# Student Guide - APT Project Definition

# Phase 1

## PART I

### **1. Personal Background**

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| --- | --- |
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| **Degree Program** | Computer Engineering |
| **Campus** | Puente Alto |

### **2. APT Project Description**

Project Name: Stepback E-Commerce System

Areas of Performance: Project Management, Website Creation, Database Management, API Consumption

#### Competencies

· Develop software solutions applying programming techniques, coding best practices, and methodologies that allow systematizing the process of development and maintenance.

· Build database models to support the organization’s requirements, ensuring proper manipulation and administration of information.

· Implement comprehensive systemic solutions through a web platform that automates business processes, manages orders, and integrates with external services via REST APIs.

· Manage IT projects, planning milestones, controlling progress, and ensuring compliance with deadlines, costs, and quality.

· Perform software certification testing, evaluating the functionality, security, and usability of the implemented solution.

· Resolve systemic vulnerabilities, incorporating authentication mechanisms, role management, and data security, in compliance with industry standards.

### **3. Project Justification**

#### Project Relevance

The Stepback Digital Transformation project seeks to solve the lack of an integrated platform that centralizes sales, inventory, and order management in an urban and sports footwear company located in Santiago, Chile. Currently, processes are manual and dispersed, generating errors, delays, and limiting competitiveness in the digital market. This project is relevant to the field of Computer Engineering because it applies key competencies such as software development, database management, API integration, and information security. Additionally, it directly impacts the company, its administrative team, and a target audience between 13 and 40 years old, making a real contribution by improving operational efficiency and the online shopping experience.

#### Project Description

The Stepback Digital Transformation project aims to implement an e-commerce system for the sale of urban and sports footwear, along with an administrative section that includes a dashboard with real-time metrics. The platform will feature product, user, role, and order management, exportable reports (PDF/XLS), automatic notifications, data security, and integration with external services via API (such as payment gateways and dropshipping).

#### Relevance to Exit Profile

The Stepback Digital Transformation project is directly related to the Computer Engineering exit profile, as it addresses requirements gathering, software development, data modeling, API integration, and project management. The selected competencies are essential to design and implement a secure and functional web platform, automate business processes, ensure software quality, and deliver a technological solution that optimizes commercial management and improves the user experience.

#### Relation to Professional Interests

Our professional interests are oriented towards software development, database management, and integration of external services through APIs. The Stepback Digital Transformation project reflects these interests by including the creation of an e-commerce system with an administrative section, data security, and consumption of external services. Developing this project will contribute to our professional growth, as it allows us to apply knowledge in programming, information management, and IT project management in a practical way, strengthening key competencies for our future careers.

#### Project Feasibility

The Stepback Digital Transformation project is feasible to develop within the semester, considering the hours assigned to the course and the available resources. The required materials are mainly free access software and development tools (frameworks, database managers, version control), which reduces costs and facilitates implementation. External factors that favor development include the availability of open-source technologies and collaborative teamwork. Possible challenges are integration with external APIs and time management, which can be mitigated through weekly planning, continuous testing, and timely adjustments to the schedule.

## PART II

### **4. Objectives**

General Objective: Develop a web-based e-commerce platform for the Stepback company that centralizes sales, orders, inventory, and supplier management, integrating an administrative module with real-time metrics and ensuring an optimal user experience.

#### Specific Objectives

· Implement a responsive e-commerce platform for purchasing urban and sports footwear.

· Develop an administrative panel with a dashboard of key metrics.

· Incorporate management modules for products, categories, users, roles, and orders.

· Generate exportable reports in PDF and XLS formats.

· Integrate external services through REST APIs (payment gateway and dropshipping).

· Implement security mechanisms, authentication, and role management.

· Enable automatic notifications for clients and administrators.

### **5. Methodology**

The Stepback Digital Transformation project will use an agile methodology based on Scrum, which allows planning, developing, and evaluating the project in short iterations, facilitating adaptation to changes and the progressive delivery of functionalities.

The work will be carried out in the following stages:

· Requirements gathering and analysis: identification of client needs and definition of functionalities.

· System design: creation of data models, software architecture, and interaction diagrams.

· Development and implementation: construction of the e-commerce, administrative dashboard, modules, reports, notifications, and system security.

· Integration of external services: connection with payment gateway and dropshipping providers via REST APIs.

· Testing and validation: functional, security, usability, and performance testing, correcting detected errors.

· Deployment and documentation: system production release and delivery of user and technical manuals.

#### Team Roles

· Bruno Riveros: database administration, implementation of modules and reports.

· Damaris Asencio: development of e-commerce modules and functional testing.

· Jorge Valenzuela: user interface design and customer experience.

· Isaac Condesa: planning, milestone coordination, and project quality control.

### **6. Evidences**

Below are the evidences that will be evaluated in the progress report and the final report of your APT project. Evidences are deliverables developed during the project to document how the work has been implemented.

· Project definition document (Progress) - Defines the APT project.

· Project charter (Progress) - Initial project document defining scope.

· ERS (Progress) - Document specifying system requirements and project proposal.

· System requirements document (Progress) - Functional and non-functional requirements.

· Gantt chart (Progress) - Project timeline.

· Extended use cases (Progress) - User interactions with the system.

· Mockups (Progress) - Graphical prototype of the project.

· Architecture document (Progress) - Defines software architecture and quality requirements.

· Business process TO-BE (Progress) - Improved process after system implementation.

· Data dictionary (Progress) - Defines technical terminology.

· Intermediate development document (Progress) - Defines project progress.

· Database model (Progress) - Database structure.

· Database tables creation (Progress) - SQL scripts.

· PL/SQL queries (Progress) - Queries and stored procedures.

· Final APT report (Final) - Full project report.

· 100% system development (Final) - Delivery of the fully developed system.

· Test plan (Final) - Defines quality tests and validation metrics.

· Change control matrix (Final) - Documents project changes.

· Scope verification (Final) - Confirms requirements met.

· User manual (Final) - User instructions.

· Closing report (Final) - Project closure documentation.

· Final presentation (Final) - Final delivery of the APT project.

### **7. Work Plan**

The following table defines the planning of your APT Project according to the required activities.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Competence/Unit | Activity/Task | Description | Resources | Duration | Responsible |
| Project Management | Project Charter | Draft and approve the initial charter | PC, project documentation | 11-08-2025 to 15-08-2025 | Isaac Condesa |
| Project Management | Approval of Charter | Official validation of the charter | PC, charter document | 18-08-2025 | Damaris Asencio |
| Project Management | Requirements Definition | Gather general requirements | Forms, meetings | 19-08-2025 to 20-08-2025 | Bruno Riveros |
| Project Management | Requirements Worksheet | Document functional and non-functional requirements | PC, office software | 20-08-2025 to 21-08-2025 | Jorge Valenzuela |
| Analysis and Design Phase | ERS Document | Prepare specific requirements | PC, modeling tools | 28-08-2025 to 29-08-2025 | Damaris Asencio |
| Design Phase | Prototypes | Design of e-commerce and admin dashboard | Figma, Draw.io | 08-09-2025 to 09-09-2025 | Jorge Valenzuela |
| Development Phase | Authentication Module | Implement login, roles, and encryption | PC, frameworks | 28-09-2025 to 03-10-2025 | Isaac Condesa |
| Development Phase | Products Module | CRUD of products, categories, and stock | PC, frameworks, database | 07-10-2025 to 10-10-2025 | Bruno Riveros |
| Quality Assurance | Functional Testing | Validate workflows, security, and roles | Testing environment | 10-11-2025 to 13-11-2025 | Jorge Valenzuela |
| Project Management | Project Closure | Formalize closure and delivery | PC, final documentation | 02-12-2025 to 05-12-2025 | All Team |

### **8. Gantt Chart**

Use a Gantt chart format that suits you to organize the activities defined in the previous section, considering the academic period and the three phases of the Capstone course.