RIGA TECHNICAL UNIVERSITY

2 IDEA

Intelligent Integrated Development Environment Automation

Introduction

- This project aims to deliver an **Intelligent Integrated Development Environment** that **streamlines software engineering through automation**, seamless transformation and traceability, thus making development faster, smarter, and more efficient

The Problem of the Research

- Traditional software development requires **manual problem domain transformation** into software engineering artifacts, such as requirements, models, and system architecture, before writing the actual code. This process is **slow, error-prone, and resource-intensive.** Moreover, current development environments **lack seamless integration** between different development stages, leading to fragmented workflows, inconsistencies, delays, and **increased costs**.

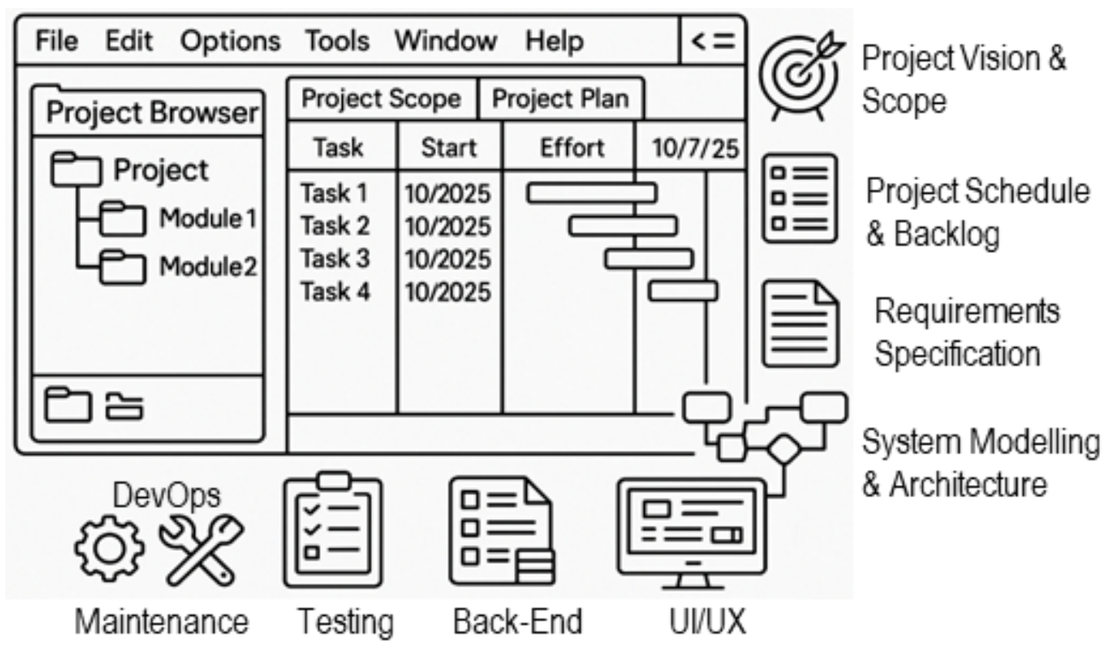
2 IDEA - Solution designed to...

... automate the entire software engineering **process** by **generating all necessary development artifacts** and executable code directly from a **high-level problem description** using model transformations and **artificial intelligence**

Project Description

Key Features

- **Artificial Intelligence-Based Generation** of Software Engineering Artifacts to generate, refine, validate system requirements, models, architectures, executable code
- **Model-Driven Consistent and Traceable** Development Process Integration with Software Deployment and Operations to align requirements, design, and implementation content.



Collected Data

- **Up to 50%** of development time is spent fixing early-stage defects
- **80%** of project failures stem from poor requirements
- AI tools cut coding time by **up to 60%** and defects **by 30%**
- The AI software development market is set to grow from **$500M** in 2023 to **$3B by 2030**, with over 70% of teams already adopting AI-driven automation

Core Team

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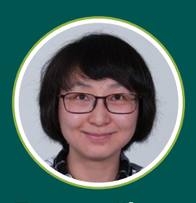

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Former Funding

€ 2,5M EU funded grants

€ 2,4M Industry funded grants

€ 1,2M National research program grants

We are looking for partners, collaborators, and experts who are interested in shaping the future of intelligent software development

- **Proposal Writers** – Experts in securing research and innovation funding to support the project.
- **Research Collaborators** – Academic and industry researchers with expertise in artificial intelligence, software engineering, and automation to specify solution components
- **Pilot Implementation Sites** – Organizations willing to participate in case studies to test and refine the technology in real-world scenarios.
- **Industrial Partners** – Companies interested in integrating automation into their software development processes and development of such platform and its components.

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