Inteli – Instituto de Tecnologia e Liderança

Engenharia da Computação

DELIVERABLES OF THE FIRST MOUDLE

Omnivest Project

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ABSTRACT

This document summarizes the outcomes and strategic rationale of the initial development phase of the Omnivest project, comprising Sprints 2 to 5. Each sprint addressed a critical step in transforming the project's conceptual framework into a technical foundation. Activities ranged from requirement gathering and prototyping to data preparation and the first iterations of artificial intelligence model implementation. This structured, iterative approach ensured consistent alignment with user needs, technical feasibility, and the overall vision of a data-driven financial advisory solution.

INTRODUCTION

The Omnivest project is a digital financial assistant designed to optimize personal investment strategies through artificial intelligence. The initial development cycle, referred to as the "First Module," consists of five sprints: Sprint 1, Sprint 2, Sprint 3, Sprint 4, and Sprint 5. Each sprint contributed specific elements necessary for the establishment of a functional and scalable platform. This report documents the objectives, activities, and key deliverables produced during this module, following the methodology defined by the development team and in accordance with academic and technical best practices.

FIRST MODULE DELIVERABLES

Sprint 1 focused on laying the groundwork for the Omnivest project. The team defined the overall project plan, aligning on scope, key deliverables, and timeline. Initial meetings were held with stakeholders to clarify objectives and constraints, leading to a structured project charter. This sprint also outlined the methodology to be followed in subsequent sprints, ensuring consistency and alignment with agile principles. Milestones were mapped, roles were assigned, and the technology stack was preliminarily discussed to guide future technical decisions. By the end of Sprint 1, the team had a clear roadmap and a shared understanding of the project's direction.

Sprint 2 focused on defining the project scope and aligning the development goals with user needs. During this sprint, the team conducted stakeholder interviews and workshops to gather functional and non-functional requirements. This effort resulted in a detailed requirements specification document. Additionally, user personas and journey maps were created to model user behavior and define critical interactions. Low-fidelity wireframes were designed in Figma, providing an early visual representation of the system's interface and flow. The sprint also initiated a high-level system architecture draft, helping to identify core components and their integration strategy. These deliverables laid the foundation for a user-centered design process and ensured technical planning began early.

Sprint 3 was dedicated to data acquisition and preparation, forming the backbone for any AI-driven functionalities. The team identified and collected relevant financial datasets and proceeded to clean, normalize, and format the data. This included addressing missing values, handling outliers, and ensuring consistency across data entries. The cleaned dataset was then partitioned into training, validation, and test sets, enabling reproducible experimentation. Scripts for preprocessing were also developed to support automation and future scalability. This sprint was crucial in ensuring the data quality necessary for effective machine learning model training.

Sprint 4 transitioned the project from data readiness to strategic model selection. With prepared data available, the team evaluated various machine learning algorithms, assessing their applicability to both predictive analytics and financial optimization tasks. A series of controlled experiments were run to test model performance, focusing on interpretability, accuracy, and computational efficiency. Based on these benchmarks, algorithms such as linear regression, decision trees, and XGBoost were selected for implementation. The results were documented and justified through comparative analysis, providing a strong rationale for future model development.

Sprint 5 marked the initial implementation of the intelligent core of the Omnivest system. During this phase, the development team began coding the selected algorithms, integrating them into a modular framework using Python and relevant ML libraries. Early prototypes of both prediction models and optimization logic were constructed and tested with synthetic and real datasets. Additionally, unit testing was conducted to validate each

component's functionality. This sprint converted previous planning into working prototypes and offered a critical opportunity to evaluate feasibility before scaling the solution further.

CONLUSION

The first module of the Omnivest project successfully delivered the essential building blocks for the platform's continued development. From understanding user needs to laying the groundwork for artificial intelligence components, each sprint contributed to the integrity and viability of the solution. The modular and iterative approach enabled the team to reduce risk, validate assumptions early, and create a strong foundation for future development cycles.

REFERENCES

OMNIVEST PUBLIC REPORT – Instituto de Tecnologia e Liderança. Omnivest Methodology Documentation, 2025.