PRESENTATION PAGE
SUPERVISOR'S AND STUDENT'S SIGNATURES
ABSTRACT
ACKNOWLEDGEMENTS
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1. **Introduction (Chapter 1)**

   The introduction should include:
   - **Background and Problem Definition:** context of the thesis (similar if not the same of the thesis proposal)
   - **General and Specific Objectives**
   - **Method and Results Overview:** basic description on how the objective is achieved and what are the main results
   - **Research outcome:** what is the research outcome (in this case, the plugin)
   - **Significance:** state the contribution of the presented work
   - **Audience:** who is the research audience?
   - **organization:** describe the organization or structure of the thesis

2. **Literature Review (Chapter 2)**

   The literature review will present the needed background to understand the article "A Rewriting Logic Semantics and Statistical Analysis for Probabilistic Event-B" and how the plugin is implemented:

   2.2 Event-B
   - Explain context, machine, syntax and provide a model example
   - Explain Event-B's semantics (definition proposed in M. A. Aouadhi, B. Delahaye, and A. Lanoix) (not sure of including the LTS semantics definition of Event-B)
   - Explain non deterministic choices in Event-B

   2.1 Probabilistic Event-B
   - Explain probabilistic Event-B Semantics and syntax
   - Provide an example of probabilistic Event-B model with the specified syntax

   2.3 Maude
   - Explain the Maude language (sorts, equations, operators, variables, conditional and non conditional rewriting rules)
   - Provide a Maude model as an example
   - Explain Maude semantics (rewrite theory)

   2.4 PMaude
   - Explain PMaude semantics (probabilistic rewrite theory) and syntax
   - Provide an example of probabilistic PMaude model with the specified syntax

   2.5 PVeStA
   - Brief summary of how PVeStA and Quatex work
   - Simulation of the PMuade model explained in 2.4 using the tool

   2.6 A Rewriting Logic Semantics and Statistical Analysis for Probabilistic
   - Explain how the encoding from a Probabilistic Event-B machine to a probabilistic rewrite theory works.
   - Provide an example of the translation (possibly the example of the model given in 2.1)

   2.7 Rodin and plugin development
   - Explain the general guides for plugin development in Rodin

3. **Methodology (Chapter 3)**
   Proposal 1
   Explain each one of the activities done in each software development phase, according to the waterfall method.
   3.1 Requirements
   3.2 Design
   3.3 Implementation
   3.4 Testing
   3.5 Deployment

   Proposal 2
   Explain the design of the plugin, how it was implemented and the publishing process.
   3.1 Design
   3.2 Implementation
   3.3 Deployment

4. **Results (Chapter 4)**
   Provide the results of the different case studies, which are probabilistic models related to Omicas. For each one of them, explain the probabilistic event-B model, the resulting rewrite theory in Maude and the results of the Monte Carlo simulations.
   4.1 Probabilistic Model 1
   4.2 Probabilistic Model 2
   …

5. **Discussion (Chapter 5)**
   - Discuss and analyze the results obtained in the previous chapter and the overall behavior of the plugin.
   - Highlight weakness and strengths of the implementation
   - implications on practice and future work
6. **Conclusions (Chapter 6)**
   - introduction (brief summary of the presented work)
   - summary of findings
   - Evaluate if research objectives were completed
   - Recommendations
   - Future work
   REFERENCES