Paragraphs are to be numbered as 1,2,3 etc in every chapter separately. Sub-paras are to be numbered as 1.1, 1.2, 1.3----, 2.1, 2.2, 2.3-----etc. Sub-sub paras are to be numbered as 1.11, 1.12, 1.13, 2.11, 2.12, 2.13 etc.

(c) **Page Specifications:**

(i) Left Margin : 1.25 inch

(ii) Right Margin : 1.25 inch

(iii) Top Margin : 1 inch

(iv) Bottom Margin : 1 inch

(d) **Page Numbers:**  All text pages starting from Body of the Project Report as well as program source code listings should be numbered at the **bottom center** of the pages.

(e) **Normal Body Text:**

(i) **Font Size:** 12, Times New Roman, Double Spacing, Single Side Writing.

(ii) **Paragraphs Heading Font Size:** 12, Times New Roman, Underlined

1. **Page/Title Font Size**: 14

(f) **Table and Figure Number**: Figure numbers are to be written at the **bottom** of the figure and table numbers at the **top** of the table as given below:

(i) **Table 1.1: File Design for Employee Record**

(ii) **Figure 1.1: Data Flow Diagram**

(g) **Binding & Color Code of the Report**:

(i) Hard Bound Report

(ii) Background of the cover page - Brown

1. Letters in Silver White

**References/Bibliography**

8. Examples are given below:

1. D.L. Carney, J.I. Cochran, “The 5ESS Switching System: Architectural Overview,” *AT&T Technical Journal*, vol. **64,** no. **6,** July-August 1985, pp. 1339-1356.

2. A. Stevens, *C++ Database Development*, MIS Press, New York, 1992, p. 34.

3. J. Martin, *Computer Database Organization*, Prentice-Hall, Englewood Cliffs, NJ, 1977, p. 53.

4. <http://www.htmldog.com/guides/html/beginner/>

5. <https://www.ece.cmu.edu/~koopman/des_s99/sw_testing/>

## Appendices

9. The appendices are to be attached at the end of the report and to be numbered as Appendix-A, Appendix-B etc right justified at the top of the page. Below the word Appendix write in parenthesis “Refer Para No\_\_”. The para number is to be the number in the body of text where the reference of appendix is given. An appendix may have annexure (s). If there are annexure, these are to be attached immediately after the said appendix. The annexures are to be numbered as Annexure-I, Annexure-II etc.

**Annexure-I**

### Title of the Project Report

(Font size = 18)

*Submitted in partial fulfillment of the requirements*

*for the award of the degree of*

**Bachelor of Computer Applications (BCA)**

To

Guru Gobind Singh Indraprastha University, Delhi

Guide: Submitted by:

(Guide Name) (Student name)

Designation Roll No.:

Institute of Innovation in Technology & Management

New Delhi – 1100 58

**Batch (2011-2014)**

Annexure-II

##### Certificate

We, 1. (Name & Roll No) & 2. (Name & Roll No) certify that the Major Project Report (BCA-356) entitled “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” is done by us and it is an authentic work carried out by us at Institute of Innovation in Technology & Management. The matter embodied in this project work has not been submitted earlier for the award of any degree or diploma to the best of my knowledge and belief.

1. Signature of the Student 2. Signature of the Student

Date:

Certified that the Major Project Report (BCA-356) entitled “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”

done by the above students is completed under my guidance.

Signature of the Guide

Date:

Name of the Guide:

Designation:

Address:

Institute of Innovation in Information Technology & Management, New Delhi-110058

Countersigned

Director/Project Coordinator

**Annexure-III**

**FORMAT FOR TABLE OF CONTENTS**

**TABLE OF CONTENTS**

|  |  |  |
| --- | --- | --- |
| **S No** | **Topic** | **Page No** |
| 1 | Certificate | - |
| 2 | Acknowledgements |  |
| 3 | Abstract | - |
| 4 | List of Tables | - |
| 5 | List of Figures |  |
| 6 | List of Symbols |  |
| 7 | Chapter-1: Introduction |  |
|  | 1.1 Existing System |  |
|  | 1.2 Problem with Existing System |  |
|  | 1.3 Proposed System |  |
|  | 1.3.1 Aim of the system |  |
|  | 1.3.2 Objective of the system |  |
|  | 1.3.3 Scope of the system |  |
|  | 1.4 Methodology of Data Collection |  |
|  | 1.4.1 Primary Data Collection |  |
|  | 1.4.2 Secdonary Data Collection |  |
|  | 1.5 Methodolgy of System Design |  |
|  | 1.6 Implication of System Development Life Cycle (SDLC) |  |
|  | 1.7 System Requirements Tools |  |
|  | 1.8 Project Planning Gantt Chart |  |
| 8 | Chapter-2: System Requirements Analysis |  |
|  | 2.1 System Overview |  |
|  | 2.2 Identification of actors and their roles in the system |  |
|  | 2.3 System Requirements Specification (SRS) |  |
| 9 | Chapter-3: System Design |  |
|  | 3.1 Block Diagram |  |
|  | 3.2 Database Description |  |
|  | 3.3 Data Flow Diagram (Context level) |  |
|  | 3.4 Data Flow Diagram (Level-1) |  |
|  | 3.5 Entity RelationshipDiagram |  |
|  | 3.6 Use Case Diagram |  |
|  | 3.7 Sequence Diagram |  |
|  | 3.8 Site Map |  |
| 10 | Chapter-4: System Development & Implementation |  |
|  | 4.1 Webpage Print Layout |  |
|  | 4.2 Coding Samples |  |
|  | 4.3 Database Print Layout |  |
| 11 | Chapter-5: System Testing |  |
|  | 5.1 Functional Testing |  |
|  | 5.2 User Interface Testing |  |
|  | 5.2.1 Navigation testing |  |
|  | 5.2.2 Form testing |  |
|  | 5.3 Databasel Testing |  |
| 12 | Chapter-6: Scope of Improvement, Summary and Conclusions |  |
|  | 6.1 System Summary (Achieved Objective of System) |  |
|  | 6.2 Future Scope and Improvisation |  |
|  | 6.3 Conclusion |  |
|  | References / Bibliography |  |
|  | Appendices |  |

**FORMAT FOR LIST OF TABLES/FIGURES/ SYMBOLS**

**LIST OF TABLES**

|  |  |  |
| --- | --- | --- |
| **Table No** | **Title** | **Page No** |
| 1.1 | File Design for Employee Record |  |
| 2.1 | File Design for Personal Details |  |

**LIST OF FIGURES**

|  |  |  |
| --- | --- | --- |
| **Figure No** | **Title** | **Page No** |
| 1.1 | Data Flow Diagram |  |
| 2.1 | Input Screen for Data Entry |  |

**LIST OF SYMBOLS**

|  |  |  |
| --- | --- | --- |
| **S No** | **Symbol** | **Nomenclature & Meaning** |
| 1. | **Σ** | Sigma (Summation) |
| 2. | **kbps** | Kilo bits per second |