

Master Thesis Defense

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Title:	Design and Implementation of Multi-Tier Runtime System for GIPSY
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ABSTRACT

Intensional programming implies declarative programming, in the sense of Lucid, based on denotational semantics where the declarations are evaluated in an inherent multi-dimensional context space.

The General Intensional Programming System (GIPSY) is a hybrid multi-language programming platform and a demand-driven execution environment. GIPSY aims at the long-term investigation into the possibilities of Intensional Programming. The GIPSY's compiler, GIPC, is based on the notion of Generic Intensional Programming Language (GIPL) which solved the problem of language-independence of the runtime system by allowing a common representation for all compiled programs, the Generic Execution Engine Resources (GEER).

In this thesis, we discuss the solution to GIPSY's Runtime System. The Multi-Tier framework which consists of Demand Generator Tier (DGT), Demand Store Tier (DST) and Demand Worker Tier (DWT), offers demand-driven, distributed execution and technology independent manners by integrating the previous research on the demand migration middleware implemented by Jini and Java Message Service (JMS).