**Integrated Project Guidelines**

1. The project statement should be capable of engaging students in a meaningful ‘**Engineering Project**’ for the full stipulated time of 10-12 weeks (48 hours-60 hours) (approximately) starting from 12th Feb 2024.
2. The integrated project will be considered a full-fledged course of **2 credits.**
3. Team can choose problem for project from given problem statement list, or you can choose any latest real problem, or you can do research work on specific research topic under guidance of your faculty in charge.
4. A student group can opt for projects in the following areas which fulfil the minimum requirement of a valid engineering project as per the specialization track opted.

* Students of the same group can form team. Each team consists of 4 students.
* Student will submit the IP Synopsis to their respective Faculty in charge.
* The faculty in charge will provide the exact time of the evaluation; team members need to approach the faculty in charge for the synopsis submission and for other evaluations.
* In case of not following the deadlines of the evaluation, a student will be considered as absent for that evaluation.
* Students need to follow the instructions given by the faculty in charge.
* Faculty in charges of different groups.

|  |  |  |
| --- | --- | --- |
| **SNo** | **IP Faculty-in-Charges** | **Groups** |
| 1 | Dr. Righa Tandon | 13, 33 |
| 2 | Dr. Damandeep | 8, 35 |
| 3 | Dr. Parul | 9 |
| 4 | Dr. Deepak Ahlawat | 2, 3 |
| 5 | Dr. Priyanka Gupta | 34 |
| 6 | Dr. Suhasini | 5, 14 |
| 7 | Dr. Manjulata | 6, 10 |
| 8 | Dr. Sanjeev Kumar | 12 |
| 9 | Dr. Chaitanya Singla | 16 |
| 10 | Ms. Shivani Wadhwa | 15 |
| 11 | Dr. Ritu Rathi | 1 |
| 12 | Dr Geetanjali | 7, 11 |
| 13 | Dr Harveen Kaur | 4 |

1. Evaluation Scheme & Components:

|  |  |  |
| --- | --- | --- |
| **Evaluation Component** | **Total Marks** | **Date for evaluation (Tentative schedule)** |
| Synopsis | 10 marks | 04th-08th March, 2024 |
| Internal Evaluation | Phase 1 Evaluation - 10 marks | 01st-05th April 2024 |
| Phase 2 Evaluation - 10 marks | 22nd-27th April 2024 |
| Phase 3 Evaluation - 10 marks | 13th – 18th May 2024 |
| Final Evaluation Viva | 60 marks | 27th – 31st May 2024 |

1. The Specific Formats are attached in Annexure -I, Annexure II and Annexure III. Report format is attached. The Synopsis and Project Report and evaluation for every group are to be submitted to the Faculty In-charge as per the deadlines mentioned. The phase 1, 2, 3 targets should be mentioned in the Synopsis. The phase 1, 2, 3 evaluations can be in the form of PPT Presentation.
2. Annexure -I --- For Synopsis

Annexure II --- For Project Final Report

Annexure III --- For Research Proposal

**Annexure I (For Project development)**

1. **Project Statement:**
2. **Approximate duration (in hours) to complete the project:**
3. **Proposed Project In charge:**
4. **Team Members along with roll no’s:**
5. **Check Points:**
6. Does the project statement result in a product? If yes, what type of product?
7. If it is a product, can a prototype be made, if not, what is it, which we can produce that our teachers can evaluate.
8. Does the project statement use multiple concepts to achieve the outcome? (yes/no)
9. Does it have enough for our team members to do sufficient amount of work? (yes / no)
10. **Technical Nodes** (*add more rows in the table below, if required)*

|  |  |
| --- | --- |
| Subject / Area / Topic | Technical Nodes |
|  |  |
|  |  |

1. **Prerequisites (in terms of knowledge, concepts and material) for doing the Project:**
2. **Material that may be required to make the project and where it might be available**
3. **What could the total cost of the project?**
4. **Resources available to us:**

**PROJECT SYNOPSIS REPORT**

**ON**

**<PROJECT TITLE>**

**SUBMITTED**

**TO**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**FOR**

**INTEGRATED PROJECT (CS203)**

**Submitted By:**

**Name(s):**

**University Roll No(s).:**

**Semester:**

**Session:**

**Index**

|  |  |  |
| --- | --- | --- |
| **Sr. no** | **Topic** | **Page No** |
| 1 | Problem Statement |  |
| 2 | Title of project |  |
| 3 | Objective & Key Learning’s |  |
| 4 | Options available to execute the project |  |
| 5 | Advantages/ Disadvantages |  |
| 6 | References |  |

**Problem Statement**

Consider an unbounded (infinite) buffer where producer writes data to buffer and Consumer reads data from the buffer. There is a need to coordinate the activities of depositing and retrieval performed by producers and consumers respectively. Develop an application to provide a bounded-buffer solution to the client-server environment.

**Title of project:**

To develop a Bounded-buffer solution for client-server environment.

**Objective & Key Learnings:**

* To enable the students to understand the concept of sharing of data between client and server machine without loss of any information.
* To ensure that the producer won't try to add data into the buffer if it's full and that the consumer won't try to remove data from an empty buffer.

**REFERENCES**

1. Krit Somkantha, Nipon Theera-Umpo, “Boundary Detection in Medical Images Using Edge Following Algorithm Based on Intensity Gradient and Texture Gradient Features”.
2. H.Chidiac, D.Ziou, “Classification of Image Edges”,Vision Interface’99, Troise-Rivieres, Canada, 1999.pp. 17-24.
3. Q.Ji, R.M.Haralick, “Quantitative Evaluation of Edge Detectors using the Minimum Kernel Variance Criterion”, ICIP 99. IEEE International Conference on Image Processing volume: 2, 1999, pp.705-709
4. M.Woodhall, C.Linquist, “ New Edge Detection Algorithms Based on Adaptive Estimation Filters”, Conference Record of the 31st Asilomar IEEE Conference on Signals Systems & Computers, volume: 2, 1997, pp. 1695-1699
5. C. Harris and M.J. Stephens. A combined corner and edge detector. In Alvey Vision Conference, pages 147–152, 1988.
6. C. Schmid, R. Mohr, and C. Bauckhage. Evaluation of interest point detectors. International Journal of Computer Vision, 37(2):151–172, June 2000.
7. Thomas B. Moeslund. Image and Video Processing. August 2008.

**Annexure II**

**MANUAL FOR PREPARATION OF INTEGRATED PROJECT REPORT**

**(For Project development)**

**(Prescribed Format and Specifications)**

**GENERAL INTRODUCTION:**

This document aims to guide students in preparation of final project report of Integrated Project process. It contains information on the stages of the project, indicating when reports are due, how to get something made up in the work shop and most importantly how to write concise and legible documents with good literary style, presentation and layout. It is important to note that each report must be original. Remember irrelevant information and trivial statements are of no value. It is important not to underestimate the amount of time it takes to write the report.

The manual is intended to provide broad guidelines to in the preparation of the integrated project report. In general, the project report, in an organized and scholarly fashion, is an account of original work of the students leading to techniques or correlation of facts already known (analytical, experimental, hardware oriented etc) and demonstrating definite contribution to the advancement of knowledge and the student ability to present the findings in an appropriate manner with actual accomplishments of the work plainly stated and honestly appraised.

Project reports generally follow the typical structure of scientific and technical research reports: Introduction, Methods, Results, Conclusions, and Recommendations. Although other formats are acceptable, most readers anticipate this format and get their bearings most quickly when it is followed. The following template adopts this standard organizational structure. The headings are those recommended for your own Project Report, but you may have to make occasional deviations from this template to adapt to the needs of your own project.

**NUMBER OF COPIES TO BE SUBMITTED FOR EVALUATION:**

The candidate’s group is required to prepare one copy of the report, which he/she is required to submit to the IP incharge. The report must be prepared strictly in accordance with the specifications set out below.

**ARRANGEMENT OF CONTENTS OF PROJECT REPORT:**

The sequence in which the training report material should be arranged and bound should be as follows:

1. Cover page (sample copy attached as annexure-A).
2. Title page (sample copy attached as annexure-B).
3. Certificate (sample copy attached as annexure-C).
4. Declaration (sample copy attached as annexure-D)
5. Abstract (A brief summary about the project with keywords)
6. Acknowledgment (sample copy attached as annexure-E)
7. Contents with title & subtitle, page no. (Breakup of sections according to explanation is advised).
8. List of Figures
9. List of Tables (if any)
10. Notations(if any)
11. Executive summary (with Chapters & sections as annexure-F)
12. Appendix / Annexure/References\*( if any)

**TEXT PROCESSING INFORMATION**

It is important to note that type format of all reports should be uniform. So there is a need to follow some guidelines on typesetting and other aspects. Some of such guidelines are given below.

1. The report shall be typed on 75 or 80 gr. /m2 white paper. Size of paper shall be A4.
2. Only Laser printer and Ink Jet printer outputs are acceptable to maintain clear and high contrast constant density copy throughout the report.
3. As a character font, one should use Times New Roman, Courier, Helvetica or equivalent which are available in most word processors. The font size must be 12 point in the text and at least 8 point in the figures.
4. Whenever titles and headings are to be centered the centering shall be such that 112 mm. from the left edge of the paper or 98 mm. for the right edge of the paper is the center point of the title or heading.
5. Margins of pages shall conform to the following specifications.
   1. Left margin - 3 1/2 cm. from edge of paper.
   2. Right margin - 2 cm. from edge of paper.
   3. Top margin - 3 1/2cm. from edge of paper.
   4. Bottom margin - 2 cm. from edge of paper.

The above margins shall be observed on charts, graphs, tables, and drawings. Folded papers will not be accepted unless there is absolutely no other way for the material to be presented.

1. Spacing of the text material shall be 1.5 with the following exceptions:
   1. Footnotes - single spacing
   2. Long biographical quotes - single spacing
   3. Extensive quotations - single spacing and indented eight (8) spaces relative to the text

material.

1. Headings used in the report shall conform to the following rules:
   1. Chapter Headings - CHAPTER 1, CHAPTER 2, CHAPTER 3 etc.
      * 1. Must begin a new page and be centered using the Font Size 18 with Bold Fold. Omit period at the end of the heading.
        2. Must be typed in upper case letters.
        3. Chapter headings are to be titled names that reflect content of the text that follows.
   2. Second Headings - 2.1, 2.2, 2.3, etc.
      1. Must be towards left margin and be typed in capital and lower case letters; i.e., the first letter of each word except conjunctions, prepositions, and articles must be a capital letter. Omit period at the end of heading.
      2. The letter designation of the heading shall be followed by a period and two blank spaces.
      3. Must be three spaces below preceding text and two spaces ahead of succeeding text.
      4. Font Size to be used is 14 with Bold Face.
      5. In case it is found that first line of the succeeding text starts from the next page, then this heading should start from the next page using page break.
2. **Figures and Tables**: Ideally, every result claimed in the text should be documented with data,usually data presented in tables or figures. If there are no data provided to support a given statement of result or observation, one should consider adding more data, or deleting the unsupported "observation." Examine figure(s) or table(s) pertaining to the result(s).

Authors should assess whether:

1. The data support the textual statement
2. The data contradict the textual statement
3. The data are insufficient to prove

The actual figures and tables should be embedded/inserted in the text, generally on the page following the page where the figure/table is first cited in the text. All figures should be numbered and cited consecutively in the text as Figure 2.1, Figure 2.2, to indicate the first and second figures in Chapter 2 respectively. Similarly it is the case with tables such as Table 3.1, Table 3.2, etc. A caption for each figure and table is to be given with proper citation about reference, data sources, etc. and by highlighting the key findings. One should include an index figure (map) showing and naming all locations discussed in the report. Author is always encouraged to make his own figures, including cartoons, schematics or sketches that illustrate the derived processes. He should see all his figures keeping in mind that:

1. Each figure is self-explanatory.
2. Axes of figures are labeled and the units, if used, are indicated.
3. Uncertainty is shown in data with error bars.
4. Redundant data ink must be eliminated.
5. An effort has to be made to increase data density by eliminating non-data bearing space.
6. Whether data is sparse set that could better be expressed as a table.
7. Whether the figure distorts the data in any way.
8. Whether the data are presented in context.

Figures should be oriented vertically, in portrait mode, wherever possible. If they must be oriented horizontally, in landscape mode, so that one can read them from the right, not from the left, where the binding will be.

**9. Pagination:** Each page in the report or dissertation is expected to bear a number. Only one side ofthe paper may be used. The following plan should be used exclusively:

a. The preliminary section, including the title page; copyright page, if any; foreword, preface, or acknowledgements; table of contents; etc., should be numbered, using lower case Roman Numerals, e.g., i, ii, iii, etc. The title page counts as Page i, but the number does not appear. The sequence of the

preliminary section is as follows:

Title Page........................................................ Page i - number does not appear

Declaration...................................................... Page ii

Certificate........................................................ Page iii

Acknowledgements......................................... Page iv

Abstract........................................................... Page v

Table of Contents........................................... Page vi

List of Tables.................................................. Page vii

List of Figures................................................. Page viii

List of Symbols.............................................. Page ix

For the remainder of the report, numbers are used. Each page must be numbered. Page numbers are to be placed 2 centimeters from the top and right-hand margins on the pages. All pages for illustrations, tables, appendices, bibliography, etc. are included. Use of suffixes, such as 25a, 25b ...is not allowed. The numbering in the main body should begin with Page 1 and run consecutively to the last page. No punctuation, such as dash or a period, should accompany the page number.

1. **Size of Report**: The project report should be complete in all respect. However it is expected thatthe number of pages in the report will range 40-50 pages of typed matter reckoned from the First page of Chapter 1 to the last page of the Appendix.
2. **Binding Specifications**:

The project must be Black Cardboard Bounded with Lamination Sheet. (Spiral binding and other forms of binding will not be accepted)

**PREPARATION FORMAT:**

This section explains the purpose and contents of each section of the Report.

**Cover**

The Cover should contain the title of the project, followed by the date of submission, and then followed by the names and affiliations of the submitters, all of which should be centered in the page. The Cover may be printed on colored paper of slightly heavier stock.

**Title Page**

Use a format similar to those used for project update presentations.

**Abstract**

The Abstract is a succinct statement that comprises the essential content of the Project Report. It will be technical in nature, intended for reading by an engineer or computer scientist. The Abstract summarizes the results of the design project without explaining why design decisions were made, or justifying the findings.

**Acknowledgments**

The Acknowledgments should recognize the assistance given by the liaison at the sponsoring company, the project faculty advisor, the institutional support, and any other individuals who rendered significant assistance.

**Table of Contents, List of Figures, List of Tables**

The Table of Contents, List of Figures, and List of Tables should be self-explanatory, and most modern word processors can generate them for you.

**INTRODUCTION**

**Statement of the Problem**

This section can usually be reproduced directly from your proposal, completed at the end of fall term. The purpose of this section is to listen to the needs of the sponsoring company and to show that you understand the problem from their perspective.

**Background**

This section, too, can be taken directly from your proposal unless new or revised information gives you a reason to change it.

**Purpose of Project and Overview of Project Report**

Summarize the purpose of your project in one or two sentences: “The purpose of this project was to develop an effective means of solving problem ABC by designing device XYZ.” Your purpose statement is simply an expansion of your title into sentence format. Following your purpose statement, give a

statement which describes the shape or structure of the rest of the Project Report. When readers can anticipate the shape of what is coming they can devote full attention to the content. This section follows the advice “Lay out the whole before presenting the parts.”

**METHODS AND DESIGN APPROACH**

Your purpose in this section is to show the logic in the way that your team attacked the problem. Your goal here is to explain the sequence of problem-solving steps that your team went through. Show your clear engineering thinking when describing your methods.

**RESULTS**

The purpose of this section is to describe in detail the actual device or product you produced. The number of subheadings of this section depends on the complexity of your product and on the kinds of information that you think your sponsoring company will need to know. Group your explanations by category and give each category a clarifying heading. Here are some typical headings that will fit most projects.

**Specifications**

Tell what your device does at what levels of precision.

**Construction Methods**

Explain how your device is made, what its materials are, etc.

**Operation**

Explain how your device works; make your instructions clear to a new user.

**Testing and Calibration**

How did you test your device and how did you calibrate it?

**External Constraints**

The report must address economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political constraints of the project.

**CONCLUSIONS**

From a managerial standpoint, this is probably the most important section of your Project Report. Technical and business managers frequently read this section of the Project Report first even though it comes near the end of the document! Your goal here is to evaluate your original criteria. How well does your product actually work? Does it solve the problem that the company wanted solved? Be candid and honest here. What are the weaknesses and limitations of your product? What parts of the original problem were more difficult than anticipated? What hopes for your solution didn’t turn out?

In short, this section may say, “We solved part of your problem but not other parts,” or “Our solution finally didn’t work, and we didn’t solve your problem at all.”

The people who read the Conclusions and Recommendations sections of your Project Report are power people inside their company! In light of your conclusions, what recommendations do you have for the company? Should they begin immediate production of your prototype? Should they do further testing of your prototype? Should they put out an RFP for further research? Should they do a market study? Should they look for more cost effective ways of building a device similar to your prototype? Much of your future reputation as a design team rests on recommendations.

**REFERENCES**

Follow the Project Proposal guidelines.

**APPENDICES**

Appendices can follow where you did in the original proposal with suggestions from your faculty advisor.

**(Annexure A)**

**INTEGRATED PROJECT REPORT**

**On**

**NAME OF TOPIC**

Submitted in partial fulfilment of the requirement for the

Course Integrated Project (CS 203) of

**COMPUTER SCIENCE AND ENGINEERING**

**B.E. Batch-2021**

**in**

**JUNE-202****4**

|  |  |
| --- | --- |
| **Under the Guidance of** | **Submitted By** |
| **Name of the Project Guide** | **Name of the Student** |
| **Designation of the Project Guide** | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |
|  | **Name of the Student** |
|  | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |
|  | **Name of the Student** |
|  | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |
|  | **Name of the Student** |
|  | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**CHITKARA UNIVERSITY**

**PUNJAB**

**(Annexure B)**

**INTEGRATED PROJECT REPORT**

**On**

**NAME OF TOPIC**

Submitted in partial fulfilment of the requirement for the

Course Integrated Project (CS 203) of

**COMPUTER SCIENCE AND ENGINEERING**

**B.E. Batch-2021**

**in**

**JUNE-202****4**

|  |  |
| --- | --- |
| **Under the Guidance of** | **Submitted By** |
| **Name of the Project Guide** | **Name of the Student** |
| **Designation of the Project Guide** | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |
|  | **Name of the Student** |
|  | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |
|  | **Name of the Student** |
|  | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |
|  | **Name of the Student** |
|  | **Roll. No. \_\_\_\_\_\_\_\_\_\_** |

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**CHITKARA UNIVERSITY**

**PUNJAB**

**(Annexure –C)**

**CERTIFICATE**

*(16 Times New Roman)*

This is to be certified that the project entitled “Title of the Major Project” has been submitted for the Bachelor of Computer Science Engineering at Chitkara University, Punjab during the academic semester January 2024- May-2024 is a bonafide piece of project work carried out by “Name’s and roll no’s of the students group” towards the partial fulfillment for the award of the course Integrated Project (CS 203) under the guidance of “Project Guide Name” and supervision.

**Sign. of Project Guide** :

Name of Project Guide

(Designation & Department)

**(Annexure –D)**

**CANDIDATE’S DECLARATION**

*(16 Times New Roman)*

We, **NAME AND Roll No’s OF THE STUDENTS GROUP,** B.E.-2021 of the Chitkara University, Punjab hereby declare that the Integrated Project Report entitled **“TITLE OF** **PROJECT”** is an original work and data provided in the study is authentic to the best of our knowledge. This report has not been submitted to any other Institute for the award of any other course.

|  |  |  |
| --- | --- | --- |
| **Sign. of Student 1** | **Sign. of Student 2** | **Sign. of Student 3** |
| Name of the Student | Name of the Student | Name of the Student |
| ID No……………. | ID No…………….. | ID No…………… |

**Place:**

**Date:**

**(Annexure -E)**

**ACKNOWLEDGEMENT**

*(16 Times New Roman)*

It is our pleasure to be indebted to various people, who directly or indirectly contributed in the development of this work and who influenced my thinking, behavior and acts during the course of study.

We express our sincere gratitude to all for providing me an opportunity to undergo Integrated Project as the part of the curriculum.

We are thankful to “Project Guide Name” for his support, cooperation, and motivation provided to us during the training for constant inspiration, presence and blessings.

We also extend our sincere appreciation to ***“Project Guide name and External Guide*** ***name (if any)*** who provided his valuable suggestions and precious time in accomplishing our Integrated project report.

Lastly, We would like to thank the almighty and our parents for their moral support and friends with whom we shared our day-to day experience and received lots of suggestions that improve our quality of work.

|  |  |  |
| --- | --- | --- |
| **Name of the Student** | **Name of the Student** | **Name of the Student** |
| **ID No…………….** | **ID No……………..** | **ID No……………** |

**(Annexure –F)**

**The report must consist of following chapters:**

1. **Abstract/Keywords**
2. **Introduction to the project** 
   1. **Background**
   2. **Problem Statement**
3. **Software and Hardware Requirement Specification** 
   1. **Methods**
   2. **Programming/Working Environment**
   3. **Requirements to run the application**
4. **Database Analyzing, design and implementation (If any)**
5. **Program’s Structure Analyzing and GUI Constructing (Project Snapshots)**
6. **Code-Implementation and Database Connections (If any)**
7. **System Testing (if any)**
8. **Limitations (if any)**
9. **Conclusion**
10. **Future Scope**
11. **Bibliography/References**

**Annexure III (For Research proposal)**

**A**

**Research proposal**

on

# Title of the proposed research work

(Times New Roman 24 size, Bold)

# Submitted to

**Chitkara University, Punjab**

by

**Name of the Student(s)**

(Times new roman 20 size, Bold)

Roll No: -----------------

# 

# Under the supervision of

# Name of Guide

# Complete Affiliation

**Abstract (**Times new roman 12 size, bold). . . . . . . . . . . . . . . . . . . . . . . ………… **i**

(Abstract should not be more then 500 words, minimum 300 words)

**Table of Contents** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……… **ii**

**List of Figures** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ………. **iii**

**List of Tables** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ………. **iv**

1. Introduction [Times new roman, size 16, bold] . . . . . . . . . . . . . . . . . . . . . . 1

1.1 Section 1 [Times new roman, size 14, bold]. . . . . . . . . . . . . . . . . . . . . . .

1.1.1. Sub-section [Times new roman, size 12, bold]........................... 3

1.1.2. Sub-section . . . . . . . . . . . . . . . . .

1.1.3. Sub-section . . . . . . . . . . . . . . . . . 5

…………………….

1.2 Section 2. . . . . . . . . . . . . . . 6

……………………..

2. Literature Review . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ..

2.1 Tools and Technologies . . . . . . . . . . . . . . . ………………… ..

………………………

3. Justification for Research.............

3.1 Motivation........

3.2 Research Gaps . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ..

4. Problem Statement . . . . . . . . . . . . . . . . . .(minimium 5-6 lines) . . . . . . . . . . . .

5. Expected Outcomes

**References** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

# Introduction (1000-1500 words) [Times new roman, size 16, bold]

* The introduction section should introduce to background of the research area
* The key issue is to state:
  + The overall research problem, which is discussed during the entire thesis process
  + Specific research questions:
    - Between 1-3 separate questions connected to research problem area
    - Should be formulated in a very clear language in a form of a question
  + Research question has a strong connection to method part. Generally, there are two types of questions, which define very much the applied research methodology:
    - Descriptive – How things are?
    - Normative – How things should be?
* In the introduction part, the applicant may briefly describe what the previous stages of the research are.
* If there is sub section then it may be arranged as 1.1, 1.2, 1.3, etc.

# Literature Review [Times new roman, size 16, bold]

* This section is a literature review with a lot of references. The author lists recent literature dealing with the area and shows that he or she is already familiar with the problem domain.
* Literature must be given in continual manner and chronological order. ***Group sentences that express and develop one aspect of your topic and may use a new paragraph for another aspect/ topic.****(no need to give literature in tabular form here, however if author want, he/she can summarise all the literature review in one page tabular form)*
* **Tools and technologies** –from literature review, the author should describe how and what tools/technologies have been used in the related research (existing tools/technologies used by other peer groups).

# Justification for Research [Times new roman, size 16, bold]

* 1. **Motivation** [Times new roman, size 14]

This is a short section justifying the research problem area. Basically, the author states on this part why the research is important and **what challenges are there in the area of research** for:

* the research community
* technical implications for the industry
* national/ economic/ Technical competitiveness
  1. **Research Gaps** [Times new roman, size 14, bold]
* The researcher identifies several **research gaps** based on the literature survey and the problem statement identified, which should be the basis for setting up objectives.
* This part may include references to journals, conferences and newspaper articles pinpointing the importance of the research area. Also estimations of economic and or technical value of solving the problem may be stated.

**4. Problem Statement** [Times new roman, size 16, bold]

Give a brief problem statement here.

# Expected Outcomes [Times new roman, size 16, bold]

* **Results in the acceptance of research paper.**
* State briefly (5-10 lines) what the expected outcomes of the research are and what will be the significance of potential results.

(1) Contributions for the research community

(2) Potential new technical implications etc.

# References (from separate page) [Times new roman, size 16, bold]

List key references here for your study, all these must have been cited properly and appropriately in to the text of the research proposal. Make sure these references are up-to-date. The style of all the references (authors, dates, titles, edition, elace, publisher, fonts & margins etc) must be same for all the references. There are several possible ways to organize this section. You can use either of the referencing systems, alphabetical (Harvard) or numerical (Vancouver).

* **Standard Harvard style -** The reference list at the end of your proposal using this system should be in alphabetical order.
* Examples from journal in Harvard reference style for single author and two authors:

Kozulin, A., 1993, 'Literature as a psychological tool', *Educational Psychologist* 28 (3), 253-265.

Lamb, R. & Kling, R., 2003, 'Reconceptualizing users as social actors in information systems research', *MIS Quarterly* 27 (2), 197.

* **Numerical system - Y**ou should number your references sequentially through the text. The numbers should be given in square brackets and one number can be used to refer to several instances of the same reference. The reference list at the end of the research proposal should be numerical order.

***The style (authors, titles, edition, place, publisher, fonts & margins etc) of all references must be uniform all over and be cited properly (may be given first author’s family name followed by et al) in to the text. If there are more references for one aspects, references should be written in single bracket as [5, 7, 8, 10-14, 17-22, .....etc].***