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1. **PART I**

| **1. Personal Background** |
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| Below is a table in which you must complete the requested information. |

| Student Name | [**Tiare Vanesa Moran Lepe**](mailto:ti.moran@duocuc.cl)[**PEDRO ALEJANDRO URETA SALVO**](mailto:pe.ureta@duocuc.cl)  [**Edison Aclicio Peralta Riveros**](mailto:ed.peralta@duocuc.cl) |
| --- | --- |
| ID | **19.027.357-1 , 19.004.981-7, 16.739.948-7** |
| Degree Program | **Computer Engineering** |
| Campus | **Puente Alto** |

| **2. APT Project Description** |
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| In the description you must briefly indicate the name of your APT project and the graduation profile competencies that you are going to put into practice. If in your degree program the performance areas are defined, also mention which performance areas the project is linked to. |

| Project Name | *TEP* |
| --- | --- |
| Performance Area(s) | **Computer Project Management; Requirements Analysis and Planning; Data Model Analysis and Development; Business Intelligence; Software Architecture; Software Quality.** |
| Competencies | **Requirements elicitation and traceability (ERS and use cases), sprint planning (Gantt), SQL model and queries for control/reports, basic-level architecture decisions and quality/functional testing criteria. Brief description: system that receives orders from an external web through webhook/API, validates and stores data, enables injection to carrier, generates/manages labels, facilitates basic tracking and provides operational reporting.** |

| **3. APT Project Foundation** |
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| Below are different fields that you must complete with the requested information. This section seeks for you to describe your project in detail and justify its relevance and pertinence. |

| Relevancia del proyecto APT | *The project addresses a common need in e-commerce operations: to organize and standardize the shipping flow in order to reduce operational times and errors. TEP integrates order reception, preparation/labeling and basic reporting, increasing traceability and visibility of statuses for decision-making.* |
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| Descripción del Proyecto APT | *TEP is a project oriented to management and data. It considers: reception of orders from an external web through simulated webhook/API, validation and storage, preparation for injection to carrier, generation/management of labels, basic tracking and operational reporting. The scope is limited to a critical flow and minimum KPIs, prioritizing sprint planning, documentation (ERS and extended use cases) and SQL queries.* |
| Pertinencia del proyecto con el perfil de egreso | *The project requires competencies inherent to the profile: requirements elicitation and traceability, project planning and control, data modeling/querying in SQL, initial BI for reports/KPIs, basic-level architecture decisions and quality/functional testing criteria. All are put into practice in an integrated and measurable way.* |
| Relación con los intereses profesionales | *It aligns with our interests of leading and coordinating IT projects, automating tasks that save time and working with data/SQL to ensure quality and reporting. I am less interested in programming intensively and more in managing progress, prioritizing and transforming needs into clear deliverables.* |
| Factibilidad de desarrollo del Proyecto APT | *It is feasible within the semester according to the Gantt Chart: it is executed in two-week sprints, with partial deliverables and continuous review. It requires available resources (SQL Server Express, ERS/UC documents, sprint template) and uses simulated integrations to mitigate external dependencies. Main risks (time and access to real APIs) are controlled with scope limited to an MVP of the critical flow, test data and prioritization of minimum viable reporting.* |

1. **PART II**

| **4. Objectives** |
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| In this section you must define general and specific objectives of the APT Project. It is important to clarify that the objectives must be stated clearly, concisely and without giving further explanations, that is, they must be self-explanatory. It is suggested to write them using a verb in the infinitive, since this forces to specify concrete actions. |

| General Objective | *– Plan, design and implement an MVP of the shipping management flow that allows receiving, validating, storing, preparing/injecting, labeling, tracking and reporting orders.* |
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| Specific Objectives | * ***Elicit and prioritize system requirements (ERS and use cases) with traceability.*** * ***Design the data model and SQL queries for control and reporting.*** * ***Define the initial architecture and the technical decisions of the MVP.*** * ***Implement the reception of orders through simulated webhook/API.*** * ***Implement the preparation and injection of orders to the carrier (simulated).*** * ***Generate and make available labels in downloadable format.*** * ***Enable basic tracking of shipment statuses.*** * ***Build operational reports and KPIs exportable.*** * ***Establish acceptance criteria and execute functional tests of the critical flow.*** * ***Plan and control the project in sprints with milestones and deliverables.*** * ***Document results and evidence at the end of each sprint.*** |

| **5. Methodology** |
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| In the following section you must describe the methodology, specific to your discipline, that you will use to solve the APT project described above, including the stages and work methods. |

| Description of the Methodology |
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| ***A hybrid methodology will be used: initial planning and documentation (typical of traditional approaches) combined with iterative execution in 2-week sprints. First, the scope and base artifacts (ERS, use cases, Gantt) are clearly defined, and then progress is made through short iterations with verifiable deliverables (MVP of the critical flow and reporting), controlling changes, risks, and quality in each sprint.***  ***Stages and work methods***   1. ***Initiation and Planning*** *– Define scope, objectives, and project constraints. – Prepare ERS and use cases (high level and extended) with traceability. – Build Gantt Chart and sprint plan (milestones, risks, and responsibilities).* 2. ***Analysis and Design (Architecture and Data)*** *– Detail use cases, business rules, and necessary mockups. – Design the data model and SQL queries for control/reports. – Document minimum architecture decisions (components, interfaces, standards).* 3. ***MVP Implementation and Automations*** *– Implement simulated order reception (webhook/API). – Prepare and inject orders in a simulated way; generate downloadable label. – Enable basic status tracking and operational reporting (SQL queries/KPIs).* 4. ***Quality Assurance*** *– Define acceptance criteria per use case. – Execute functional tests of the critical flow and record evidence. – Correct findings and update documentation.* 5. ***Closure and Feedback*** *– Prepare sprint report, lessons learned, and adjustments to the plan. – Consolidate final evidence (MVP, queries/report, test results).*   ***Work by sprints (cadence and control)*** *– Sprint planning: prioritize sprint deliverables according to value and risk. – Execution: coordinated work on backlog and living documents. – Review: demonstrate deliverables (partial MVP, queries/reports). – Retrospective: agree on process improvements. – Change management: assess impact and update scope/plan. – Risk management: identify, mitigate, and monitor per sprint.*  ***Functions, tasks, and responsibilities*** *– Project leader / Functional analyst: planning, coordination, stakeholder relationship, ERS/UC, change and risk control. – Data/BI analyst: data model, SQL queries, data quality validation, and reporting/KPIs. – QA: acceptance criteria, test plan and execution, evidence and follow-up of findings. – Technical support / Automations: prototype/MVP, simulated integration, and label/notification generation. Note: if the project is individual, the same person assumes these functions in an integrated way and prioritizes according to the sprint plan.*  ***Deliverables by stage*** *– Initiation/Planning: ERS, use cases (high level and extended), Gantt Chart/sprint plan. – Analysis/Design: data model, base SQL queries, minimum architecture document. – Implementation: MVP of the critical flow (reception, preparation/injection, label, tracking) and reporting/KPIs. – Quality: acceptance criteria, test plan/results record. – Closure: sprint reports and final consolidated evidence.* |

| **6. Evidence** |
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| Below, describe which evidence will be evaluated in the progress report and in the final report of your APT project. This evidence must be agreed upon with your instructor. Evidence will be understood as the products developed during the project whose purpose is to make visible or document how the work has been implemented. |

| **Type of evidence (progress or final)** | **Name of the evidence** | **Description** | **Justification** |
| --- | --- | --- | --- |
| Progress | ERS and Use Cases (high level and extended) | *ERS document and set of extended use cases that define scope, FR/NFR and main flows.* | Ensures clarity of what will be built and allows traceability of requirements with deliverables and tests. |
| Progress | Gantt Chart and Sprint Plan | Work plan by phases and 2-week sprints with milestones, dependencies and dates. | Organizes execution, facilitates monitoring and allows evaluation of deadline compliance. |
| Progress | Sprint Closure Reports | Closure documents with introduction, summary, tasks carried out and next sprint. | They evidence the incremental progress and the control of the work plan. |
| Final | Plan and results of functional tests | Acceptance criteria per use case, test cases and execution evidence. | Ensures quality of the MVP and validates that what was planned is fulfilled. |
| Final | Brief User Manual | MVP user guide (main steps and considerations). | Facilitates evaluation and transfer of the result to reviewing users. |
| Final | Final Consolidated Report | Document that integrates objectives, methodology, evidence and project results. | Leaves formal record of the closure and the lessons learned. |

| **7. Work Plan** |
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| In the following table define the planning of your APT Project according to the requirements. |

| **APT Project Work Plan** | | | | | | |
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| **Competence or units of competences** | **Name of Activities/Tasks** | **Description of Activities/Tasks** | **Resources** | **Duration** | **Responsible** | **Observations** |
| Project planning and management | Gantt Chart and Sprint Plan | Design of planning by phases and 2-week sprints | MS Project/Excel/Google Sheets | 1 week | Tiare | Facilitates control of progress and risks. |
| Data modeling and querying in SQL | Data Model | Design of entity–relationship model and normalization | SQL Server, Draw.io | 2 weeks | Edison | May require adjustments according to requirement changes. |
| Data modeling and querying in SQL | SQL queries for reporting | Creation of queries for control of KPIs and reports | SQL Server | 2 weeks | Edison | Adjust criteria according to instructor feedback. |
| Software architecture | Definition of initial architecture | Document minimum architecture | Word, Draw.io | 1 week | Tiare | Must be consistent with MVP scope. |
| Software implementation | Simulated order reception | Development of simulated endpoint (webhook/API) | Python/.NET, Postman | 2 weeks | Pedro | Risk: dependency on test data. |
| Software implementation | Order injection and labels | Logic to prepare/inject orders and generate downloadable labels | Python/.NET, SQL Server | 3 weeks | Edison | Must integrate with carrier module. |
| Software implementation | Basic shipment tracking | Statuses (pending, in transit, delivered) | SQL Server, Frontend mockup | 2 weeks | Edison | Validated with test dataset. |
| Business Intelligence | Reports and KPIs | Construction of exportable reporting (Excel/PDF) | SQL Server, Power BI/Excel | 2 weeks | Tiare | Difficulty: defining minimum viable KPIs. |
| Software quality | Functional tests | Design and execution of functional tests with acceptance criteria | JMeter, Excel | 2 weeks | Pedro | Must cover critical flow. |
| Project management | Sprint documentation | Sprint closure reports with tasks completed and pending | Word/Google Docs | Each sprint | Tiare | Requires discipline and consistency. |
| Project closure | Final consolidated report | Final document with objectives, methodology, evidence and results | Word/PDF | 2 weeks | Whole team | Consolidation of learnings and evidence. |

| **8. Gantt Chart** |
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| Find a Gantt Chart format that suits you and organize in it the activities planned in the previous point, considering the period assigned for the development of your APT Project. You must maintain the temporality of the academic period in the development of the three phases contemplated in the Degree Portfolio Course. |

