

A Project Report on

**<Title>**

Submitted in partial fulfilment for award of degree of

**<Program Name>**

In **Business Analytics**

Submitted by

**<Name of the Student>**

<SRN>

Under the Guidance of

**<Name of the Guide>**

<Designation>

REVA Academy for Corporate Excellence

**REVA University**

Rukmini Knowledge Park, Kattigenahalli,

Yelahanka, Bangalore – 560064

**<Month, Year>**



# Candidate’s Declaration

I, <**Student Name**>, hereby declare that I have completed the project work towards <**Post Graduate Diploma/Master of Business Administration/Master of Science> in Business Analytics** at REVA University on the topic entitled <**Title of Project**> under the supervision of <**Name of Guide and designation**>. This report embodies the original work done by me in partial fulfilment of the requirements for the award of the degree for the academic year <Year>.

Place: Bengaluru Name of the Student:

Date: Signature of Student



# Certificate

This is to certify that the project work entitled <**Title of the Report**> carried out by <**Student’s Name**> with <**SRN**>, is a bonafide student of REVA University, is submitting the <**first/second-year**> project report in fulfilment for the award of <**Post Graduate Diploma/Master of Business Administration/Master of Science> in Business Analytics** during the academic year <**Year**>. The Project report has been tested for plagiarism and has passed the plagiarism test with a similarity score of less than 15%. The project report has been approved as it satisfies the academic requirements in respect of the project work prescribed for the said degree.

Signature of the Guide Signature of the Director

<Name of the Guide> <Name of the Director>

Guide Director

External Viva

Names of the Examiners

1. <Name> <Designation> <Signature>
2. <Name> <Designation> <Signature>

Place: Bengaluru

Date:



# Acknowledgement

Please acknowledge the role of your mentors, trainers, classmates, program office members, family and friends who have directly and indirectly supported you in this work.

Please acknowledge the support provided by the Hon’ble Chancellor, Dr. P Shayma Raju, Hon’ble Vice Chancellor, Dr. M. Dhanamjaya, and Registrar, Dr. N. Ramesh, as a standard protocol.

Place: Bengaluru

Date:



# Similarity Index Report

This is to certify that this project report titled <**Title of the project**> was scanned for similarity detection. The process and outcome are given below. The plagiarism report is attached in the appendix.

Software Used:

Date of Report Generation:

Similarity Index in %:

Total word count:

Name of the Guide:

Place: Bengaluru Name of the Student:

Date: Signature of Student

Verified by:

Signature

Dr. Shinu Abhi,

Director, Corporate Training

# List of Abbreviations

|  |  |  |
| --- | --- | --- |
| **Sl. No** | **Abbreviation** | **Long Form** |
| 1 | LSTM | Long short-term Memory |
| 2 | GRU | Gated Recurrent Unit |

# List of Figures

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# Abstract

(Not to exceed 1 pages)

The Abstract is an important part of the report. A succinct summary of the longer report allows the reader to quickly become familiar with the work described in the report without having to read it all. It briefly advises the reader of the problem, and background information includes the strategic importance of the problem, a concise analysis of the problem, and the primary conclusions and recommendations. Search-friendly keywords to be mentioned.

The abstract should clearly describe the background and introduction, problem statement, objective, methodology used, results and analysis.

**\*CRITICAL:** Do Not Use Symbols, Special Characters, Footnotes, or Math in Paper titles in the abstract.

Keywords: Text Mining, Sentiment Analysis, Natural Language Processing

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# Chapter 1: Introduction

(2-3 Pages)

Introduction presents the specific problem under study. It includes general Introduction to the area of your work, current technical advancement in the area, the need of such study, scope of the study etc. State how this study will help organizations/ community. You can use figures, tables, and references in the introduction.

**1.1 Topic Heading**

You can write the statements here related to your major topic.

**1.1.1 Sub-Topic Heading**

You can write the statements here related to the sub-topic within the major topic.

**1.1.2 Equations**

Punctuate equations with commas or periods when they are part of a sentence, as in:

*a**b* 

Note that the equation is centered using a center tab stop. Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

**1.2 Figures and Tables**

This section describes how to place and define figures and tables.

**1.2.1 Figures**

Figures must be clearly visible and must be aligned in centre. Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Figure captions should be below the figures. Insert figures and tables after they are cited in the text. Use the abbreviation “Fig. 1”, even at the beginning of a sentence. Figure Labels: Use 8-point Times New Roman for Figure labels.

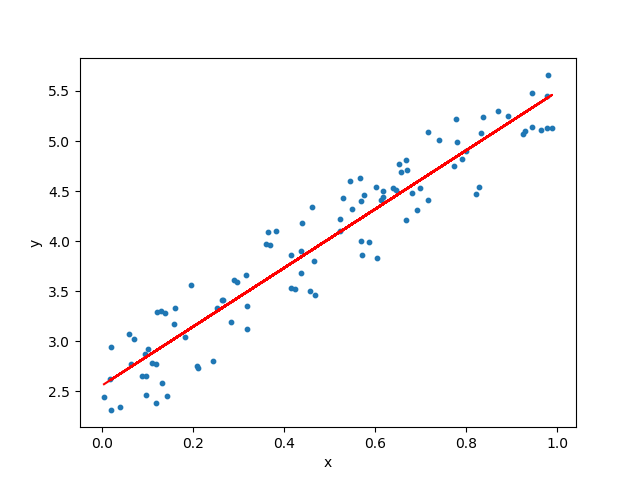


Fig 1.1: Simple Linear Regression

**1.2.2 Tables**

Tables must be aligned in centre. Table heads should appear above the tables. Use 8-point Times New Roman for Figure labels (Capital Letters).

Table 1.1: Table Name

| Table Head | Table Column Head | | |
| --- | --- | --- | --- |
| Table column subhead | Subhead | Subhead |
| copy | More table copya |  |  |

# Chapter 2: Literature Review

(2-3 pages)

Review of background theory and existing literature:A Minimum of 15/20 references from renowned journals/technical reports/websites that must support the problem formulation. A literature review constitutes an essential chapter of a thesis or dissertation or may be a self-contained review of writings on a subject. In either case, its purpose is to:

* Place each work in the context of its contribution to the understanding of the subject under review
* Describe the relationship of each work to the others under consideration
* Identify new ways to interpret, and shed light on any gaps in, previous research
* Resolve conflicts amongst seemingly contradictory previous studies
* Identify areas of prior scholarship to prevent duplication of effort
* Point the way forward for further research
* Place one's original work in the context of existing literature

Any references taken from websites/journal article/industry whitepapers need to be referenced in text and in the end of the report as Bibliography.

**Sample Only:**

Microblogging websites have evolved to become a source of varied kind of information. This is due to nature of microblogs on which people post real time messages about their opinions on a variety of topics, discuss current issues, complain, and express positive sentiment for products they use in daily life (Srivastava et al., 2019). In fact, companies manufacturing such products have started to poll these microblogs to get a sense of general sentiment for their product. Many times, these companies study user reactions and reply to users on microblogs. One challenge is to build technology to detect and summarize an overall sentiment (Prager, 2006).

Use Mendeley for Referencing: Journal articles/websites as per the APA/IEEE protocols which you have referred to while writing this abstract. You must use Mendeley[[1]](#footnote-1) to manage references.

Avoid or keep a minimal referencing from Wikipedia and websites. Majority of the references must be from peer reviewed journals.

# Chapter 3: Problem Statement

(1 page)

Expand on the Title of the project here. **The problem statement (of your project) must be clearly defined as a statement.**

A problem statement is an explanation in research that describes the issue that needs your study. What problem is the research attempting to address? Having a Problem Statement allows the reader to quickly understand the purpose and intent of the research.

Additionally, you may add a paragraph on the internal and external environment where the problem is found, i.e., organization, community, etc. It shall describe groups or organizations affected by the problem (stakeholders), how they are involved, where they are located, and why they have an interest in the problem. A brief history of the problem can be included with the extent and longevity of the problem, how it has changed over time, and significant events which have contributed or influenced the problem. This discussion shall also address ramifications of the problem (strategic significance), its symptoms, and why the problem is worthy of study.

# Chapter 4: Objectives of the Study

(1 page)

This section shall clearly describe the purpose of the capstone project and the benefit to be gained, i.e. goals. Goals should be stated in terms of what the student is attempting to discover by conducting the research and clearly describe why this is of strategic/operational importance to the organization/community. This section may require revision as the literature review progresses and understanding of the problem is refined.

**The objectives must be clearly numbered and must have 3-4 objectives. Each objective must start with a verb.**

# Chapter 5: Project Methodology

(2 pages)

The methodology section contains a description of the process that will be used to conduct the project. The tools used in the project must be specifically identified and their use must be related to solving the problem that is the focus of the capstone project

Problems faced when implementing the methodology should be discussed in the Capstone Report as well as how they were resolved. This section addresses potential problems and how they will be resolved. If the research methodology/design was changed during the conduct of the project, the changes, and the reasons for them should be addressed in this section. The project methodology should be designed to allow conclusions to be drawn about the stated problem.

# Chapter 6: Business Understanding

(2-3 pages)

Articulate the business requirement based on the organizational need. Focus on developing the project objectives and requirements from abusiness perspective, and then converting this knowledge into a data mining problemdefinition, and a preliminary project plan designed to achieve the objectives. You might want to articulate the monetary value in terms of cost benefits and/ or revenue improvement outcomes of embarking such a project.

# Chapter 7: Data Understanding

(4-5 pages)

Clearly write about the data required to develop the solution. You may use an ER diagram to showcase the data and Entity Relationship. You may also list a set of preliminary metrics, KPIs and hypotheses in this section.

# Chapter 8: Data Preparation

(4-5 pages)

This section ideally would cover all the activities needed to construct the final dataset which will be fed into the modelling tools from the initial raw data. Tasks would include table, record, select attributes and transform and clean the data (Extract, Transform, Load (ETL process)). You may recreate a better sample data after editing all the unwanted information. You could present the data patterns and preliminary descriptive analytics. You can also showcase hypothesis testing, correlations, and heat maps in this section.

# Chapter 9: Modeling

(3-4 pages)

Based on the hypothesis and business objectives set, you need to identify the right modelling techniques and their parameters. You may use a set of predictive, machine learning models. The dataset could be divided into “train and test” to run the models. This section needs to clearly mention the procedure followed in model building.

# Chapter 10: Model Evaluation

(1-2 pages)

This section must have detailed descriptions and evaluation metrics on the models built. Here you may report your results based on the model efficiency. You must also evaluate and review to make sure that model can achieve the desired business objectives.

# Chapter 11: Deployment

(1-2 pages)

Deployment: Once the model is tested and verified, the live model needs to be applied to the business situation. This phase is critical to test the model in real time scenario. Here you may report your results based on the model efficiency in a test or live environment. Add the screenshots of the demonstration or implementation on a live setting.

# Chapter 12: Analysis and Results

(2-3 pages)

The result of project and analysis are presented in this section. This section includes the outcome of the methodology, i.e., the numerical or descriptive work that was performed. For example, if a SWOT analysis is performed, the results are included in this section. Likewise, if a technical analysis is performed, the computational results are included in this section.

# Chapter 13: Conclusions and Future Scope

(1-2 pages)

This is the last section of the text in which conclusions or inferences drawn based on the results of study are described. The conclusions should be linked with the objectives of the study. If possible, to express your concluding remarks based on certain numbers, please do so. If you have developed correlations, give such correlations. Recommendations for further research may be included when appropriate. It is important to be careful that the conclusions should not go beyond data and should be based on the study results.

# Bibliography

Prager, J. (2006). Open-domain question-answering. *Foundations and Trends in Information Retrieval*, *1*(2), 91–233. https://doi.org/10.1561/1500000001

Srivastava, A., Singh, V., & Drall, G. S. (2019). Sentiment analysis of twitter data: A hybrid approach. *International Journal of Healthcare Information Systems and Informatics*, *14*(2), 1–16. https://doi.org/10.4018/IJHISI.2019040101

# Appendix

## Plagiarism Report[[2]](#footnote-2)

**Plagiarism Report** with below 15% Similarly index to be attached in the annexure. The title page and last pages with the similarity index report are attached.

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

## Paper Publications in a Journal/Conference Presented/White Paper[[3]](#footnote-3)

1. **Publication** in a Journal/Conference Presented/White Paper – **Full paper** extracted from the journal / full conference paper and **the certificate** must be attached.
   1. Those who have **published**: (Attach full paper)

[All authors Name in order], “[Article Title].” [Journal Name/Conference Name], [Volume Number], [Issue Number], [Year], [Pages], DOI.

* 1. For those who have **not published** yet may add submission information: (Attach full paper)

[All authors Name in order], “[Article Title].” [Journal Name/Conference Name], [Date of submission]

*Eg: Madhukeshwar R* K, Ratnakar Pandey, Shinu Abhi, “A Recommender System for Indian Credit Cards using Text Analytics.” NeuroQuantology, Volume 20, Issue8, 2022, Page 9021-9028, doi:10.14704/nq.2022.20.8.NQ44922

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## Certificate for the Conference Presentation

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## Github Link

[https://github.com/kyasanur/Sentiment-Analysis-on-Credit-Cards-using-Online-Reviews](about:blank)

**Additional Instructions (To be removed while submitting)**

**Formatting for Printing:**

1. The printing of your capstone project must be done with a RACE-approved printer only. Details will be shared.
2. Cover page shall be in White hardbound (for both 1st and 2nd year projects) as per the template shared.
3. The report shall be printed on an A4 size Executive Bond sheet.
4. The font used shall be Times New Roman, and the font size shall be 12. For the Heading, use **Times New Roman 14 in Bold** and for the subheading, use **Times New Roman 12 in Bold**.
5. The top, bottom, left and right margins shall be 1” each.
6. The line spacing shall be fixed at 1.5 lines.
7. Table line spacing shall be single line spacing.
8. Page numbers shall be placed at the bottom right position.
9. Chapters shall be numbered 1, 2, 3, etc. The tables and charts shall be in the format of 1.1, 1.2, etc. i.e., 1.1 indicate that it is the first table in Chapter 1; 2.1 Indicates the first table in Chapter 2. Similarly, chart no. 1.1 indicates the first chart in Chapter 1.
10. The project report shall be a minimum of 40 pages and shall not exceed 75 pages for second-year projects and a minimum of 30 pages, and a maximum of 50 pages for first-year projects.
11. You must submit three hard copies duly signed by the mentor and guide (scanned signature will be sufficient) and the Director along with a soft copy in pdf format. (Two copies to submit to the university and one is your copy).
12. Title of the study, objectives, analysis, findings, and suggestions must tally.
13. Each chapter must start on a fresh page.

**Mandatory Inclusions**

1. **Plagiarism Report** with below 15% Similarly index to be attached in the annexure. The title page and last pages with the similarity index report are attached.
2. **Publication** in a Journal/Conference Presented/White Paper – **Full paper** extracted from the journal / full conference paper and **the certificate** must be attached.
   1. Those who have **published**: (Attach full paper)

[Authors Name], “[Article Title].” [Journal Name/Conference Name], [Volume Number], [Issue Number], [Year], [Pages], DOI.

For those who have **not published** yet may add submission information: (Attach full paper)

[Authors Name], “[Article Title].” [Journal Name/Conference Name], [Date of submission]

1. Github Link
2. Any other annexures (optional).

1. https://www.mendeley.com/guides/mendeley-cite/ [↑](#footnote-ref-1)
2. Turnitn report to be attached from the University. [↑](#footnote-ref-2)
3. URL of the white paper/Paper published in a Journal/Paper presented in a Conference/Certificates to be provided. [↑](#footnote-ref-3)