Ονοματεπώνυμο επιβλέποντα: κος Κοντζανικολάου Παναγιώτης

Ονοματεπώνυμο φοιτητή: Γεώργιος Λεβαντής

Α.Μ φοιτητή: ΜΠΚΕΔ2216

Title

**Integrating ETL Technology for Efficient and Collaborative Cybersecurity Data Processing: A Case Study**

**Chapter 1: Introduction**

1.1 Objectives

1.2 Problem Under Review

1.3 Related Work

1.4 Contribution

1.5 Structure of the Thesis

**Chapter 2: Literature Review**

2.1 Historical Perspective on the Evolution of ETL Technology

2.2 Review of Traditional ETL Methodologies and Their Limitations

2.3 Examination of Modern ETL Approaches

2.4 Discussion on New Architectural Paradigms

2.5 Integration of STIX/TAXII for Threat Intelligence Sharing

2.6 Collaborative Development in ETL Project

**Chapter 3: Methodology**

3.1 Description of the Methodology

3.2 Synthetic Data Generation for ETL Process Testing

3.3 Implementation of ETL with SQL Layers and Stored Procedures

3.4 Integration of STIX/TAXII for Threat Intelligence Sharing

3.5 Utilization of Git and GitHub for Collaborative Development

**Chapter 4: Case Study - ETL Architecture and Implementation**

4.1 Detailed Description of the End-to-End ETL Project

4.2 Steps Involved in Data Ingestion, Transformation, and Loading

4.3 Integration of STIX/TAXII for Threat Intelligence Sharing

4.3.1 Introduction to STIX/TAXII

4.3.2 Tools and Technologies

4.3.3 Practical Implementation of Exporting Data in STIX Format

4.3.4 Benefits of Using STIX/TAXII for Distributing Threat Intelligence

4.4 Collaborative Development with Git and GitHub

4.4.1 Introduction to Git and GitHub

4.4.2 Benefits of Using Git and GitHub for ETL Projects

4.4.3 Best Practices for Using Git and GitHub in ETL Projects

4.4.4 Practical Implementation of Git and GitHub in the ETL Project

4.5 Utilization of Power BI for Data Visualization  
     4.5.1 Introduction to Power BI  
     4.5.2 Connecting Power BI to SQL Databases  
     4.5.3 Visualizing Cybersecurity Data in Power BI  
     4.5.4 Benefits of Using Power BI for Cybersecurity Data Analysis

**Chapter 5: Conclusion**

5.1 Summary of Key Findings

5.2 Recommendations for Further Research

**Appendix**