



L^AT_EX Template

Marco Ramos¹

¹Coventry University, Coventry, UK

February 17, 2025



Made with L^AT_EX

_Abstract

Abstract inserted here.



_Contents

1	Introduction	9
1.1	Background & Context	9
1.2	Motivation & Rationale	9
1.3	Research Question & Objectives	9
1.4	Scope & Limitations	9
1.5	Overview of Report Structure	9
2	Background & State-of-the-Art	10
2.1	Overview of Existing Technologies & Theoretical Foundations	10
2.2	Combined Technical & Literature Review	10
2.2.1	Technical Review	10
2.2.2	Literature Review	10
2.3	Identified Gaps & Opportunities	10
2.4	Proposed Innovation & Conceptual Framework	11
3	Execution	12
3.1	Project Management & Planning	12
3.1.1	Project Timeline & Milestones	12
3.1.2	Task Breakdown & Resource Allocation	12
3.1.3	Risk Management & Mitigation Strategies	12
3.2	Research Methodology	12
3.2.1	Research Design	12
3.2.2	Data Collection & Analysis Methods	12
3.2.3	Ethical Considerations & Approvals	12
3.2.4	Methodological Limitations	13
3.3	Technical Aspects & System Design	13
3.3.1	System Architecture and Design	13
3.3.2	Technology Stack & Development Environment	13
3.3.3	Data Structures, Algorithms & Machine Learning Components	13
3.3.4	Integration & Interoperability	13
3.4	Implementation & Development Process	13
3.4.1	Prototyping & Iterative Development	13
3.4.2	Version Control, Documentation & Quality Assurance	13
3.4.3	Testing & Validation	13
3.5	Results & Analysis	13
3.5.1	Presentation of Results	13
3.5.2	Comparative Analysis	13
3.5.3	Data Interpretation & Discussion	14
3.6	Critical Evaluation	14
3.6.1	Assessment Against Objectives	14
3.6.2	Strengths, Weaknesses & Limitations	14
3.6.3	Discussion of Unforeseen Challenges & Adaptations	14



3.6.4 Recommendations for Future Work	14
4 Conclusion & Reflections	15
4.1 Summary of Findings & Outcomes	15
4.2 Conclusions	15
4.2.1 Addressing the Research Question	15
4.3 Personal Reflection & Learning	15
4.3.1 Reflection on the Project Management Process	15
4.3.2 Reflections on Technical & Methodological Choices	15
4.3.3 Professional Growth & Future Directions	15
4.4 Final Recommendations & Future Work	15



_List of Figures



_List of Tables



_Source Code



Chapter 1

INTRODUCTION

1.1. _Background & Context

- Historical overview of the problem(e.g. disc management challenges)
- Relevance to current technological and user needs

1.2. _Motivation & Rationale

- Why the project matters
- Identified shortcomings in current solutions

1.3. _Research Question & Objectives

- Research question
- Project goals

1.4. _Scope & Limitations

- What is included (and excluded) in the project

1.5. _Overview of Report Structure

- Brief roadmap of the chapters and content



Chapter 2

BACKGROUND & STATE-OF-THE-ART

2.1. _Overview of Existing Technologies & Theoretical Foundations

- Summary of current disc management and automation tools
- Key concepts (file systems, directory automation, machine learning for classification)

2.2. _Combined Technical & Literature Review

2.2.1. _Technical Review

- Analysis of leading disc management tools (e.g. WinDirStat, WizTree, TreeSize)
- Discussion of system performance, interface design, and technical limitations

2.2.2. _Literature Review

- Operating System Fundamentals (file systems, Master File Table, etc.)
- Theoretical methods for automation and categorization
- Review of related academic and industry studies

2.3. _Identified Gaps & Opportunities

- What existing tools lack
- Opportunities for innovation in this project



2.4. _Proposed Innovation & Conceptual Framework

- How this project aims to fill the identified gaps
- Summary of innovative features (e.g. smart file categorization, machine learning integration)



Chapter 3

EXECUTION

3.1. _Project Management & Planning

3.1.1. _Project Timeline & Milestones

- Timeline/planning methodology

3.1.2. _Task Breakdown & Resource Allocation

- Specific work packages, deadlines, and responsibilities

3.1.3. _Risk Management & Mitigation Strategies

- Identifying potential risks and contingency plans

3.2. _Research Methodology

3.2.1. _Research Design

- Explanation of the overall approach (experimental, case study, etc.)

3.2.2. _Data Collection & Analysis Methods

- Techniques (e.g. user testing)

3.2.3. _Ethical Considerations & Approvals

- Discussion of ethics, informed consent, and application details



3.2.4. _Methodological Limitations

- Acknowledgement of any constraints or potential biases

3.3. _Technical Aspects & System Design

3.3.1. _System Architecture and Design

- Overall blueprint of the software/hardware solution

3.3.2. _Technology Stack & Development Environment

- Programming languages, frameworks, libraries, and hardware requirements - Thought process for technology choices

3.3.3. _Data Structures, Algorithms & Machine Learning Components

- Detailed description of core technical components and innovations

3.3.4. _Integration & Interoperability

- How the system components interact and integrate with existing tools

3.4. _Implementation & Development Process

3.4.1. _Prototyping & Iterative Development

- Description of development stages and prototype iterations

3.4.2. _Version Control, Documentation & Quality Assurance

- Tools and processes for ensuring code quality and traceability

3.4.3. _Testing & Validation

- (e.g. Unit, integration, and performance testing methods) - Test cases and results overview

3.5. _Results & Analysis

3.5.1. _Presentation of Results

- Quantitative findings (metrics, benchmarks) - Qualitative observations (user feedback, case study insights)

3.5.2. _Comparative Analysis

- Evaluation against existing solutions and initial objectives



3.5.3. _Data Interpretation & Discussion

- In-depth analysis of results in the context of your research question

3.6. _Critical Evaluation

3.6.1. _Assessment Against Objectives

- How well the project meets the stated aims and research question

3.6.2. _Strengths, Weaknesses & Limitations

- A critique of what worked and what did not

3.6.3. _Discussion of Unforeseen Challenges & Adaptations

- Reflection on project changes, lessons learned, and improvement areas

3.6.4. _Recommendations for Future Work

- Suggestions for further research or system enhancements



Chapter 4

CONCLUSION & REFLECTIONS

4.1. _Summary of Findings & Outcomes

- Recap of key achievements and discoveries

4.2. _Conclusions

4.2.1. _Addressing the Research Question

- How the project answered the research question

4.3. _Personal Reflection & Learning

4.3.1. _Reflection on the Project Management Process

- What worked well, challenges faced, and supervision insights

4.3.2. _Reflections on Technical & Methodological Choices

- Self-assessment of the development and research methods

4.3.3. _Professional Growth & Future Directions

- Lessons learned and advice for future projects or successors

4.4. _Final Recommendations & Future Work

- Proposed next steps and potential improvements for further research



_References

Hoffman, C., & Lewis, N. (2017, June 21). The 5 Best Free Tools to Analyze Hard Drive Space on Windows. How-To Geek. Retrieved December 9, 2024, from <https://www.howtogeek.com/113012/10-best-free-tools-to-analyze-hard-drive-space-on-your-windows-pc/>

SpaceSniffer features. (n.d.). Retrieved December 9, 2024, from http://www.uderzo.it/main_products/space_sniffer/features.html

