Infineon Technologies India Private Limited,
#11, Mahatma Gandhi (M.G) Road
Bangalore-560 001, India

Internship Project Description

Section 1 A (To be shared with the college)

Internship Project Title	**Benchmark Suite using Modern C++ & STL**	
Position / Role		
Work Location		
Department (Detailed org unit in full)	IFIN DES PTS TI EA SME	
Cost Centre		
Supervisor / Manager Name	Rethinagiri Santhosh Kumar	
Technical Mentor Name (Preferably TL only**)**	Snehith Shenoy	
Start Date & End Date		
Internship Duration	6 months	

Detailed Information	
Problem Statement / Project Description (The intern will work on)	
Project Scope	The scope of the project is to design and develop a basic benchmark suite in C++ that includes memory-intensive, computational-intensive, and branch-intensive benchmark programs. The suite will measure the execution times of these benchmarks to provide insights into the performance characteristics of different computer architectures.
Quantified benefits from the project	
Innovation in the project	
Major Tasks, Phases of the Project	▪ Design benchmark functions for memory-intensive, computational-intensive, and branch-intensive scenarios. ▪ Develop a benchmarking framework to measure execution times. ▪ Test and validate the benchmark suite on different architectures. ▪ Analyze and interpret benchmark results to draw meaningful conclusions. ▪ Extend the suite by adding more benchmarks and enhancing its functionality. ▪ Document the project, including code explanations, usage instructions, and findings.

Success Criteria / Key Performance Indicators (KPIs) & Consumer of the project	▪ Successful implementation of memory-intensive, computational-intensive, and branch-intensive benchmark functions. ▪ Development of a benchmarking framework that accurately measures execution times. ▪ Validation of benchmark suite on multiple systems with consistent and reasonable results. ▪ Meaningful analysis of benchmark results, providing insights into performance characteristics. ▪ Extension of the suite with additional benchmarks or features to enhance its capabilities. ▪ Comprehensive documentation that guides users on running benchmarks and interpreting results.
Key Takeaways for Intern (Clearly outline what the intern will learn during the internship)	▪ Modern C++, STL ▪ Insights into computer architecture ▪ Benchmarking and its uses ▪ Version control systems