ENTREGA #2

CONSTRUCCIÓN DEL PRODUCT BACKLOG

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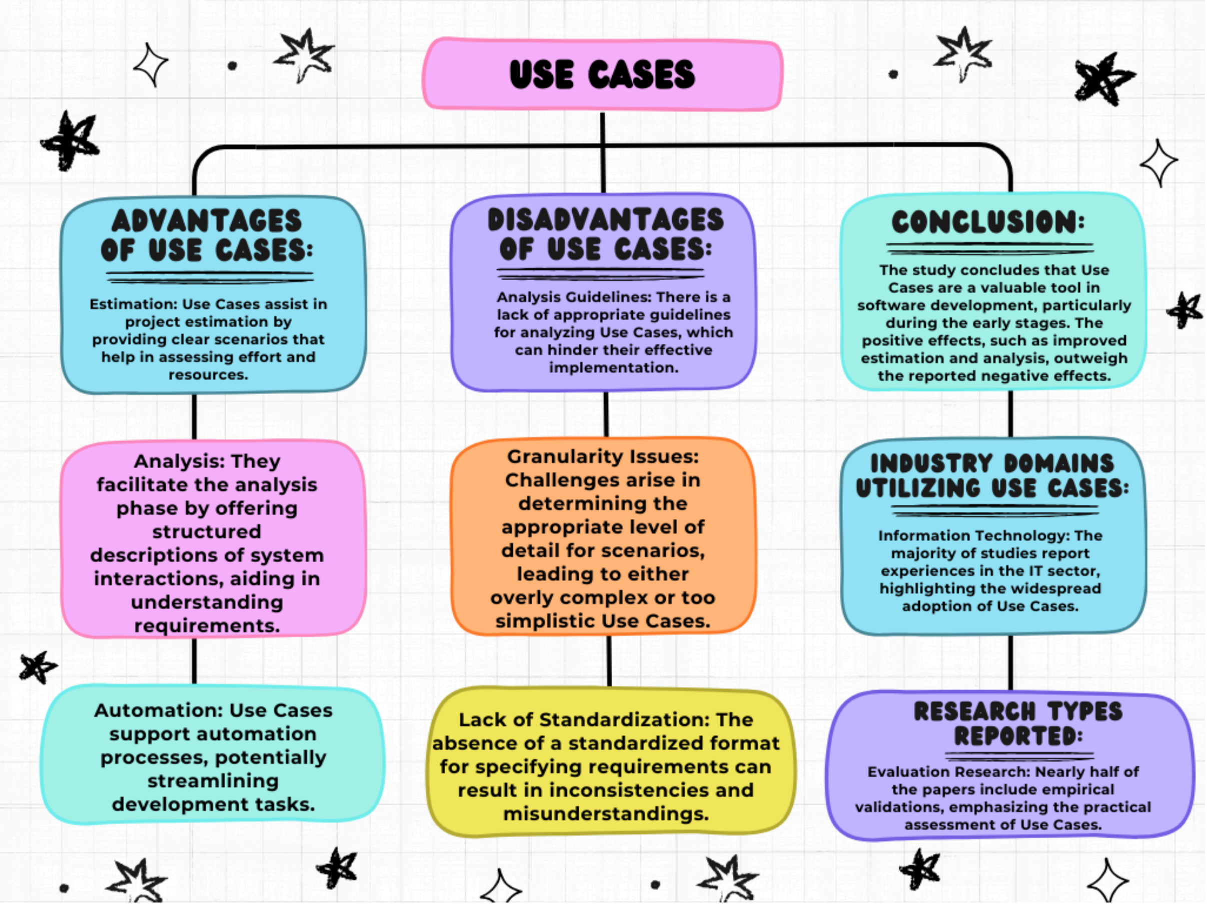
PREGUNTAS ORIENTADORAS

1. It refers to the structures of a system composed of elements with externally visible properties and relations between them. This definition is:
    a. UML
    b. Software Architecture
    c. View
    d. Controller
2. It is a technical leader must know the principles related to software architecture, have extensive knowledge about technology and have excellent skills in written and oral communication. The previous profile refers to:
    a. developer
    b. Software architect
    c. Tester
    d. Analyst

ACTIVIDAD DE TRABAJO AUTÓNOMO

Read the article called “The impact of Use Cases in real-world software development projects: A systematic mapping study” available in SCIENCEDIRECT DataBase and formulate a concept map to summarize its content.



USE CASES

ADVANTAGES OF USE CASES:

Estimation: Use Cases assist in project estimation by providing clear scenarios that help in assessing effort and resources.

Analysis: They facilitate the analysis phase by offering structured descriptions of system interactions, aiding in understanding requirements.

Automation: Use Cases support automation processes, potentially streamlining development tasks.

DISADVANTAGES OF USE CASES:

Analysis Guidelines: There is a lack of appropriate guidelines for analyzing Use Cases, which can hinder their effective implementation.

Granularity Issues: Challenges arise in determining the appropriate level of detail for scenarios, leading to either overly complex or too simplistic Use Cases.

Lack of Standardization: The absence of a standardized format for specifying requirements can result in inconsistencies and misunderstandings.

CONCLUSION:

The study concludes that Use Cases are a valuable tool in software development, particularly during the early stages. The positive effects, such as improved estimation and analysis, outweigh the reported negative effects.

INDUSTRY DOMAINS UTILIZING USE CASES:

Information Technology: The majority of studies report experiences in the IT sector, highlighting the widespread adoption of Use Cases.

RESEARCH TYPES REPORTED:

Evaluation Research: Nearly half of the papers include empirical validations, emphasizing the practical assessment of Use Cases.

PROCEDIMIENTO Y METODOLOGÍA DE LA PRÁCTICA

1. Build the product backlog. Remember that the product backlog should be prioritized (You must use 2 ways to prioritize).

Identifier	User history	Priority	Effort
HU1	As an administrator, I want to manage customers to register, edit and delete information.	High	6
HU2	As an administrator, I want to manage suppliers to register and modify their data.	High	5
HU3	As a salesperson, I want to create invoices to record sales.	High	8
HU4	As a customer, I want to receive an	Medium	5

	invoice when I make a purchase.		
HU5	As a salesperson, I want to see the stock status to manage product inventories.	High	8
HU6	As a salesperson, I want to search for customers in the system to speed up invoicing.	High	3
HU7	As an administrator, I want to see the inventory status to manage orders to suppliers.	Medium	7
HU8	As a salesperson, I want to have customers highlighted by type in the system to apply benefits.	Medium	5
HU9	As an administrator, I want to associate invoices to customers and suppliers for better control.	Medium	8
HU10	As an administrator, I want to export reports in Excel or PDF to facilitate data management.	Low	5

PRIORITIZATION METHODS:

- **MoSCoW (Must, Should, Could, Won't).**

Identifier	**User history**	**MoSCoW Priority**
HU1	Manage customers.	Must
HU2	Manage suppliers	Must
HU3	Manage invoices.	Must
HU4	Receive an invoice.	Should
HU5	Stock status.	Must
HU6	Search customers in the system.	Must
HU7	Inventory status.	Must
HU8	Featured customers.	Could

HU9	Associate invoices.	Must
HU10	Export reports.	Could

- **VALUE MATRIX V.S. EFFORT**

Identifier	**User history**	**Value(1-5)**	**Effort (1-5)**	**Priority**
HU1	Manage customers.	5	2	High
HU2	Manage suppliers	5	2	High
HU3	Manage invoices.	5	3	High
HU4	Receive an invoice.	3	3	Medium
HU5	Stock status.	5	3	High
HU6	Search customers in the system.	3	1	High
HU7	Inventory status.	5	3	Medium
HU8	Featured customers.	3	1	Medium
HU9	Associate invoices.	5	4	Medium
HU10	Export reports.	3	3	Low

2. Determine the "Definition of Done" established by the group for the development of the project.

DEFINITION DONE CRITERIA (DOD)	EQUIPMENT VALIDATIONS
Development and Code	- Development and Code - The code will be written following SOLID principles and best practices. - The functionality will be fully implemented with the requirements.

	- There will be no critical or blocking bugs in the code. - The code will be reviewed by all developers. - Unnecessary warnings and unnecessary comments in the code will be removed.
Testing and Validation	- Unit tests will be executed. - Integration tests will be performed with other system modules. - Functional tests will be run to verify that it meets the business requirements. - All errors detected in tests will be corrected. - The functionality has been validated by the testing team.
Documentation	- The user story will be updated in the Product Backlog with the status “Done”. - Technical documentation of the system will be adjusted (if necessary). - Comments have been added or updated in the code where relevant. - If there were changes in the database, they would be documented in the data model.
Integration and Deployment	- Deployment will be done in a test environment for validation. - A demonstration or review of the functionality will be performed with the team or customer.
Final Approval	- The Product Owner will validate that the functionality meets the acceptance criteria. - The story will be marked as “Done” in the management tool (Jira).

3. Build the Sprint Backlog for the first Sprint. For this:

    a. Make a detailed specification of the stories selected for the sprint.

    b. Prioritize those user stories with the greatest value to the end user.

c. Include at least 5 acceptance criteria for each story.

d. Determine the tasks needed to complete the stories proposed for the sprint.

User history.	Description:
ID: HU1	As a salesperson, I want to register new customers in the system to expedite future purchases and generate customized invoices.
Priority: Must	
Acceptance Criteria:	tasks
- The system must allow entering customer data (name, address, phone, RFC, email). - If the customer already exists, a warning message should be displayed. - The system must validate that the required fields are complete before saving. - The customer must be stored in the database with a unique identifier. - It must allow data editing in case of error.	- Design the customer registration interface. - Implement field validations. - Create the customer database. - Integrate the functionality with the billing system. - Perform unit testing and integration.

User history.	Description:
ID: HU2	As an administrator, I want to register new suppliers in the system to manage purchasing and inventory.
Priority: Must	
Acceptance Criteria:	tasks
- The system must allow entering supplier data (name, contact, phone, mail, products supplied). - Mandatory fields must be validated to be complete. - The supplier must be stored in the database with a unique identifier. - The user must be able to modify or delete a registered supplier.	- Design the supplier registration interface. - Implement the supplier database. - Integrate validations and data editing. - Connect to the purchasing and inventory module. - Perform unit testing and integration.

- A history of registered suppliers must be displayed.	

User history.	Description:
ID: HU4	As a salesperson, I want to select an existing customer when making a sale so that the invoice includes their details.
Priority: Should	
Acceptance Criteria:	tasks
- The system must allow searching for registered customers by name or RFC. - If the customer does not exist, allow adding it at that time. - The customer data must automatically appear on the invoice. - Issuing invoices to “General Public” must be allowed if there is no associated customer. - The generated invoice must be stored in the sales history.	- Design the customer selection interface on the invoice. - Implement the search and selection of existing customers. - Allow the creation of a new customer in the same flow. - Integrate with the billing system. - Perform unit testing and integration.

User Stories Prioritization:

- **Value matrix VS Effort:**
  - HU-001 (Register Customer): High value, Low effort 🟢
  - HU-002 (Register Supplier): High value, Medium effort 🟢
  - HU-003 (Associate Customer to Invoice): Medium value, Medium effort 🟡
- **MoSCoW:**
  - Must Have (Essential): HU-001, HU-002
  - Should Have (Important, but not critical): HU-003
  - Could Have (Optional): There are no optional stories in this sprint.
  - Won't Have (Not to be included in this sprint): Advanced functionality such as reports or discounts.

4. Generate the effort estimate for each of the user stories according to their complexity. For this task it is suggested to use the planning poker strategy and allocate the weights using the Fibonacci series.

Identifier	User Story	Effort (Fibonacci)
HU1	As an administrator, I want to manage customers (create, edit, delete).	8/high
HU2	As an administrator, I want to manage suppliers (registration and modification).	5/high
HU3	As a salesperson, I want to create invoices to record sales.	8/high
HU4	As a customer, I want to receive an invoice after my purchase.	5/half
HU5	As a seller, I want to see the stock status to manage inventories.	8/high
HU6	As a salesperson, I want to search for customers in the system to speed up invoicing.	3/high
HU7	As an administrator, I want to see the inventory status to place orders to suppliers.	5/half
HU8	As a salesperson, I want to highlight customers according to their type in order to apply benefits.	5/half
HU9	As an administrator, I want to associate invoices to customers and suppliers.	8/half
HU10	As an administrator, I want to export reports in Excel or PDF for data management.	3/low

5. Sprint test planning. Test cases on selected platform (minimum 5 cases per HU)

User History	Target	Test case
Customer management	Verify that the administrator can register, edit and delete customer information correctly.	● Create a new customer with valid data. ● Edit the information of an existing customer. ● Delete a customer and verify that it does not appear in the list. ● Attempt to register a customer with incomplete data (expected error). ● Search for a customer in the database by name or ID.
Supplier management	Check that the administrator can register and modify suppliers without errors.	● Register a supplier with all required fields. ● Edit a supplier's information and verify the changes. ● Delete a supplier and validate that it is no longer in the list. ● Attempt to register a supplier with invalid data (expected error). ● Search for suppliers by name or ID.
Invoice creation	Ensure that the vendor can generate invoices correctly.	● Create an invoice with products and valid customers. ● Verify that the generated invoice has the correct format. ● Attempt to create an invoice without products (expected error). ● Generate an invoice and validate the stock update. ● Cancel an invoice and verify that it does not impact stock.
		● Make a purchase and

Invoice reception by customer	Validate that the customer can receive an invoice after a purchase.	verify receipt of the invoice. ● Verify that the invoice contains the correct information (products, prices, taxes). ● Attempt to receive an invoice without having made a purchase (expected error). ● Download the invoice in PDF. ● Consult previous invoices in the customer's history.
Display of stock status	Verify that the seller can correctly consult the inventory status.	● Search for a product in stock and display its available quantity. ● Try to sell a product without stock (expected error). ● Validate that the stock decreases after a sale. ● Update the inventory and verify the changes reflected. ● Generate an alert when a product is below the minimum level.
Customer search for invoicing	Ensure that the salesperson can quickly find customers to expedite the billing process.	● Search for an existing customer by name. ● Search for a non-existent customer (expected error). ● Select a customer in the list and generate an invoice. ● Validate that the search response time is less than 2 seconds. ● Register a new customer from the search interface.
		● View the inventory status of a product.

Inventory status for orders to suppliers	Ensure that the administrator can correctly query the inventory status.	● Attempt to view the inventory of a non-existent product (expected error). ● Generate a purchase order based on the inventory status. ● Verify that the inventory quantity increases after receiving an order. ● Generate an inventory report with products in low stock.
Customers highlighted by type	Check that featured customers are correctly identified.	● Assign a featured category to a customer. ● Display featured customers in the general list. ● Attempt to highlight a customer without meeting the requirements (expected error). ● Apply automatic discounts to featured customers. ● Generate a report with featured customers and benefits applied.
Association of invoices to customers and suppliers	To ensure that the system correctly associates invoices to customers and suppliers.	● Associate an invoice to a customer and verify the history. ● Associate an invoice to a supplier and check the relationship. ● Try to associate an invalid invoice (expected error). ● Consult all invoices for a specific customer. ● Generate a report of associated invoices by customer and supplier.
Export of reports in Excel or PDF	Verify the correct generation and export	● Generate a report in Excel format.

	of reports.	● Generate a report in PDF format. ● Attempt to export a report without data (expected error). ● Verify the correct structure of the exported reports. ● Send a report by mail from the system.

6. Identify the strengths and weaknesses of each team member. It is suggested to assign roles to lead technical, organizational, and quality aspects. These elements are definitive in the success of the project and should be considered before starting development. Complete the following table mentioning the strategies established by the group in each case.

	ESTRATEGIAS	ENCARGADO
Aspectos técnicos	Use of version control tools (Git), good development practices, peer code review.	Technical Leader/Karol
Comunicación	Use of Slack or Discord for internal communication, daily meetings (Daily Scrum), clear documentation in Confluence or Notion.	Scrum Master/Yeferson
Aseguramiento de calidad	Definition of automated test cases, execution of manual tests in each sprint, review of user story acceptance criteria.	QA Tester/Ximena

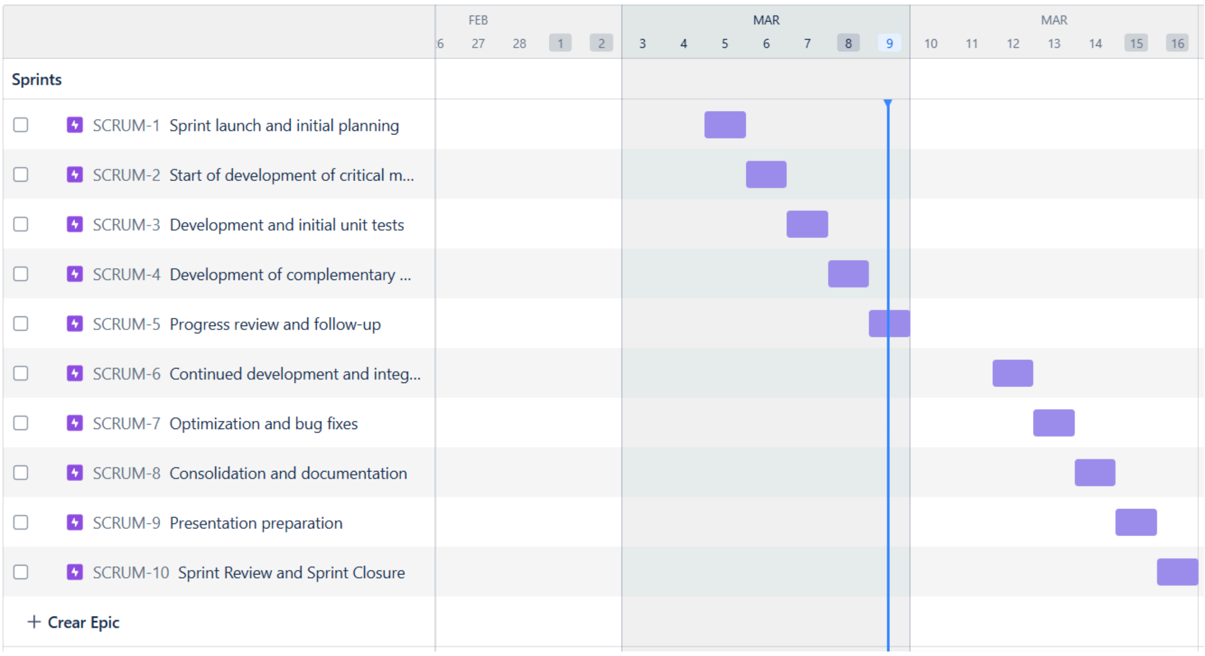
7. Propose a work schedule for the execution of the Sprint. Please note the following:

a. Integration and testing processes should be considered, as well as estimated completion dates for individual tasks.

b. Generate planning on Jira.

c. The estimated date for the completion of the Sprint is Friday from first exams week, but the presentation of the planning will be at march 5, so the sprint will have 2 weeks officially. The presentation on the increase of product (Sprint Review) will be made this day.

d. Progress in development must be evidenced through the project repository. Progress reviews will be made on Fridays.



Sprints

□ SCRUM-1 Sprint launch and initial planning

□ SCRUM-2 Start of development of critical m...

□ SCRUM-3 Development and initial unit tests

□ SCRUM-4 Development of complementary ...

□ SCRUM-5 Progress review and follow-up

□ SCRUM-6 Continued development and integ...

□ SCRUM-7 Optimization and bug fixes

□ SCRUM-8 Consolidation and documentation

□ SCRUM-9 Presentation preparation

□ SCRUM-10 Sprint Review and Sprint Closure

+ Crear Epic

DAY	MAIN ACTIVITIES	DETAILED TASKS
Week 1 - Monday	Sprint launch and initial planning	- Sprint kick-off meeting, definition of objectives and roles. - Start of documentation.
Week 1 - Tuesday	Start of development of critical modules	- Configuration of the project repository. - Initial design and development of the Inventory Control module.

Week 1 - Wednesday	Development and initial unit tests	- Development of the Invoice Generation module. - Execution of unit tests. - Verification of integration between Inventory and Invoicing.
Week 1 - Thursday	Development of complementary modules	- Development of the User Registration module (employees, customers, suppliers). - Start of the development of the Purchasing Control module. - Preparation of test cases.
Week 1 - Friday	Progress review and follow-up	- Weekly review meeting (Progress Review). - Integration and initial testing of the developed functionalities. - Update repository.
Week 2 - Monday	Continued development and integration	- Completion of User Registration and Purchase Control development. - Execution of unit tests and continuous integration.
Week 2 - Tuesday	Optimization and bug fixes	- Correction of bugs detected in tests. - Optimization of communication between modules. - Preliminary performance tests.
Week 2 - Wednesday	Consolidation and documentation	- Consolidation of technical and design documentation in the project page. - Execution of final integration tests.
Week 2 - Thursday	Presentation preparation	- Final code review and adjustments. - Preparation and testing of a demo for Sprint Review.
Week 2 - Friday	Sprint Review and Sprint Closure	- Presentation of product increment (Sprint Review on

		March 5th). - Demonstration of progress in the repository. - Sprint Retrospective.

8. All documentation related to design and planning should be available on Jira and on the project page.

https://perfumeria.atlassian.net/jira/software/projects/SCRUM/boards/1