Bayan University (BNU)

4th Year Students' Final Research Project

A Guideline for
Students, Supervisors and Examiners

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Content

Abstract

This guide is intended to help you produce a good final year project report. It gives advice on how to gather relevant material, how to organise it into a suitable form and how to then turn it into a written project report or dissertation. It also describes the conventions that should govern the structure of the report or dissertation, and suggests some descriptive devices that you can use to make it more effective. A summary of the guidelines is given at the end. The appendix lists the rules governing presentational details, including print quality, font sizes, etc.

Introduction

The final year research project/industrial training is a compulsory component of all degree programmes offered by the College of Engineering and Sciences. It provides an opportunity for students to integrate knowledge and different types of skills and competencies gained in their studies throughout their previous semesters and to develop critical thinking. It is carried out as an independent work which is evaluated according to the highest academic standards. The project/training should be completed within a period of 15 weeks (one semester, full-time) and generally carries six or eight credits. The designations given to the research project/industrial training at the College of are as follows.

- B.Sc. Degree in Computer Science:
  BNU41030 Final Research Project Work: B.Sc. Thesis in Computer Science

Contents and Assessment criteria

General Objectives and Learning Outcomes

The general aim of the final year research project/industrial training is for the students to acquire, develop and demonstrate the requisite knowledge, skills and attitudes/mindset to work independently after graduation. Therefore, to satisfy these requirements, the student shall

- ❏ develop and demonstrate in-depth knowledge in the chosen field of study for the research project and thereby contribute to the advancement of knowledge.
- ❏ demonstrate an ability to plan and execute advanced tasks within a given timeframe using suitable scientific methods.
- ❏ demonstrate an ability to identify, formulate, propose and implement solutions for complex issues arising in their relevant disciplines in a critical, independent and creative manner.
- ❏ demonstrate an ability to integrate the knowledge acquired from the core courses of the degree programme in a systematic and creative manner for research and development oriented tasks.
- ❏ demonstrate an ability to give a clear and cohesive account of and discuss orally (by means of a presentation) and in writing (by means of a report) his/her findings in a logical, clear and concise manner.
- ❏ be able to identify various sources of information, critically evaluate their relevance to the problem in question and to be able to use the correct forms of documentation to summarise them, in an independent manner.
- ❏ be able to defend results from laboratory/field experiments and the fundamental theories behind them in an oral presentation as well as in a well-structured technical report.

Components

The final year project comprises the following components.

1. Project proposal (this may be preceded by a Concept Note, at the discretion of the respective Department) and an oral presentation of it.
2. A mid-term progress review (at the discretion of the respective Department)
3. An end-term oral presentation
4. An end-term poster presentation
5. A written report (thesis) of the project work /training
6. An abstract for departmental and faculty level book of abstracts

A report (the loose-bound copy) should be submitted **at least one week prior** to the oral and poster presentation sessions. All reports must be written and presented in the English language. A copy of the final report will be filed in the departmental archives after the student makes the necessary corrections/changes in response to **the supervisors' comments**.

Supervision and supervisors

Each student (Group work) is assigned a supervisor from the academic staff members of the College (internal supervisor). The internal supervisor supports the student in his/her work to accomplish a report according to the guidelines and assessment criteria, within the given timeframe. The role of the internal supervisor is to be a continuous advisor during the project/training period and to monitor the progress and provide feedback on the potential problems and other issues arising during the work. However, because the project is an independent work, it not the task of the internal supervisors to inform the students exactly how to improve their draft report, overall as well as in detail, since the project is an independent work. The internal supervisor therefore shall only attempt to improve the overall quality of the final report by providing comments and suggestions. However, it is the student's responsibility to plan and carry out the entire project/training. The draft project report needs to be submitted well in advance of the project presentation in order to receive a comprehensive feedback from the internal supervisor.

Each student is also assigned an external supervisor, who is the direct advisor of the student's work and is usually from the establishment/institute/company where the project is carried out. Therefore the external supervisor is an expert of their relevant industry/academic discipline. The student should regularly discuss the progress of his/her work with the external supervisor and obtain the feedback. It is the duty of the student to make sure that the external supervisor is fully aware of the project objectives. At the end of the project/training period the student's respective Department will obtain feedback from the external supervisor and this may also be considered during the final grading of the project. The external supervisor is also invited to take part in the research project presentation sessions.

Note!

The levels of commitment and accessibility of both the internal and external supervisors can vary greatly. Discuss your specific expectations with each of them at the earliest possible and keep them informed well in advance with about scheduling meetings in order to secure an appointment.

Tip...

It is highly recommended to document all meetings with supervisors and in order to minimise the risk of misunderstanding, communicate and confirm all agreements in writing, **for example via email** or BNU Supervision forms.

Assessment

The final grade for the research project/industrial training is determined according to the departmental assessment criteria. Generally, all the required components of the project are examined separately and the cumulative marks will be used to determine the final grade. The Examination Panel/Committee appointed by each Department decides on the allocation of marks allocated to each required component of the final year project.

Guidelines for final year project components

Project Proposal

The Project Proposal is a very significant component of the proposed work. It is an informative piece of writing that reflects all the aspects of your research project. It should be properly structured and should outline the essential information regarding the proposed research project. The Project Proposal should contain a clear statement of the research question, goals and objectives, introduction (background, justification and rationale), a brief literature review, materials and methods, work plan, budget and references. (examples of students research project in Computer Science)

The overall aim of the research proposal is to produce a good action plan and develop a strategy to address your research problem in a systematic manner. Although the students should write the proposal themselves, it is best to discuss its contents with both the internal and external supervisors before submitting it. It is also important that the student carefully checks the proposal for typographical and spelling errors, consistency of style, and accuracy of references, before submitting it. A research proposal should contain text as well as figures and images, but it should normally not exceed five A4 pages (line spacing of 1.5). An example of a Project Proposal with the expected format is given in Appendix I.

Note!

The following web resources contain some useful tips and advices for writing undergraduate project proposals.

- https://sc.edu/about/offices_and_divisions/undergraduate_research/
- http://nuwrite.northwestern.edu

Tip...

Plagiarism warning: Plagiarism can be broadly defined as deliberately presenting someone else's ideas, findings, or work as one's own by copying or reproducing the work without proper acknowledgement of the source. It is the most common form of academic dishonesty and should be avoided. No student therefore shall submit the exact words, ideas, images or data of another person as the student's own in any form of academic writing such as essays, thesis, project proposals, assignments, presentation or posters, etc within the context of the degree programme. This holds true for both the draft and the final project report.

The project proposal is examined in an oral presentation. The specific guidelines and instructions for the presentation will be given by the respective Department that appoints an Examination/Assessment panel.

Further Reading

Writing a Research Proposal: A guide for Science and Engineering students (The University of Melbourne)

The Project Report

The project report, regarded as the final written output of your endeavour, is where you place the project work in context and should be written in English. A loose-bound copy must be submitted to the respective Department for assessment and grading, prior to the specified deadline (before the oral presentation). Penalties will be applied for late submissions. The comments of the supervisors and examiners must be addressed before producing the final hard copy.

Tip...

Start writing the project report as you proceed with your work. Set up interim targets to complete each section and get them reviewed by the supervisors without waiting until all work is completed. It would be less burdensome for the supervisors to review the report section-by-section rather than going through the entire report. Once the entire report is complete, the supervisors can focus more on the contents and the consistency of the report.

Note!

Proof-reading your report during the final stage of production is very important and proofreading your own work can be challenging; it usually takes longer than expected.

Structure of the Project Report

A project report may contain many sections and some recommended sections are outlined below.

Preliminary Pages:

i. Cover page
ii. Title page
iii. Declaration
iv. Dedication (highly personal and optional)
v. Acknowledgments (the style is usually your own)
vi. Abstract (maximum one page)
vii. Table of contents
viii. List of figures
ix. List of tables
x. Abbreviations and Symbols
xi. Conversion Table (optional)

Body of the Document:

Chapter 1 Introduction:

This chapter focuses on the background and overview of the study. A good introduction should include a clear statement of the nature of the project and its rationale where the research problem and its significance

are justified. The limitations of the study can also be briefly discussed and the structure of the report can be outlined. The aims and objectives (main and specific objectives) of the project must be stated clearly at the end of this chapter.

Chapter 2 Literature review/Theoretical Framework:
This chapter presents the underlying theoretical framework of the study. Thus, it justifies as to why the researcher selected the design to answer the particular research problem. Describe the work that has already been done, being critical where necessary. Summarize the main facts and conclusions of the previous studies, synthesizing to produce main themes, directions, contradictions, etc. It is interesting to point out those areas of the field that are not adequately covered.

Chapter 3 Materials and Methodology:
This chapter deals with the experimental/research design used to solve the problem. Hypothesis used (if any), sample, data gathering techniques (test, observations, interviews, check list, audio/video taping, photographs etc.), data analysis/interpretation techniques, materials/consumables/apparatus set up (if any). Ethical considerations can also be briefly described.

Chapter 4 Results and Discussion:
This chapter is an account of your observations, measurements taken and/or data collected. Discuss the significance of the obtained results in relation to the original aims and objectives and to the previously published data.

Chapter 5 Conclusion and recommendations for further studies/future outlook
The major conclusions must be clearly stated in this chapter. Ideas or suggestions for future research may be presented based on the findings of the investigation that has been performed. A future outlook can also be included.

Chapter 6 References:
A complete and accurate list of references should be provided. It is very difficult for editors/proofreaders to fill in missing information on the author's behalf, or to check the spelling of names. Also check for the compatibility between the reference cited in the text and the references given in the list.

Chapter 7 Annexes/Appendices:
Any materials that do not fit into the main chapters can be included in the appendices. For example, survey questionnaires, compilation of survey data, source code of a program, etc can be placed in the form of an appendix/annex.

General Guidelines on Layout and Style

★ **Main Text:** Size should be 12pt in the Times New Roman or font. General Spacing should be 1.5 lines and the font size will change as per headings of the chapters, sections, subsection and the main text.

★ **Page Numbering:** Each page should be numbered at the bottom right hand corner using the numbering style specified for the preliminary pages and the body of the document.

★ **Language:** You are advised to use British (UK) English only, and consistency must be retained throughout the thesis. i.e. never mix British and American styles of spelling, etc. and be aware that British and American English do not only differ in the spelling, but also in the use of some prepositions and phrases.

★ **Length of the report:** Approximately 50 A4 pages (~ 10,000 words, excluding appendices).

★ **Page Margins:** The left margin should be 4.0 cm (1.5 inch) while the right, top, bottom margins should be 2.5 cm (1 inch). Title/Paragraph Margin: Chapter number and title should be centered. Subsection number should be aligned with the left margin. General alignment of the text in paragraphs should be "justified".

★ Page/Paragraph Breaks: A new chapter must start on a new page. A subsection title should not begin on the last line of a page. A new paragraph should not begin on the last line of a page. (A new paragraph in the text is usually indicated by the insertion of a blank line or suitable space or by indentation of the first line).

★ **Preliminary Pages:** these include the title page (the first right-hand page inside the cover), declaration of originality, dedication page, acknowledgements, abstract, table of contents and the list of tables / figures /symbols. Number them using small letter Roman numeric (i, ii, iii, etc). The first page is the Title Page. This page is counted as "i".

★ **Body of the Report:**
- These include all chapters, references and appendices.
- Numbered using Arabic numeric (2, 3, etc).
- The first page of a chapter should be counted.
- Numbering of References continues from body text.
- Numbering of Appendices continues from references.

★ **Numbering:** all chapters and their subsections must be numbered and chapters and Subsections must be titled.

Example:
Chapter 2 Title of Chapter
2.1 Title of the subsection (second level)
2.1.1 Title of the sub-subsection (third level)
2.1.1.1 Title of the sub-sub-subsection (fourth level)

★ **Tables and figures:** all tables and figures must be numbered with respect to the chapter using Arabic numerals. For example, Table 3.1 is the first table that appears in Chapter 3. The table number and title are given above the table while figure captions are placed below the figure.

Further Reading

- ➔ Ken Hanson: Technical and scientific writing
- ➔ Mayfield Handbook of Technical and Scientific Writing (MIT)
- ➔ Style points for Scientific Writing (University of Washington)
- ➔ Anglia Ruskin University, Harvard Style and Referencing

Reference Management

The degree project/industrial training report is a scholarly report in which the author must acknowledge all the sources; failure to do so could be considered as **an act of plagiarism**. A comprehensive reference list is necessary for you to trace your material and to enable any reader to review your work. You can use one of the two widely used styles to present your references and cite them appropriately. BNU is widely accepting the Harvard Style for all publications in any language. However, your supervisor should be able guide you in your selection of a particular style.

It is very convenient to manage references using a bibliographic and reference management tool such as Mendeley, etc which keeps track all the references mentioned in the report.

Tip...

To avoid any disparity between the list of references and the in-text references in the main text, complete your list of references as you proceed; not after word processing the entire report. This will save you a lot of time, especially when locating something that was read or accessed a long time ago.

Further Reading

General Guidance on Referencing Styles:

- Referencing and academic integrity by University of Sussex Library
- Referencing and citation styles : University of Sydney Library
- Free Plagiarism Checker Unicheck

Printing the Report

Students are generally required to produce three hard-bound copies of the report (self-copy, department/Internal supervisor's copy and External supervisor's copy). Contact the relevant Departmental office for specific advice on the exact number of copies. Use high quality A4 size paper (80 gsm) and print on a single side using a high quality printer (preferably a laser printer). Text and figures must be clear and legible. Follow the rules and guidelines when using the Bayan University Logo.

A comprehensive digital copy of the project report should also be submitted to the departmental office via email. All students at BNU should have an official gmail account based on the instructions provided at ITSE website.

Note!

If you have color images, diagrams, photographs, etc, their final readability will depend on whether you print in colour or in black. Check their readability before producing the hard bound copy. It is also advisable to use high-resolution images, etc in order to improve readability after printing.

Oral Presentation

Presentation Structure

Students are required to prepare **a 15 minute presentation**. The oral presentation is usually followed by a discussion which can last for about 5 minutes. When you have finished presenting, members of the Examination Committee/Assessment Panel will usually discuss your work. There should also be time for questions from the rest of the audience. Students can prepare Powerpoint slides for the presentation. The slides should be readable and suitable to an academic audience. Discuss the contents with your supervisors.

Delivery of Presentation

The explanations/findings should be convincing and be theoretically sound and the contents should be well organised. Be confident and well prepared with your presentation. The delivery should proceed with a good pace, so that the audience is able to listen and follow the presentation. Some tips for improving your presentation are given below.

1. Practice good eye contact.
2. Emphasis: use body language, pay attention to gestures and manage your pitch to highlight important points.
3. Stand straight and face the audience.
4. Speak good and clear English.
5. Make sure that the slides are clear (not blurry), tidy (not messy/not overloaded) and visible/legible (use a suitable font and size).
6. The slides must be concise (short points/phrases yet thorough coverage).
7. Show diagrams (figures/images, graphs, block diagrams, flowcharts, etc.) in order to cut down explanations as well as to aid the explanations. The images should be visible even to those who are seated at the back of the room.

Tip...

Practice the presentation in the room which is allocated for the presentation. Test how loudly you should speak and how to move around in the room. If you have audio or video clips in your presentation make sure that the necessary equipments work properly.

Assessment of student's performance during the Question & Answer Session

The student should be

- ➢ Able to answer questions accurately and with sufficient details.
- ➢ Able to answer questions coherently and confidently.
- ➢ Able to answer basic/fundamental questions within the areas/scopes of the project.
- ➢ Show good communication skills and be able to relate the answers to examples, slides, data, etc.

Further Reading

- Hawker, C.J. Effective Presentations - A Must. Angew. Chem. Int. Ed. 2013, 52, 3780 – 3781
- How to make an effective, professional research presentation

Poster Presentation

The poster is a visual presentation of your research findings, so it must be self-explanatory as much as possible. In other words, it should be understandable by the viewer even without a verbal explanation. Students should ensure that they stand by their posters at their allocated times during the Poster Presentation Session to discuss and answer questions regarding their posters.

Poster Size:
The dimensions of the panel provided for displaying posters is A1 size (594 x 841 mm), so ensure that your poster does not exceed these dimensions. These poster panels will accommodate two posters on either side.

Poster Panel Allocation:
A numbered panel will be allocated for each poster and the respective department will inform you of your number before or during the poster set up time. Ensure that your poster is fixed on the panel well in advance of the poster presentation session.

Further Reading

- American Chemical Society- some tips for effective undergraduate poster presentations

General Guidelines for Poster Production

As mentioned earlier, the poster should be self-contained and self-explanatory as much as possible. This allows the examiners and different viewers to proceed on their own pace, while the author is free to answer questions and discuss particular points regarding their posters. In order to enhance the visual appeal of a poster it should be kept simple and clear and contain a mixture of text and graphics (be artistic).

Tip...

It is the viewer, not the author, who decides how much time is spent reading each poster. Therefore, be creative in your design. If you want to retain the viewers for a long time, make an interesting and attractive poster.

Poster Layout: The contents may be handwritten or digitally printed (e.g. by a laser printer) using an appropriate poster paper or board. The matt finish is preferred rather than a glossy finish. It is recommended that the poster contents be arranged in columns (i.e., vertically) rather than rows (i.e., horizontally). Normally, the introduction should be placed at the upper left and a conclusion at the lower right. The important point to remember is that the contents must be arranged in such a manner that it has a good flow and the poster should be easily understood.

Illustrations:
Figures should be comprehensible from a distance of at least 5 feet, so use clear graphics containing large fonts, and an easily readable typeface. Each figure and table should have a heading of one or two lines and additional information should be placed below it. Photographs should be well focused, contain sharp images and have a good contrast. If necessary, one may indicate the scale.

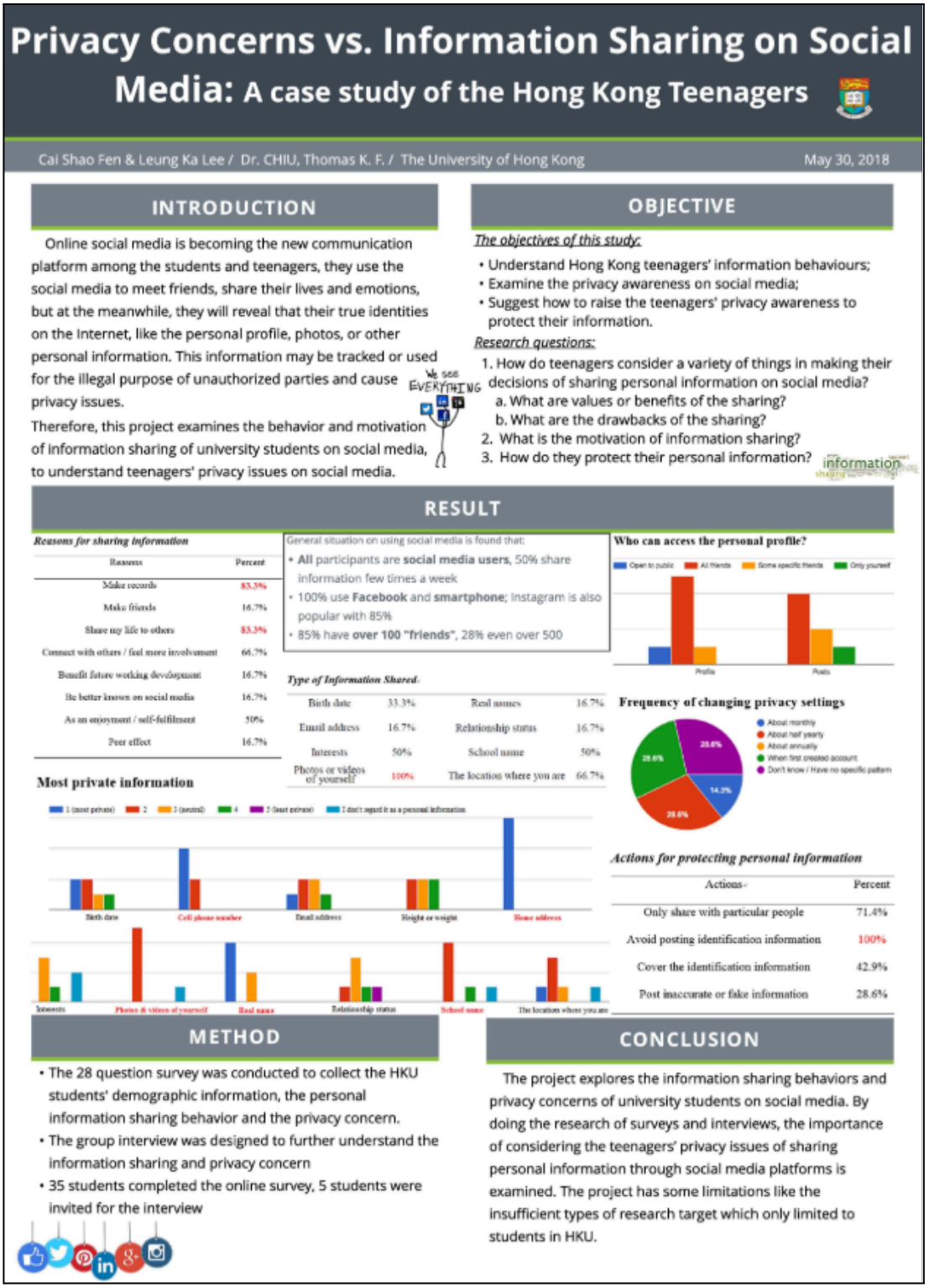
Text:
Be short and precise, but avoid being too narrative. Use large typeface in short, separated paragraphs. Numbered or bulleted lists are effective ways to convey a series of points. Do not set entire paragraphs in uppercase or boldface type.

Titles and Fonts:
Titles and captions should be short and easy to read, in a sans serif font preferably. Use large lettering as this means a number of people can read the poster from a distance without overcrowding. The caption of your poster should carry the abstract title, authors' names and their affiliations.

Poster orientation:
Posters must be oriented in a "portrait" (vertical) position.

Guidelines for the preparation of Abstracts

The abstract is a summary of your degree project. It is a mandatory requirement to include your abstract in the booklet of abstracts prepared by each department for the Annual Research Presentation Session. It must be submitted to the departmental coordinating editor, who prepares the booklet of abstracts. Specific guidelines for formatting the abstract are given in Appendix III.



Sample Poster

Appendix I Sample Format of a Project Proposal

1. **Project Title:** should be brief and descriptive.

2. **Institutional Affiliation:** the institution where the proposed study will be carried out.

3. Project Personnel:

3.1 Internal Supervisor: Name, affiliation and contact details, Official Email

3.2 External Supervisor: Name, affiliation and contact details, Official Email

3.3 Research Student: Name, affiliation and contact details, BNU Student Gmail

4. Introduction:

This section is a generic preamble of the proposed work, which provides an overview and a clear statement of the proposed study. Introduction can further be divided into two subsections.

4.1 Background: This section presents and summarises the research problem that will be solved and the approach to be used to solve that problem. The background should properly describe the conceptual and theoretical basis of the proposed study. Relevant references and previous work must be cited in order to support the research statement of the proposed study.

4.2 Rationale and Justification: In this part, the research problem must to be justified by stating and reasoning out why it is an interesting study and why it is important to do this study. The benefits or the findings of the proposed study (any novel ideas and/or contributions) and the future directions are also briefly discussed here.

5. Overall Objective:

This is the focus of the study, so it should be a succinct statement that describes what is intended to accomplished by the study.

6. Specific Objectives:

Specific objectives should assist and should be relevant to the overall objective and should be achievable within the given timeframe. Specific objectives are measurable (outcome-based) activities to achieve the overall objective of the study; the end points envisioned for the proposed project.

7. Experimental Plan/Project Design:

This section summarises steps taken to achieve the stated objectives of the project. This differs according to type of research or the project being proposed, for example, a sequence of laboratory experiments/ analyses, field trials, case studies, computer simulations, etc., that together lead to the accomplishment of

the project objectives can be described here.

7.1 Materials:
- List the materials required for study including sources of data set(s), etc.

7.2 Apparatus/equipment and instruments:
- List the major apparatus/equipment and instruments required for the study.

7.3 Software tools:
- List the software tools that will be used for the study (if any).

7.4 Methodology:
- The experimental design is outlined here, with a sufficient description on proposed experiments or investigations and techniques. In addition, include the study area, study population, sample and sampling technique and the data collection methods (interviews, surveys, observations, measurements, etc). - Include any calculations, calibration graphs, mathematical models, etc that will be used. - Any other considerations such as ethical aspects of the study can also be mentioned. Whether ethical clearance that has already been obtained or whether informed consent has been obtained from the subjects and how to maintain the confidentiality of gathered data (especially in the case of sensitive data), etc can briefly discussed (The relevant Department will provide the necessary guidelines for obtaining ethical clearance).

8. Data analysis:

The statistical techniques and other methods that will be used to analyze data and the way of presentation of the data (pie charts, bar charts, graphs, etc) can be briefly described here.

9. Time duration: Specify the start and end dates

10. Project Timeline/Work plan:

Given the facilities and resources required, it is required to provide a rough timeline for the completion of the proposed work to show that the project is achievable. Use a Gantt chart format as given in the following example to show the key activities along with their time durations.

Activity	Time duration (in weeks)														
	Month 1				Month 2				Month 3				Month 4		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Literature survey															
2. Preparing project proposal															
3. Preliminary study on the technical aspects															
4. Preliminary study on methods															
5. Collecting and preparing samples for study															
6. Sample analysis and data collection															
7. Statistical analysis of data															
8. Thesis writing															
9. Preparation for oral presentation															

11. Expected outcomes/anticipated results:

It is advisable to say something about what the expected outcomes of the proposed project would be. This may for example, be a brief statement on how does the project make a contribution to knowledge, how does it advance theoretical understanding, what impact can it generate, etc.

12. References:

Provide a list of all sources, such as key research articles or texts, web pages, etc that have been referred to during the proposal development. The information provided must be complete and accurate and should follow the standard conventions.

13. Annexes:

Any relevant graphs, questionnaires, diagrams, etc can be provided as annexes.

Appendix II: Formatting for Cover Page, Title Page and Logo

Data Mining Technique Based Building Intelligent Shopping for Web Services

Letters: Block Capital Letters, Bold
Font: Arial, size 14
Font colour: Black (No embossing)
Line spacing: 1.5 lines
Alignment: Center

Letters: Sentence case , Bold
Font: Arial, size 12
Line spacing: single
Alignment: Center
Font colour: Black (No embossing)

By Group 1

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Final research project report is submitted in partial fulfillment of the requirements for the Bachelor of Science in Computer Science
Submitted on 30th April 2019

Department of Computer Science (DCSC)
College of Sciences (CSCN)
Bayan University (BNU) KRI

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Appendix III: Abstract Format and Layout

A final year project is more than a summary of a topic with credible sources, it is an expanded essay that presents a writer's interpretation and evaluation or argument. The purpose of writing this project is to analyse a perspective or argue a point thus demonstrating your knowledge, writing and vocabulary skills, and ability to do a great research on a given topic.

Sometimes, your supervisor may ask for an abstract along with a research paper. Although abstracts are relatively short, many students find them confusing. You also need to write abstracts if your work revolves around carrying out research or other investigative processes. Writing process is easier than you think, keep reading to see how to complete this task. Also, you can find ideas on the topics of a psychology research paper.

What is an abstract?

In order to write one, you have to know what abstracts are exactly. Well, an abstract is defined as a concise summary of a larger project; it describes the content and scope of the project while identifying objective, methodology, findings, and conclusion.

The purpose of an abstract is to summarize the major aspects of a research essay or paper, but it is important to bear in mind they are descriptions of your project, not the topic in general.

Basically, you use abstract to describe what specifically you are doing, not the topic your project is based upon. For example, if your research paper is about the bribe, the abstract is about survey or investigation you carry out about the prevalence of bribe, how people are likely to offer it to someone, do people take bribe etc. In this case, the abstract is not about the bribe itself, its definition, why people do it, and other related things. If you don't` know, what the research work should look like – look at the example of a research paper.

Types of abstracts

- **Critical abstract** – describes main information and findings while providing a comment or judgment about the study's reliability, validity, and completeness. Here, the researcher evaluates some paper and compares it to other works and papers on the same topic
- **Descriptive abstract** – only describes the work being summarized without comparing it to other papers on the given subject
- **Informative abstract** – most common type of abstracts, the researcher explains and presents the main arguments and most important results. While it doesn't compare one work to others on the same subject, informative abstract includes conclusions of the

research and recommendations of the author

- **Highlight abstract** – written to catch the reader's attention, rarely used in academic writing

Elements the abstract has to contain

Even though there are different types of abstracts, one thing is in common for all of them – they contain the same elements i.e. four types of information presented to the reader. Before you learn how to write an abstract for a research paper, make sure your abstract should comprise of the following:

Objective

Objective or the main rationale of the project introduces readers with the research you carried out. This section accounts for the first few sentences of the abstract and announces the problem you set out to solve or the issue you have explored. The objective can also explain a writer's motivation for the project.

Methods

Once the objective is described, it's time to move to the next section – methods. Here, a writer explains how he/she decided to solve a problem or explore some issue i.e. methods or steps they used to get the answers. Of course, your approach or methods depend on the topic, your field of expertise, subject etc. For example:

- **Hard science or social science** – a concise description of the processes used to conduct a research
- **Service project** – to outline types of services performed and the processes followed
- **Humanities project** – to identify methodological assumptions or theoretical framework
- **Visual or performing arts project** – to outline media and processes used to develop the project

In other words, regardless of the field or subject, methods section serves to identify any process you used to reach the results and conclusions.

Results

This section is self-explanatory; your goal is to list the outcomes or results of the research. If the research isn't complete yet, you can include preliminary results or theory about the potential outcome.

Conclusion

Just like in every other work, the conclusion is the sentence or two wherein you summarize everything you've written above. In the abstract, a writer concludes or summarizes the results. When writing the conclusion, think of the question "what do these results mean", and try to answer it in this section.

NOTE: More extensive research papers can also include a brief introduction before objective section. The introduction features one-two sentences that act as a basis or foundation for the objective. A vast majority of abstracts simply skip this section.

Don't include these in Abstract

A common mistake regarding abstracts is writing them the same way you would write the rest of a research paper. Besides some elements that your abstract has to contain, there are some things you should avoid. They are:

- Abbreviations
- Fluff, abstracts should be relatively short, no need to pump up the word volume
- Images, illustration figures, tables
- Incomplete sentences
- Jargon
- Lengthy background information, that's what research paper is for, abstracts should be concise
- New information that is not present in the research paper
- Phrases like "current research shows" or "studies confirm"
- References
- Slang
- Terms that reader might find confusing
- Unnecessary details that do not contribute to the overall intention of the abstract

Writing the abstract

Now that you know what the abstract is, elements it should contain and what to avoid, you are ready to start writing. The first thing to bear in mind is that your abstract doesn't need a certain "flow". Keep in mind that abstract should be precise and concise, you don't need to worry about making it seem bigger. Ideally, you should focus on introducing facts and making sure a reader will get the clear picture of the topic presented through your research paper. Follow these steps to create a strong, high-quality abstract.

Step 1

Start writing the abstract only when you complete the research paper. By the time you finish the essay writing process, you will know what to use in abstract to perfectly describe your work. Choosing to write an abstract first is highly impractical, takes ages, and it doesn't represent the research paper adequately.

Step 2

For your objective and conclusion sections, you can use the most important information from introduction and conclusion section of the research paper. Rather than wasting your time on trying to figure out what to include, just use the important premises and summarize them into one-two sentences in the abstract.

Step 3

While researching or carrying out surveys for your paper, write down everything you do. Use these notes to create methods sections for the abstract. This particular section just has to inform a reader about the process you implemented to find the answers from the objective. No need to introduce unnecessary information.

Step 4

Make sure the abstract answers these questions: What is the purpose of this research? How was the research conducted? How did I get my answers? What answers did I get?

What do these results mean?

Step 5

When the abstract is complete, read everything you have written from top to bottom. Then, eliminate all extra information in order to keep it as concise as possible.

Step 6

Read the abstract thoroughly again. Make sure there is the consistency of information presented in the abstract and in the research paper. Basically, information included in both abstract and research paper shouldn't be different. After all, the abstract is a summary or a short description of the research paper itself. This is why you shouldn't introduce new details into abstract as well.

Step 7

Once you ensure the abstract contains only relevant information and describes the research paper concisely, read it again. This time, you should look for grammar and spelling mistakes,

punctuation, sentence structures, and tense consistency. Never submit the abstract (and research paper or any other type of work) without proofreading and editing first.

Step 8

At this point, your research paper and abstract are error-free, complete, and ready for you to send them to your professor or client.

Don't forget:

- Vary sentence structures to avoid choppiness. Don't include too many long sentences one after another and avoid doing the same with short sentences as well. Mixture of longer and shorter sentences work the best
- To avoid adding too many long sentences, just break them up into shorter structures
- Use active voice whenever possible. Also, ask your professor whether it is okay to use passive voice when necessary. Every professor has his/her criteria, asking is a great way to avoid mistakes
- Use past tense to describe the work you have already done
- Read the abstract aloud or to someone else in order to make sure the content is readable and easy to understand

Most Importantly

The final year project is a common assignment in college education, and beyond. Writing these papers usually involves creating an abstract, a brief summary or description of the subject or argument you discussed throughout the paper. Abstracts are a major source of concern for many students, but they are incredibly easy to write when you're familiar with the steps. As seen throughout this post, the ideal way to write an abstract is to keep it concise without pumping up word count with unnecessary information. If you don't know what about you can write – look at different research paper topics! Now you're ready to start writing the abstracts for research papers, good luck. Don't forget to see another guide about abstract research paper!

Source: https://www.projecttopics.org/write-abstract-final-year-project.html

Undergraduate Research