

DELIVERABLE 3: SOLUTION PROPOSALS - DATA SCIENTIST

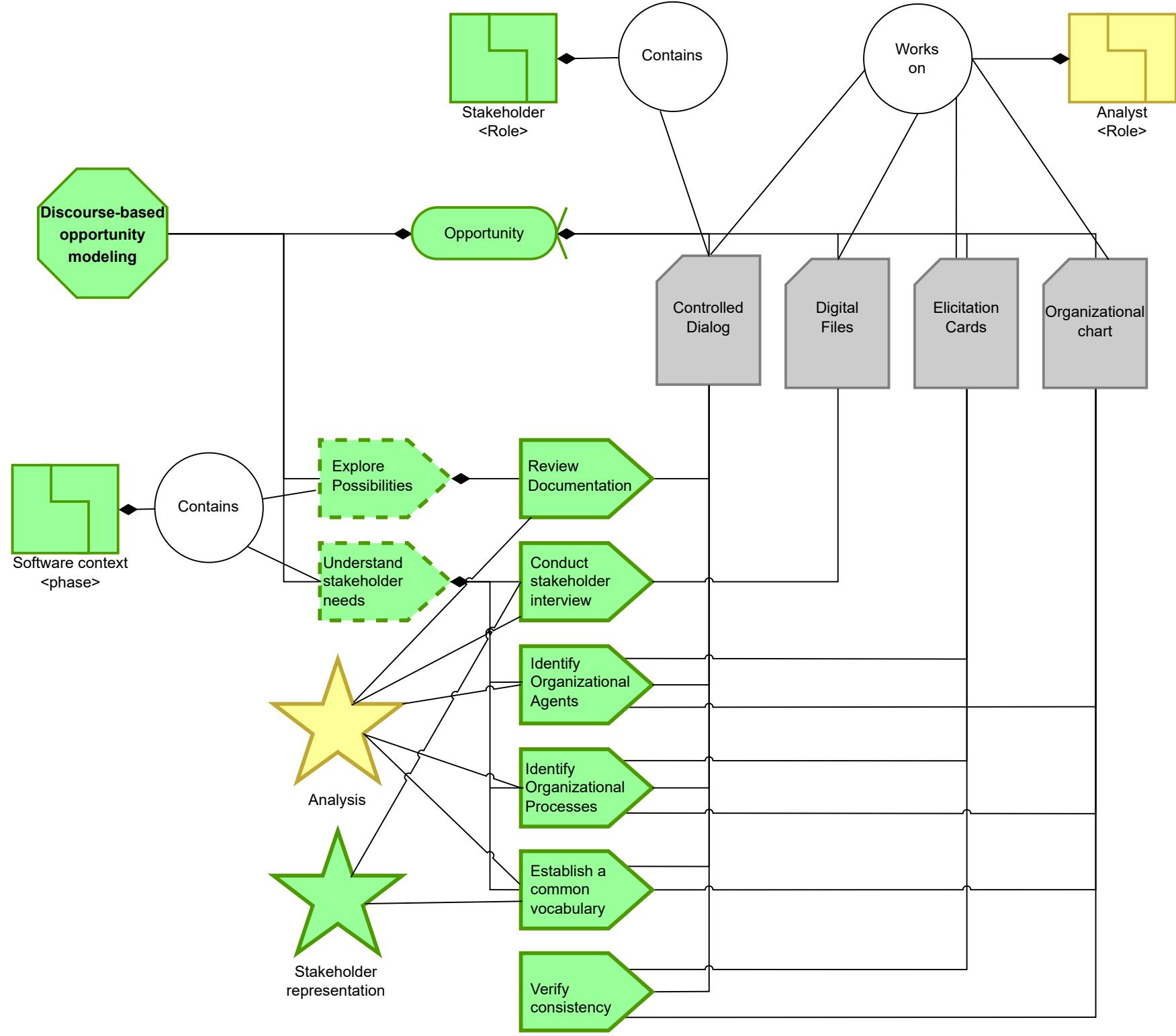
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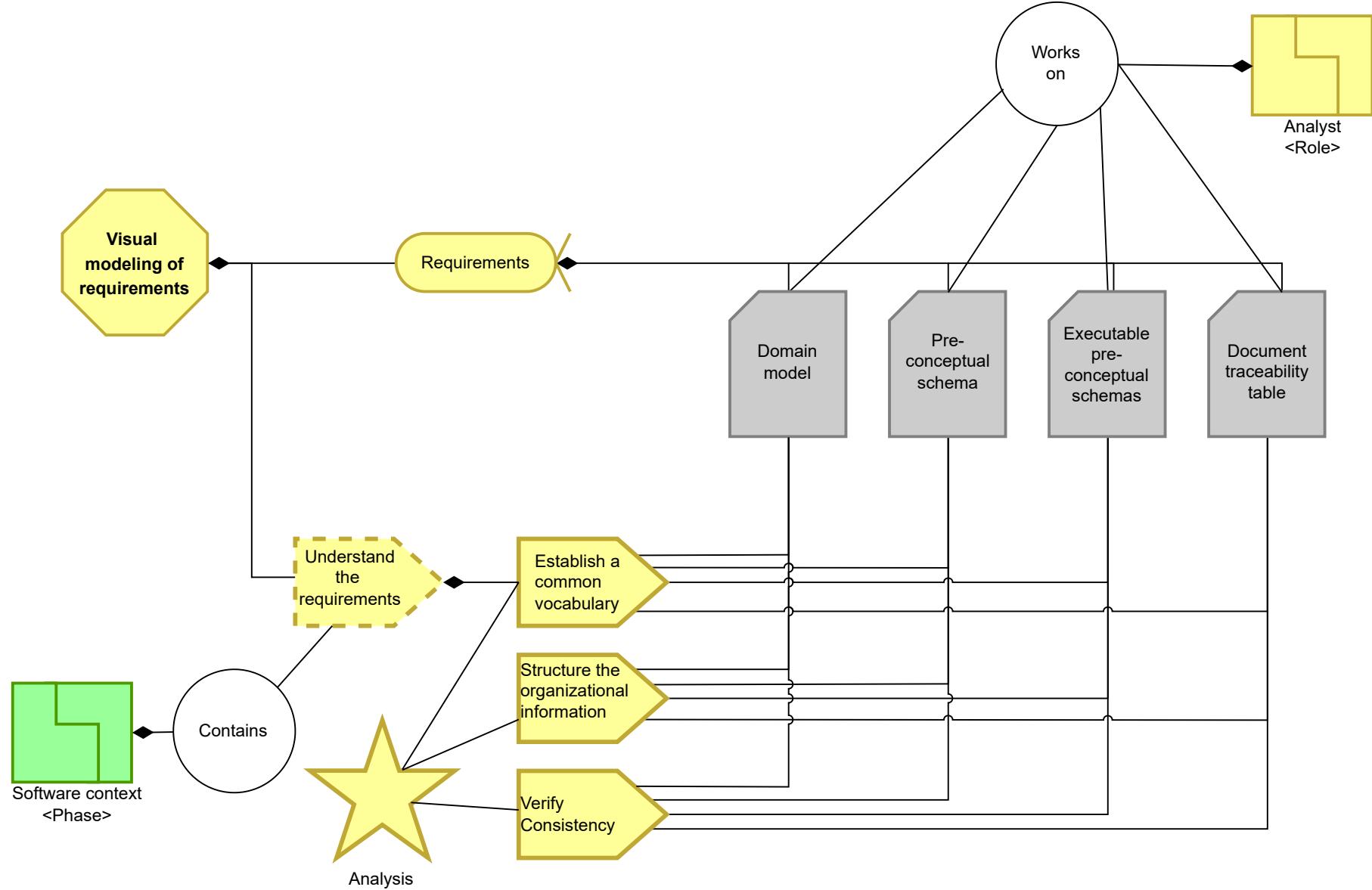
JAIME ANDRÉS MONSALVE BALLESTEROS

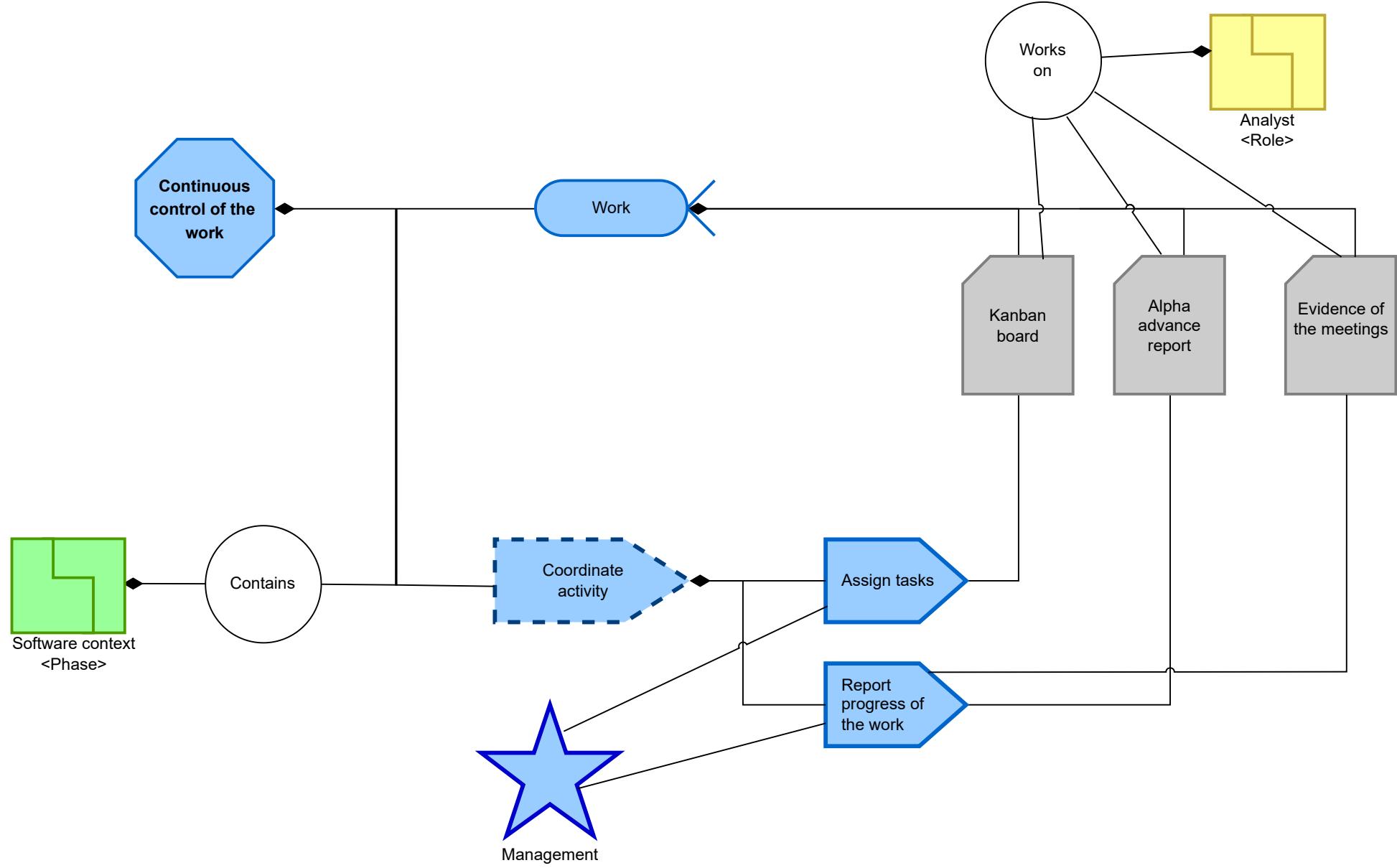
FREDY ALBERTO OROZCO LOAIZA

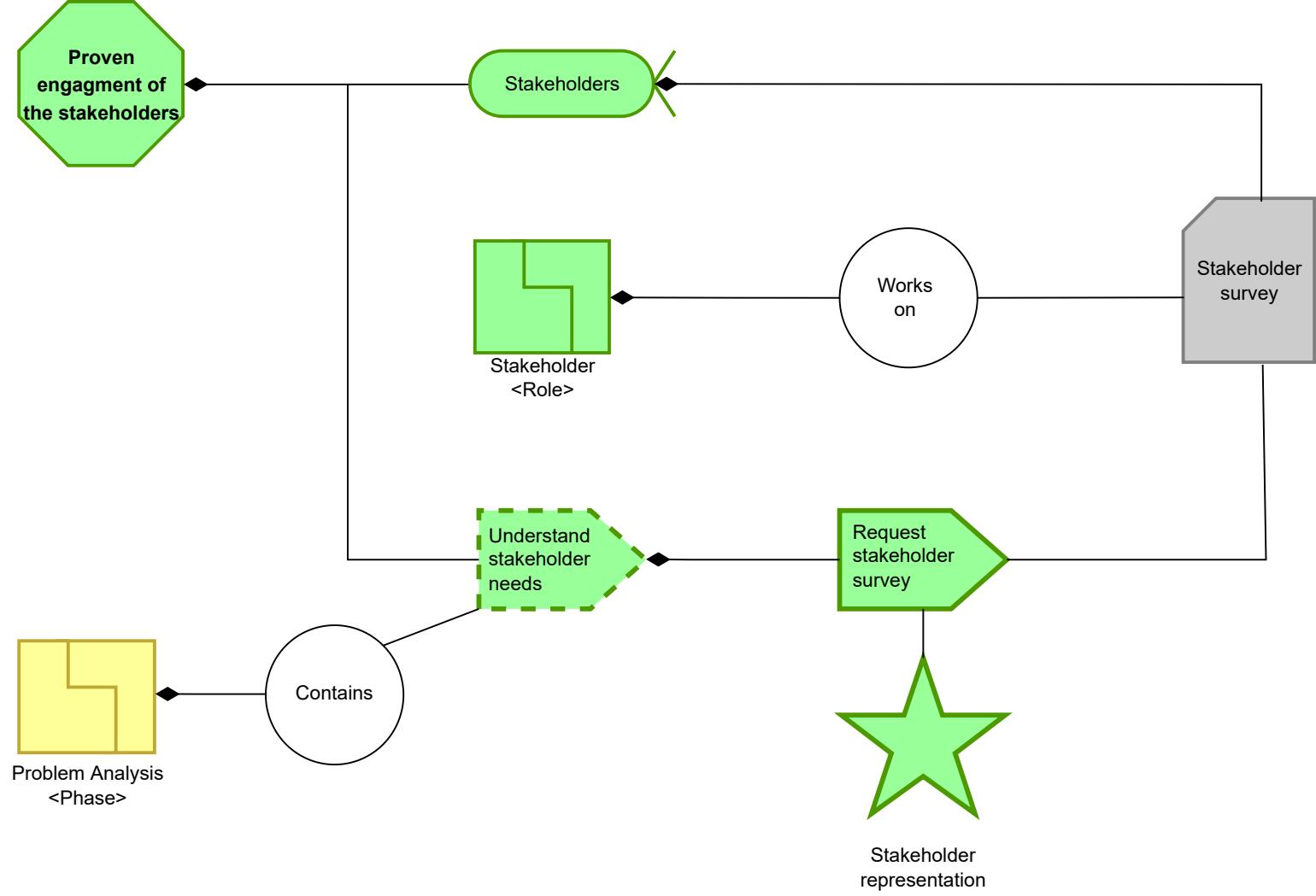
DIEGO VALENTÍN OSORIO MARÍN

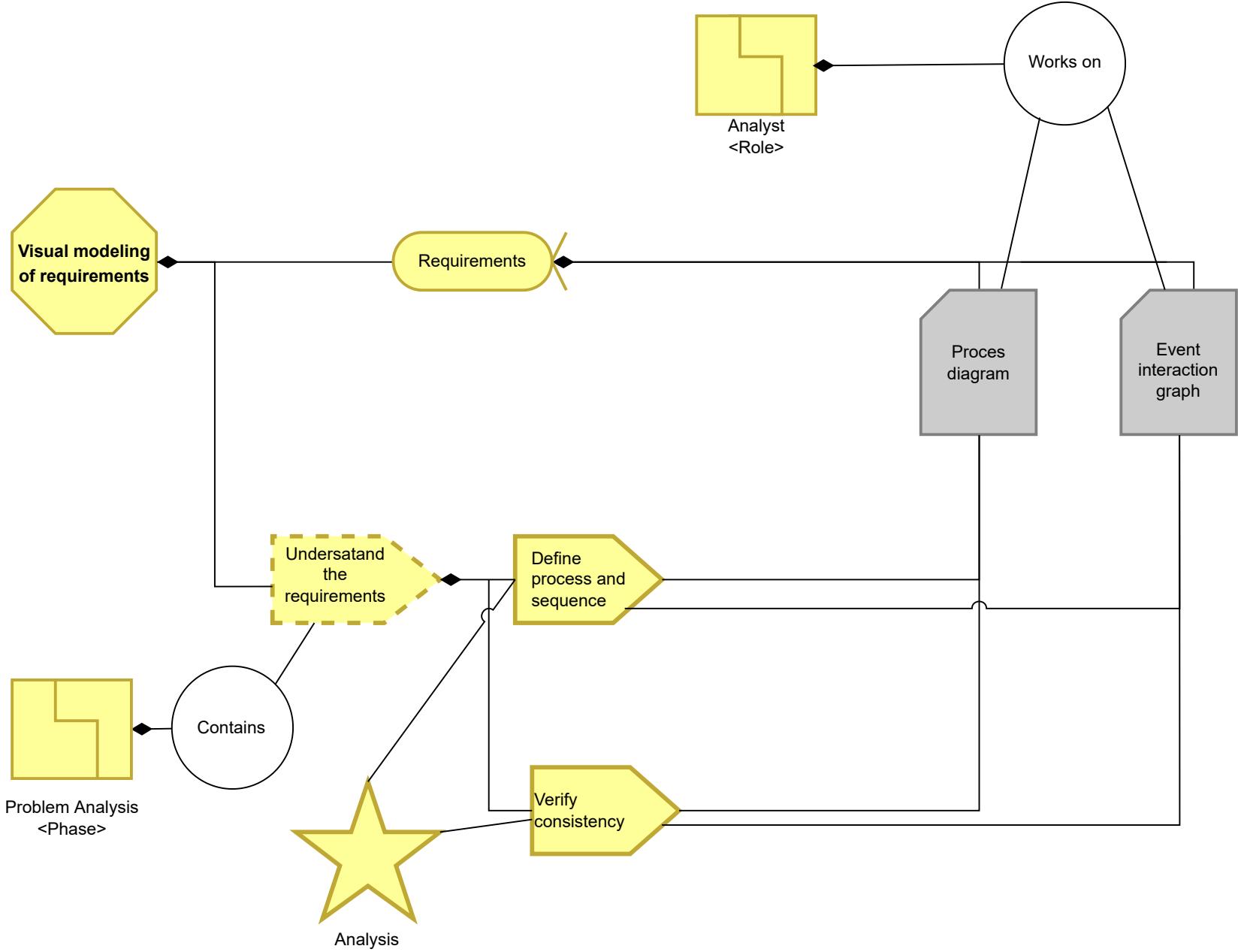
Computing and Decision Sciences Department. Faculty of Mines. Universidad Nacional de
Colombia.

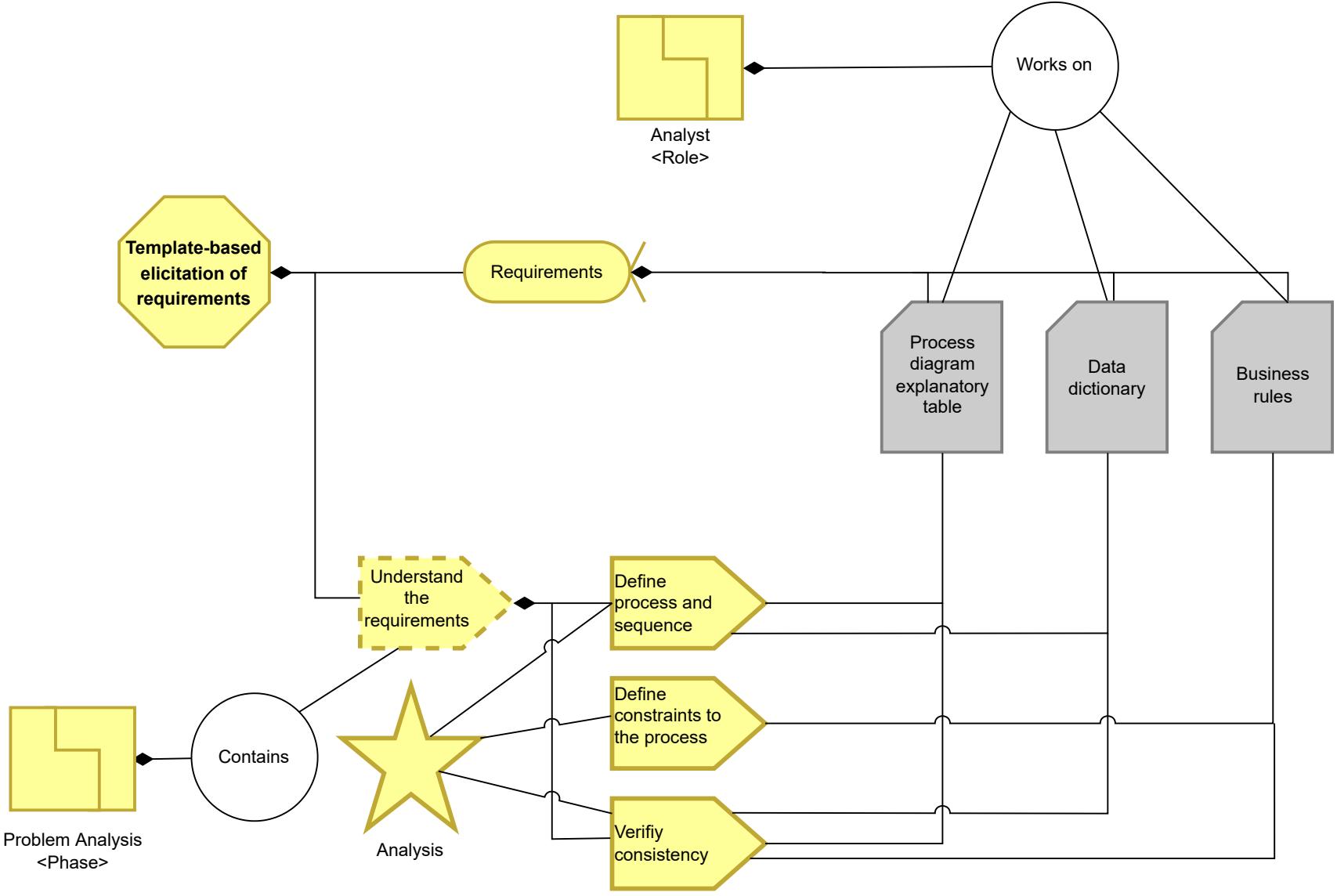


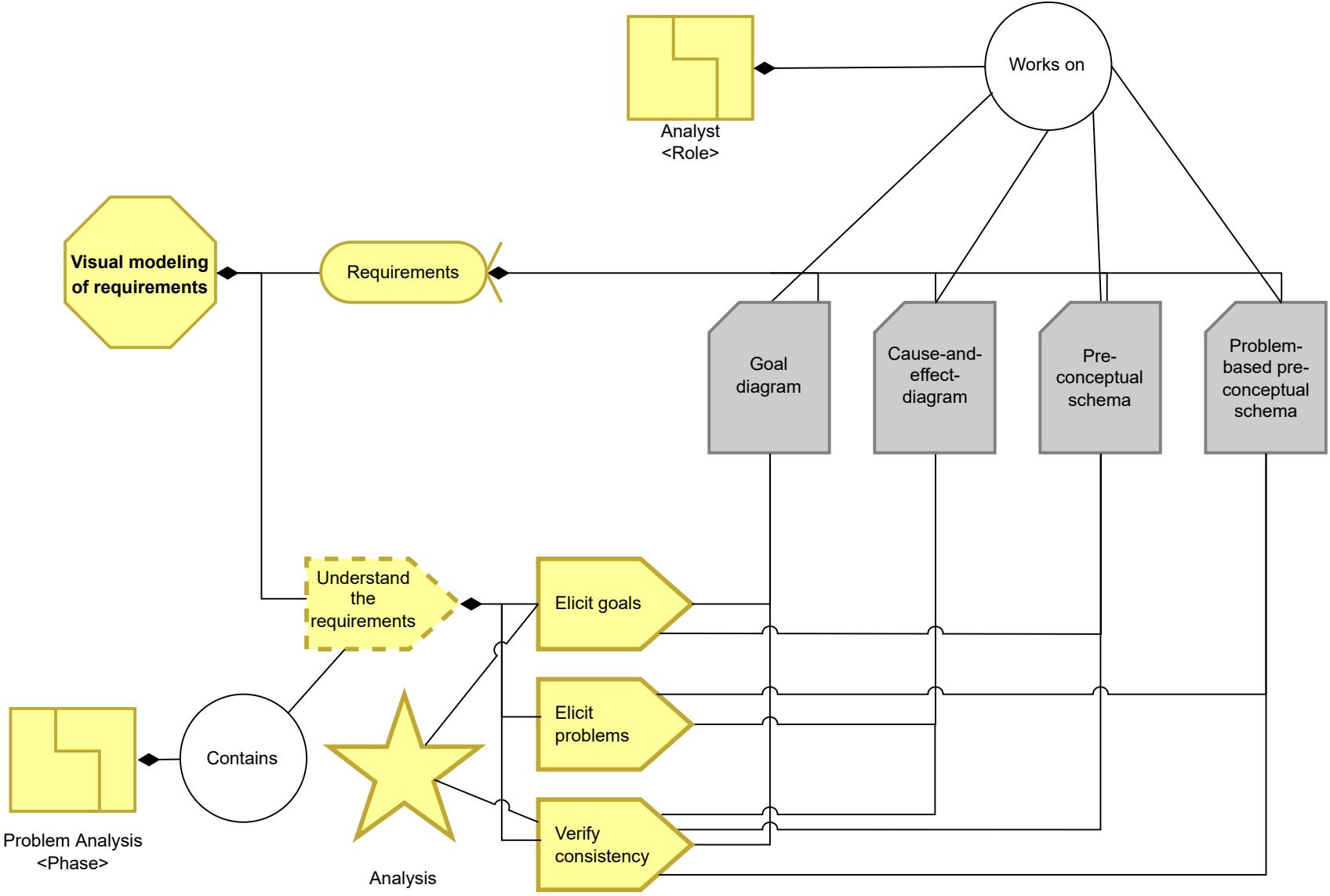


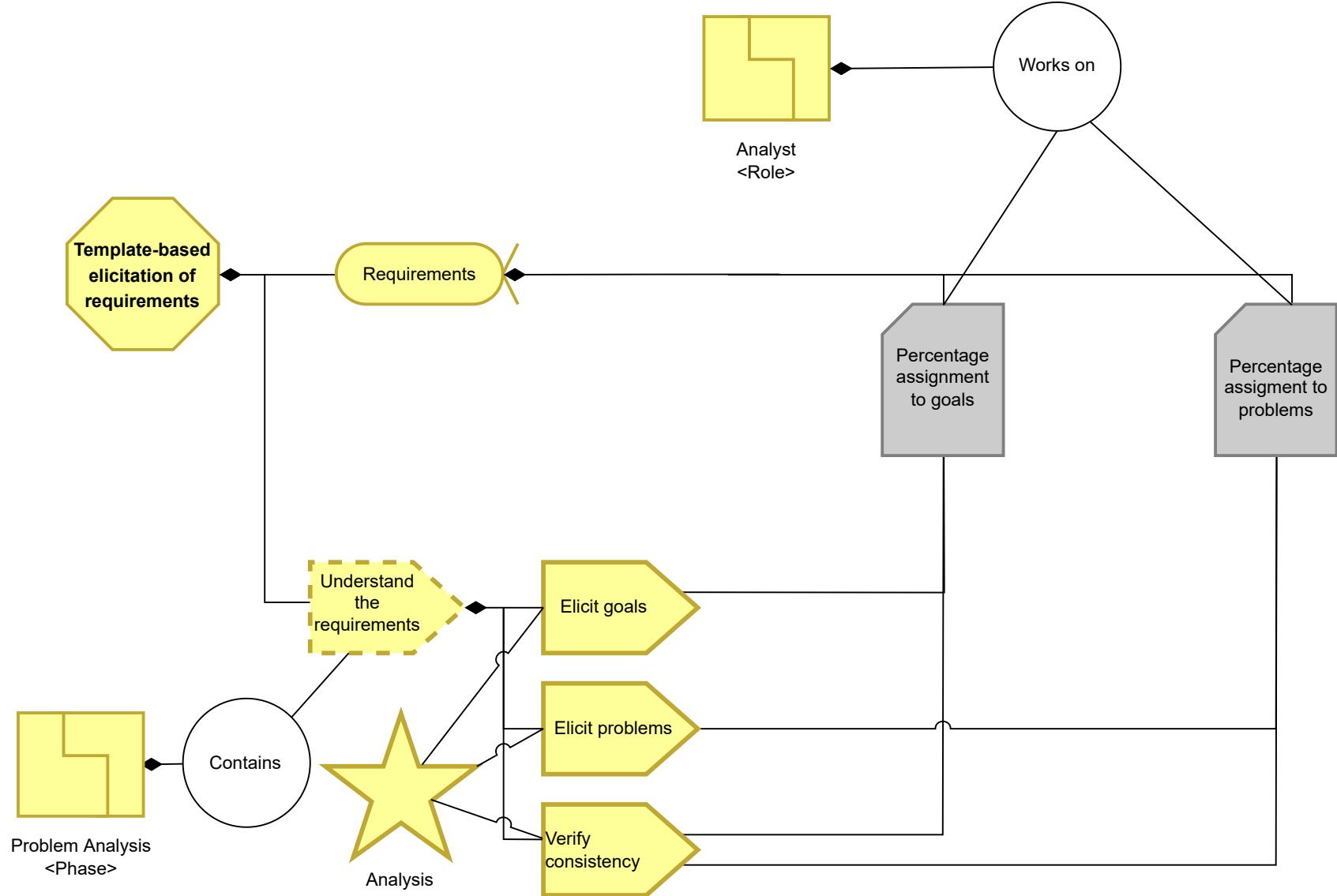


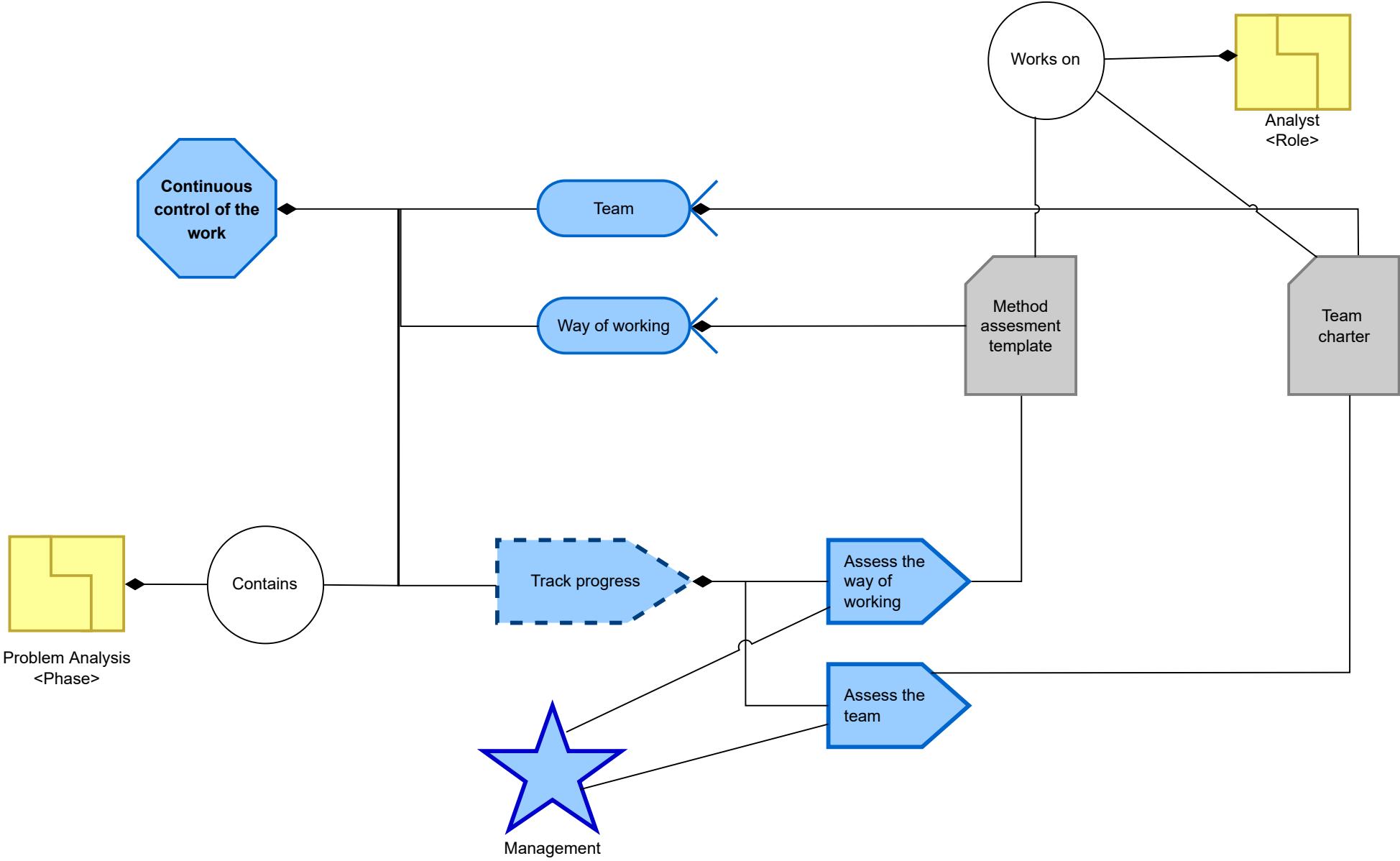


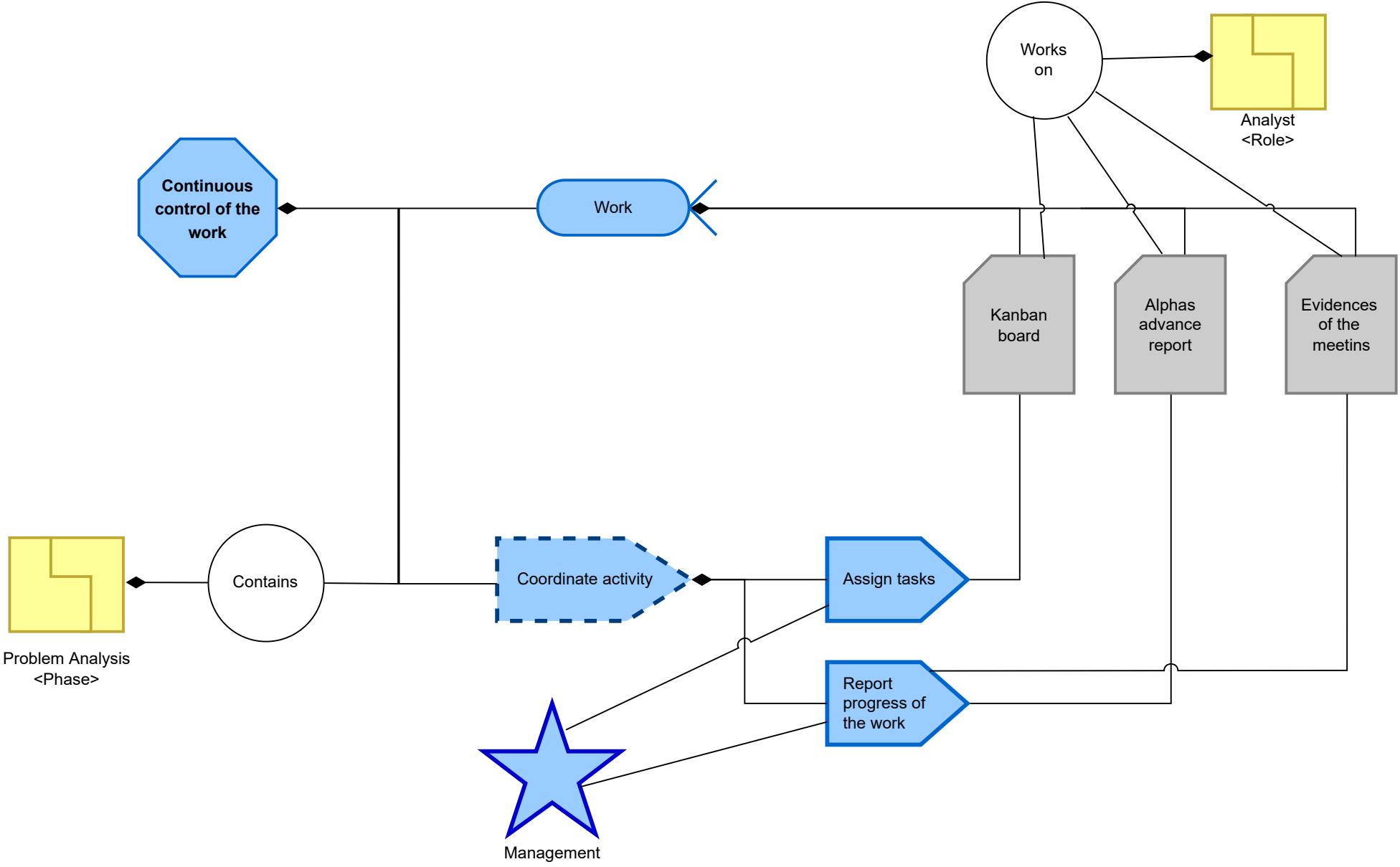


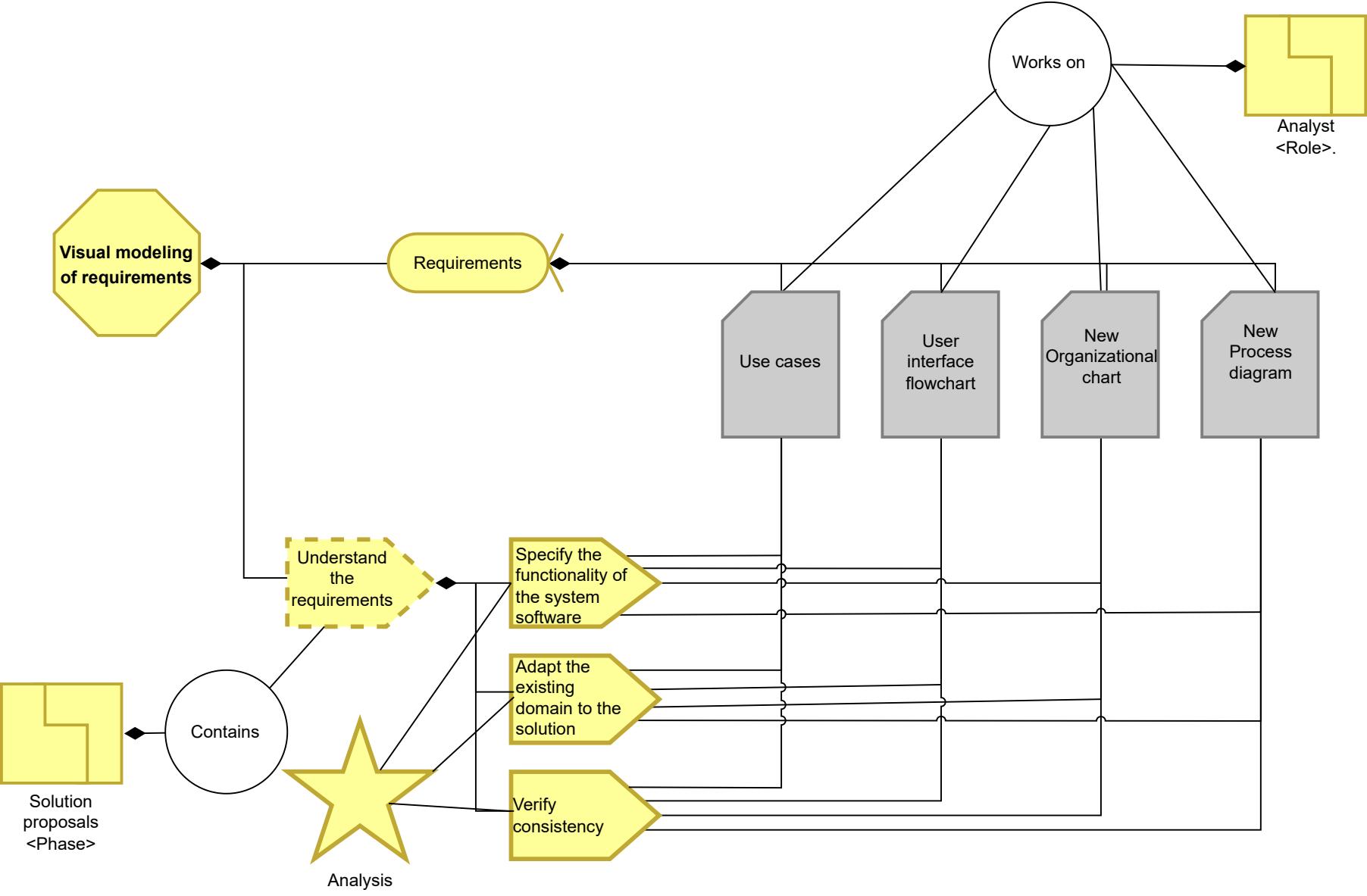


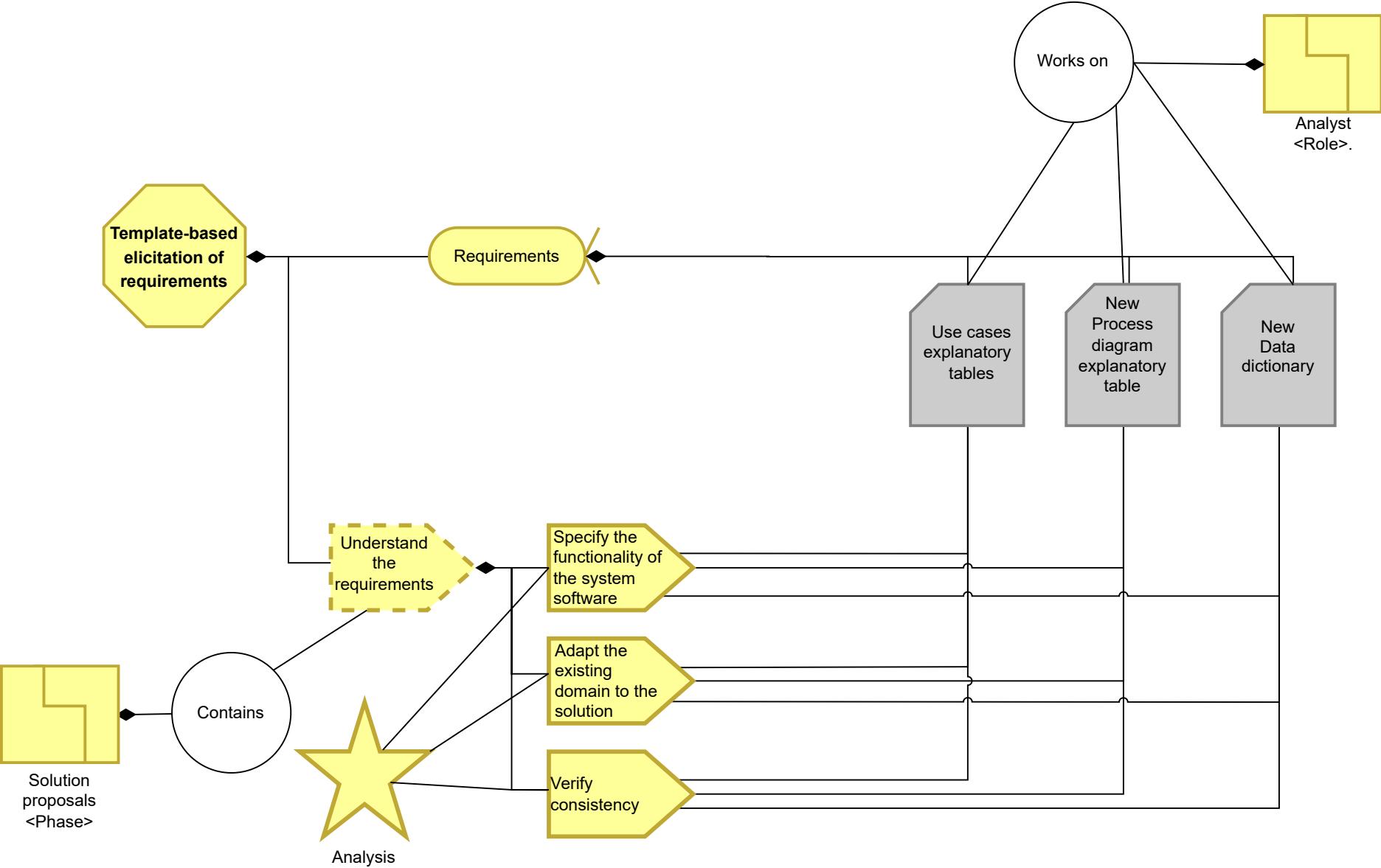


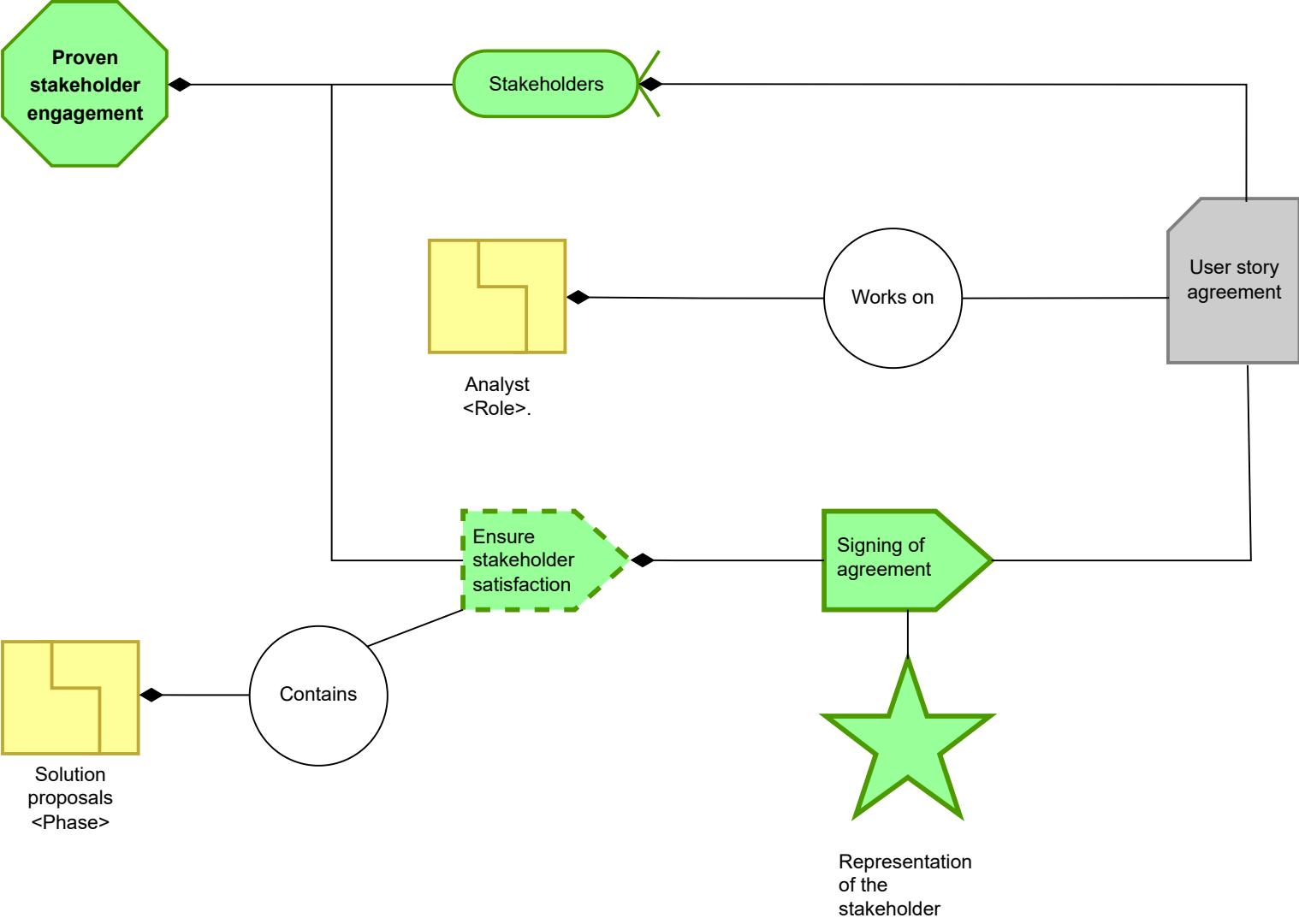


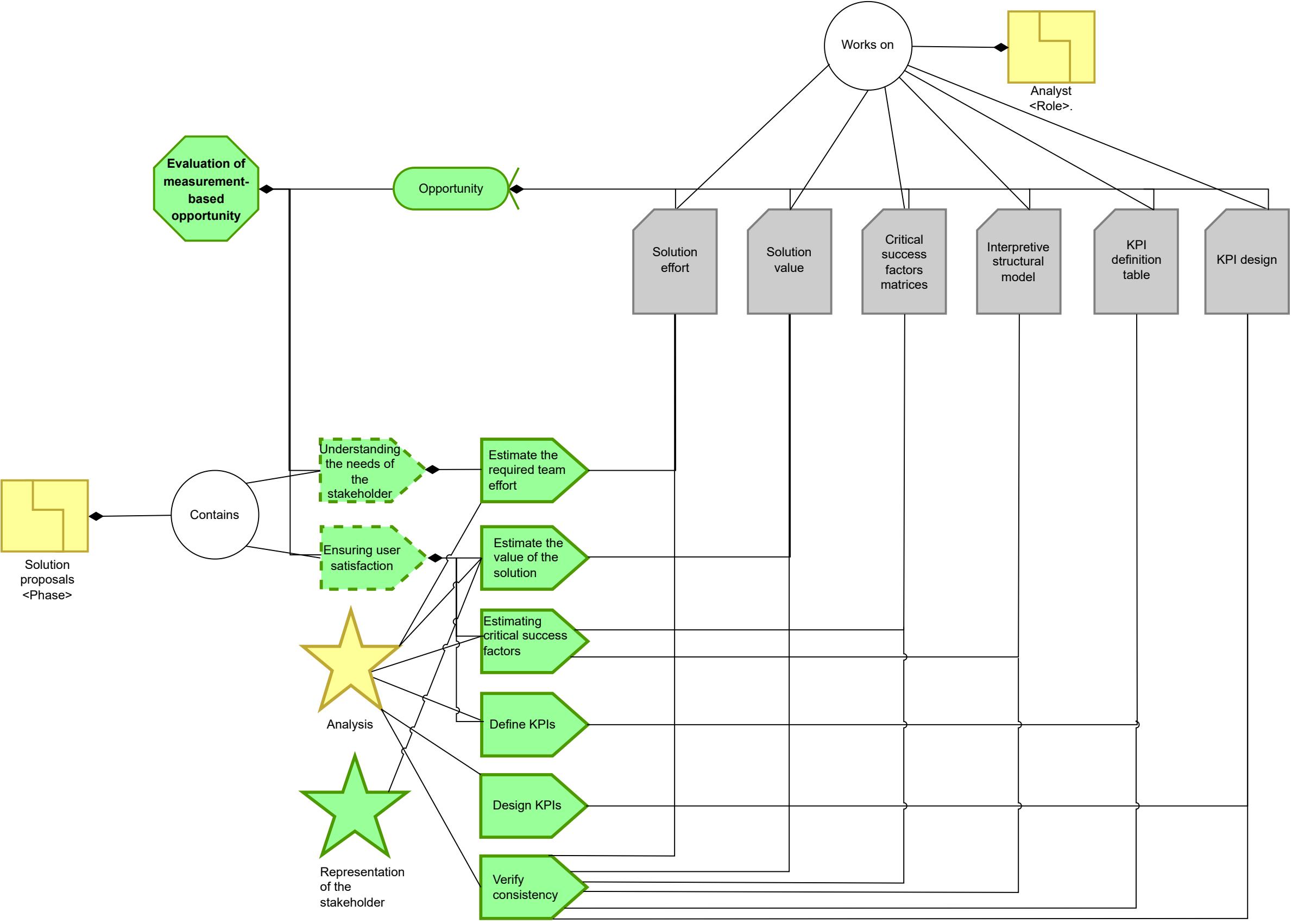


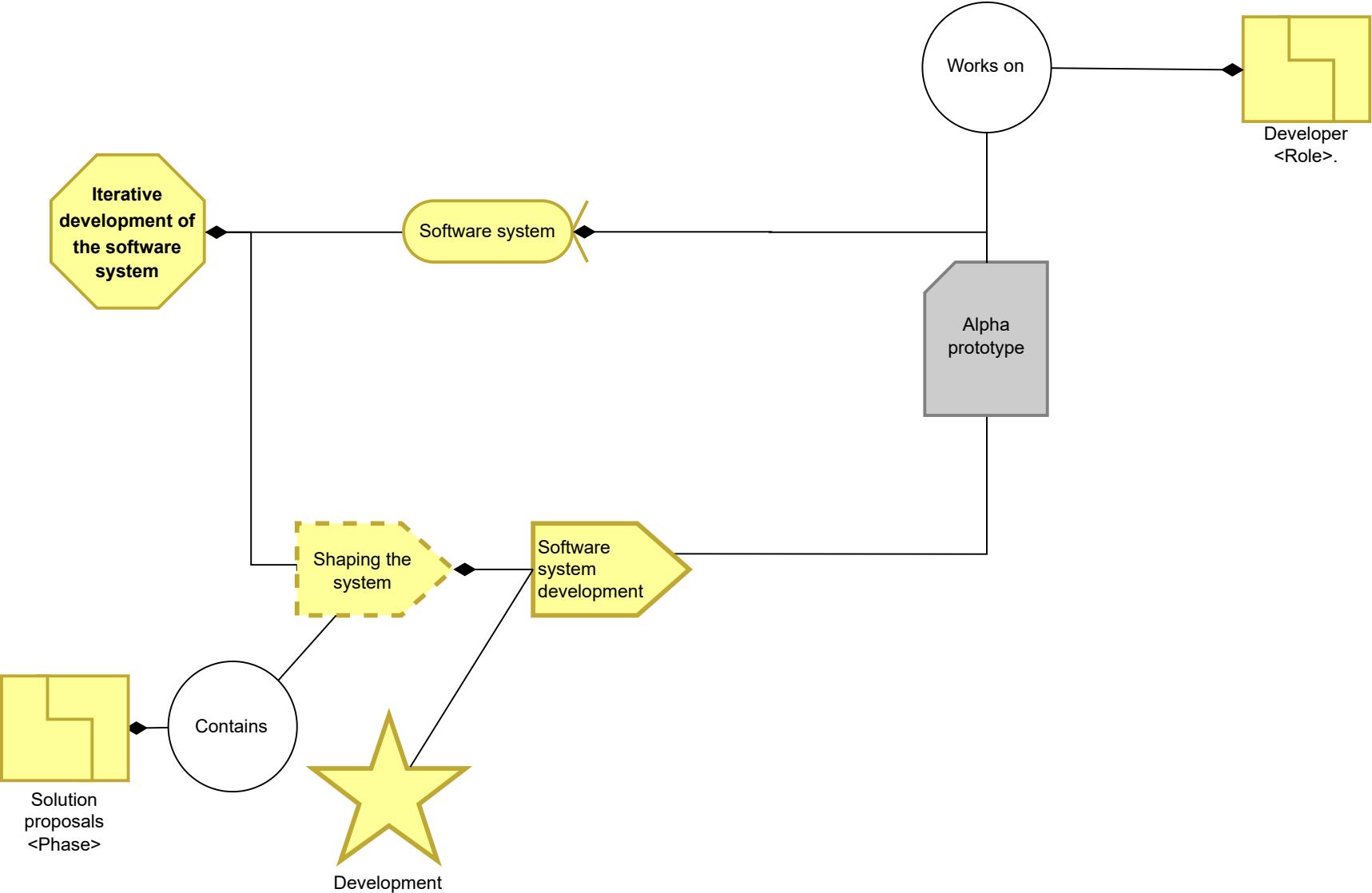


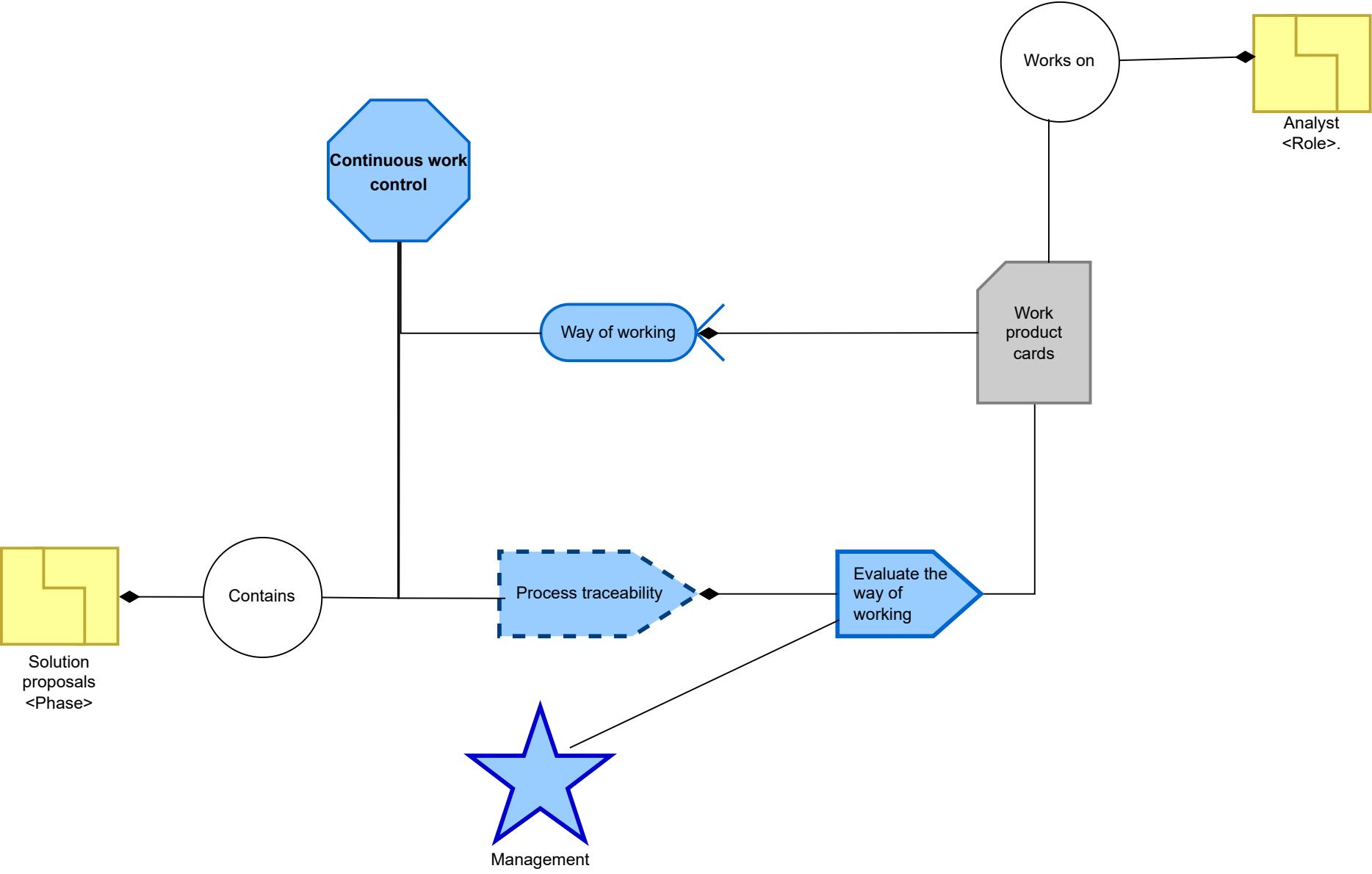


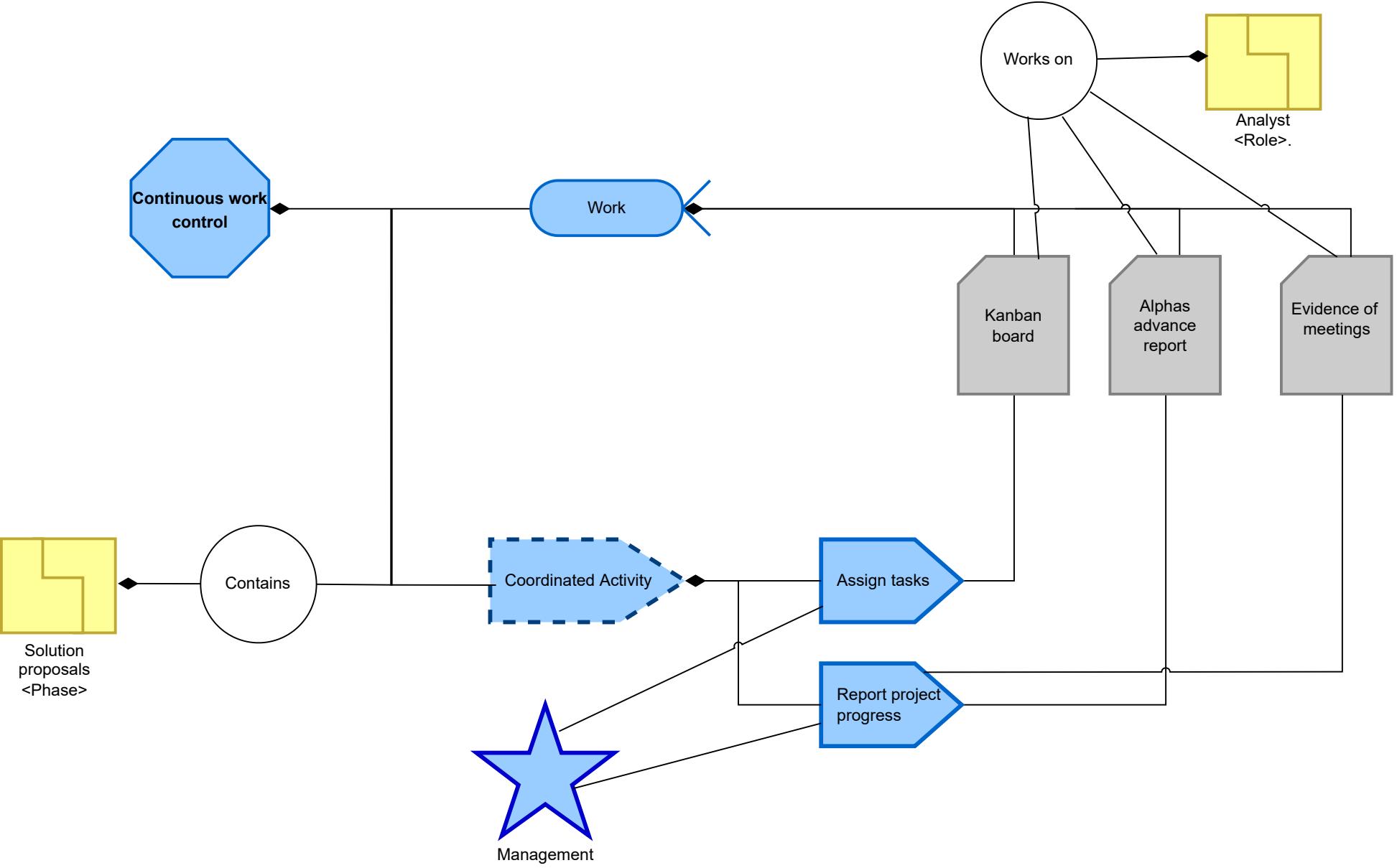












DIGITAL FILES

 BACK

Option 1:

<https://drive.google.com/drive/folders/1YkQ115wx5qaZQPMVM55TKLfjzOK2vc2U?usp=sharing>

Option 2:

<https://drive.google.com/drive/folders/18KEbRElaHxSbiCZtfsCLBqjPhIrmScvo?usp=sharing>

CONTROLLED DIALOGUE

 BACK

Analyst: Good morning. With this interview, we aim to clarify the information concerning the problem domain in which we will work. Please answer the questions in the clearest way possible.

Stakeholder: O.k. Let's start.

Analyst: What is your role within the organization?

Stakeholder: I play the role of Data Scientist.

Analyst: Please, list the internal/external actors linked to the activities of your organization.

Stakeholder: We have users, employees, clients, data scientists, administrators and stakeholders.

Analyst: Who can play the role of a user?

Stakeholder: An employee, a stakeholder and an administrator.

Analyst: Who can play the role of an employee?

Stakeholder: A data scientist.

Analyst: Would you please mention some characteristics of users?

Stakeholder: They have name, e-mail, password, role and unique identification.

Analyst: Would you please mention some characteristics of employee?

Stakeholder: They have job title and experience.

Analyst: Would you please mention some characteristics of data scientists?

Stakeholder: They have background and style.

Analyst: Please list the main functions of a stakeholder.

Stakeholder: He/she provides data.

Analyst: Please list the main functions of the administrator.

Stakeholder: The administrator creates, edits and deletes users.

Analyst: Please list the main functions of the data scientists.

Stakeholder: The data scientist; evaluates user requirements, cleans data, extracts summary, determines model, builds applications, updates model, releases result and evaluates result.

Analyst: Are these functions gathered in some sort of responsibility?

Stakeholder: Yes, creates, edits and deletes users are gathered as “manage users”; cleans data and extracts summary are gathered as “pre-process data”; determines model, builds application and updates model are gathered as “process data”; releases and evaluates result are gathered as “post-process data”.

Analyst: Would you please mention some features of the data?

Stakeholder: Each data has version, file, type, classification, creation date, update date, description, size, format, quality, summary, application and unique name.

Analyst: Would you please mention some features of the model?

Stakeholder: It has type, application and unique name.

Analyst: Would you please mention some features of the application?

Stakeholder: It has version, creation date, tool, version control system, update date and solution.

Analyst: Would you please mention some features of the project?

Stakeholder: It has status, start date, end date, pre-processing tool, solution validation, users, user requirements, data and result.

Analyst: Would you please mention some features of the result?

Stakeholder: It has update date, file, creation date, version, type and feedback.

Analyst: Which of the mentioned features have features themselves?

Stakeholder: Summary has validity, creation date, description and file; Solution has update date, file, description, version, creation date and performance; user requirement has a user story, description, status and a unique name; feedback has comment and date.

Analyst: Which values or instances can be associated to which feature?

Stakeholder: True and False are instances of validity; insight providers, modeling specialist, platform builder, polymath and team leader are instances of style; low and high are instances of quality; structured data and unstructured data are instances of type of data; attributes, database, images, video footage, audio and handwritten note are instances of format of data; finished and in progress are instances of project status; administrator, data scientist and stakeholder are instances of user role; git, dvc, codecommit and sourcetree are instances of version control system; deterministic and random are instances of data classification.

Analyst: What does the administrator need in order to accomplish the managing of users?

Stakeholder: He/she only needs user.role = administrator.

Analyst: What does the administrator need in order to accomplish the creation of an user?

Stakeholder: He/she only needs user.role = administrator and the arising of an user.

Analyst: What does the data scientist need in order to accomplish the evaluation of user requirement?

Stakeholder: He/she only needs the arising of user requirements.

Analyst: What does the stakeholder need in order to accomplish the providing of data?

Stakeholder: He/she only needs: user.role = stakeholder and, the arising of an stakeholder or summary validity = false.

Analyst: What does the data scientist need in order to accomplish the pre-processing of the data?

Stakeholder: He/she only needs: user.role = data scientist and project status = in progress

Analyst: What does the data scientist need in order to accomplish the cleaning of data?

Stakeholder: He/she only needs: user.role = data scientist, project status = in progress, the data be provided before by the stakeholder and data quality = low.

Analyst: What does the data scientist need in order to accomplish the extraction of the summary?

Stakeholder: He/she only needs: user.role = data scientist, project status = in progress, the data be provided before by the stakeholder and, data quality = high or the data be cleaned before.

Analyst: What does the data scientist need in order to accomplish the processing of the data?

Stakeholder: He/she only needs: user.role = data scientist.

Analyst: What does the data scientist need in order to accomplish the determination of a model?

Stakeholder: He/she only needs: user.role = data scientist and summary validity = true.

Analyst: What does the data scientist need in order to accomplish the building of an application?

Stakeholder: He/she only needs: user.role = data scientist and the model be determined before.

Analyst: What does the data scientist need in order to accomplish the updating of a model?

Stakeholder: He/she only needs: user.role = data scientist, the model be determined before and solution performance < project solution validation.

Analyst: What does the data scientist need in order to accomplish the post-processing of the data?

Stakeholder: He/she only needs: user.role = data scientist.

Analyst: What does the data scientist need in order to accomplish the release of a result?

Stakeholder: He/she only needs: user.role = data scientist, and solution performance \geq project solution validation.

Analyst: What does the data scientist need in order to accomplish the evaluation of a result?

Stakeholder: He/she only needs: user.role = data scientist, and the appearance of feedback.

Analyst: Would you please establish some sort of sequence in the functions and responsibilities you have just described?

Stakeholder: First the data scientist evaluates the user requirements; then he waits for the stakeholder to show up, and then the stakeholder provides the data, then, in the pre-processing of the data, the data scientist cleans the data and then extracts a summary from the data; In the processing of the data the data scientist determines a model, then he can build and application or update the model; Last, in the post-processing of the data the data scientist releases the result and waits for feedback to be evaluated.

Analyst: What are the goals and problems associated with the function “extracts summary”?

Stakeholder: The goals are “Increasing the quality of data” and “Fostering data has summary”. The only problem is “Data scientist evaluates user requirements hardly”.

Analyst: What are the goals and problems associated with the function “cleans data”?

Stakeholder: The only goal is “Increasing the quality of data”. The only problems is “Stakeholder provides data wrongly”.

Analyst: What are the goals and problems associated with the function “provides data”?

Stakeholder: The only goal is “Ensuring project has data”. The only problems is “Stakeholder provides data wrongly”.

Analyst: What are the goals and problems associated with the function “determines model”?

Stakeholder: The only goal is “Obtaining the type of model”. The only problem is “data scientist does not have experience”.

Analyst: What are the goals and problems associated with the function “builds application”?

Stakeholder: The only goal is “Accomplishing application has solution”. The only problem is “Application does not have version control system”.

Analyst: What are the goals and problems associated with the function “updates model”?

Stakeholder: The goals are “Accomplishing application has solution” and “Enhancing the performance of the solution”. The only problem is “Application does not have version control system”.

Analyst: What are the goals and problems associated with the function “evaluates result”?

Stakeholder: The goals are “Conserving the end date of the project” and “Controlling the status of the project”. This function has no problems.

Analyst: What are the goals and problems associated with the function “releases result”?

Stakeholder: The only goal is “achieving the result”. This function has no problems.

Analyst: What are the goals and problems associated with the function “evaluates user requirements”?

Stakeholder: The only goal is “Obtaining the type of model”. The problems are “Data scientist does not have experience” and “Data scientist evaluates user requirements hardly”.

Analyst: What are the goals and problems associated with the function “creates user”?

Stakeholder: The only goal is “Maintaining the users”. This function has no problems.

Analyst: What are the goals and problems associated with the function “edits user”?

Stakeholder: The only goal is “Maintaining the users”. This function has no problems.

Analyst: What are the goals and problems associated with the function “deletes user”?

Stakeholder: The only goal is “Maintaining the users”. This function has no problems.

Analyst: Thank you for your valuable information. We will be in contact in order to clarify any doubts that may arise in this process.

Stakeholder: Thank you. I'll be in touch.

ELICITATION CARDS

ACTOR	
USER	
FEATURES	NAME, E-MAIL, PASSWORD, ROLE, and IDENTIFICATION is unique

ANNOTATIONS	

ACTOR	
EMPLOYEE	
FEATURES	JOB TITLE, EXPERIENCE

ANNOTATIONS	
	EMPLOYEE can be USER

ACTOR	
ADMINISTRATOR	
FEATURES	

ANNOTATIONS	
	ADMINISTRATOR can be USER

ACTOR	
STAKEHOLDER	
FEATURES	

ANNOTATIONS	
	STAKEHOLDER can be USER

ACTOR	
DATA SCIENTIST	
FEATURES	BACKGROUND, STYLE

ANNOTATIONS	
	DATA SCIENTIST can be EMPLOYEE

OBJECT**ANNOTATIONS****DATA****FEATURES**

NAME is unique, VERSION, FILE, TYPE, CLASSIFICATION, CREATION DATE, UPDATE DATE, DESCRIPTION, SIZE, FORMAT, QUALITY

DATA is related to SUMMARY and APPLICATION

OBJECT**ANNOTATIONS****SUMMARY****FEATURES**

VALIDITY, CREATION DATE, DESCRIPTION, FILE

OBJECT**ANNOTATIONS****APPLICATION****FEATURES**

VERSION, CREATION DATE, TOOL, VERSION CONTROL SYSTEM, UPDATE DATE

APPLICATION is related to SOLUTION

OBJECT**ANNOTATIONS****SOLUTION****FEATURES**

UPDATE DATE, FILE, DESCRIPTION, VERSION, CREATION DATE, PERFORMANCE

OBJECT**ANNOTATIONS****MODEL****FEATURES**

TYPE, NAME is unique

MODEL is related to APPLICATION

OBJECT**ANNOTATIONS****USER REQUIEREMENT****FEATURES**

CODE is unique, USER STORY, DESCRIPTION, STATUS

PROJECT is related to USER, USER REQUIEREMENT, DATA and RESULT

OBJECT**ANNOTATIONS****PROJECT****FEATURES**

NAME is unique, STATUS, START DATE, END DATE, PRE-PROCESING TOOL, SOLUTION VALIDATION

COMMENT, DATE

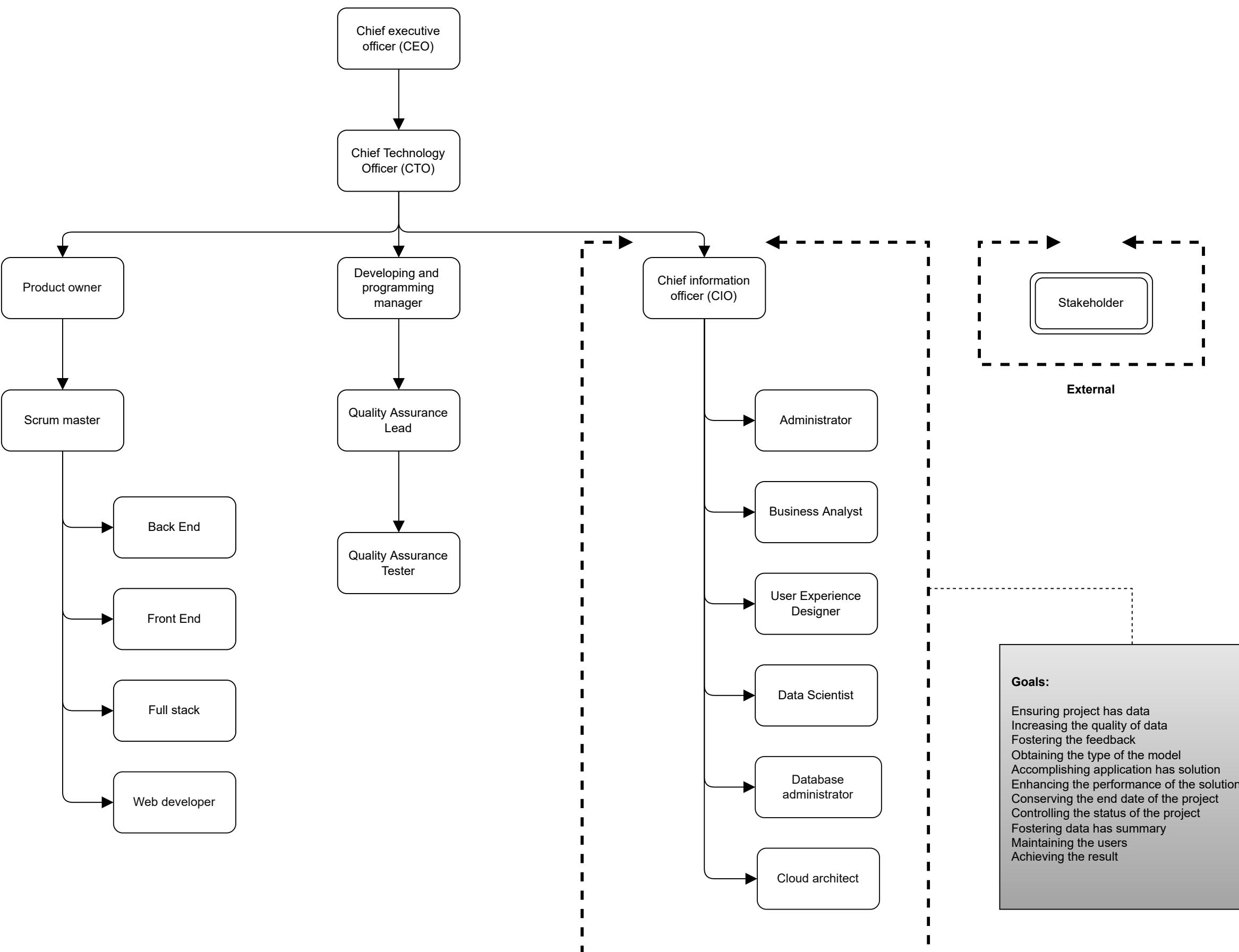
RESULT is related to FEEDBACK

OBJECT**ANNOTATIONS****FEEDBACK****FEATURES**

COMMENT, DATE

ORGANIZATIONAL CHART

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Goals:

- Ensuring project has data
- Increasing the quality of data
- Fostering the feedback
- Obtaining the type of the model
- Accomplishing application has solution
- Enhancing the performance of the solution
- Conserving the end date of the project
- Controlling the status of the project
- Fostering data has summary
- Maintaining the users
- Achieving the result

Problem Area:

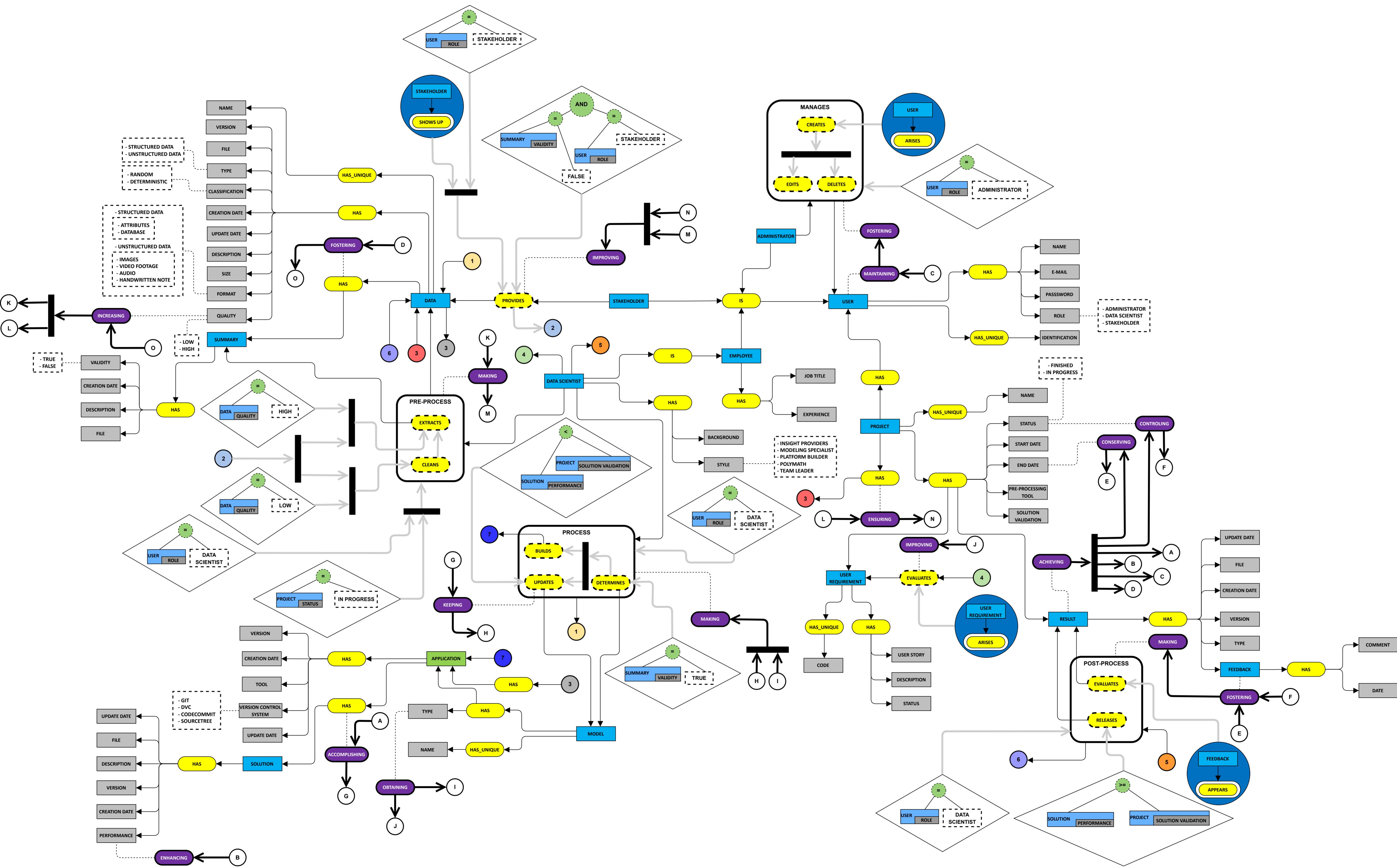
Chief information officer (CIO), Business Analyst, User Experience Designer, Data Scientist, Database administrator, Cloud architect and Administrator

Responsibilities:

Manages users
Pre-process data
Process data
Post-process data

PRE-CONCEPTUAL SCHEMA WITH ACHIEVEMENT SETS

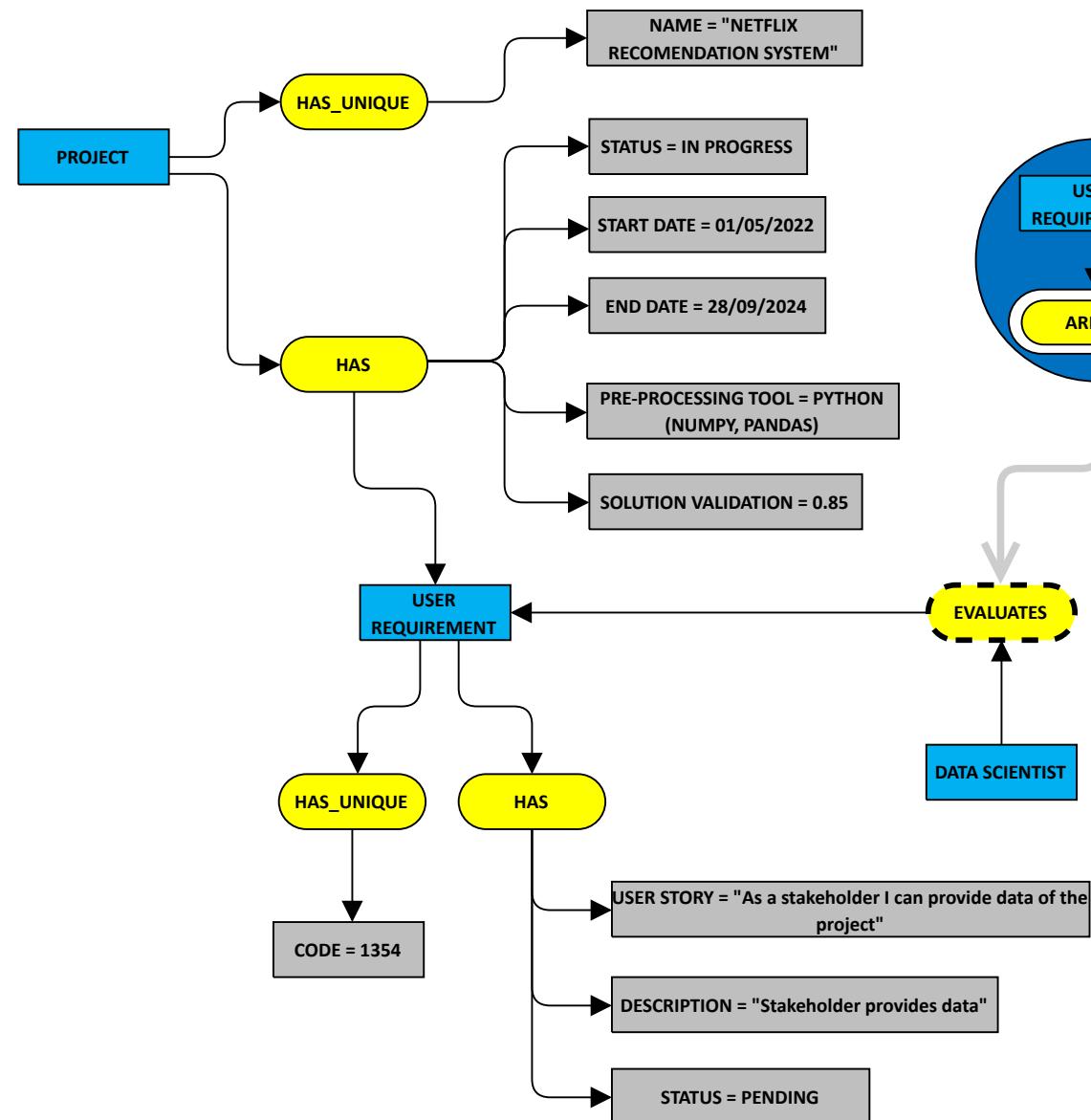
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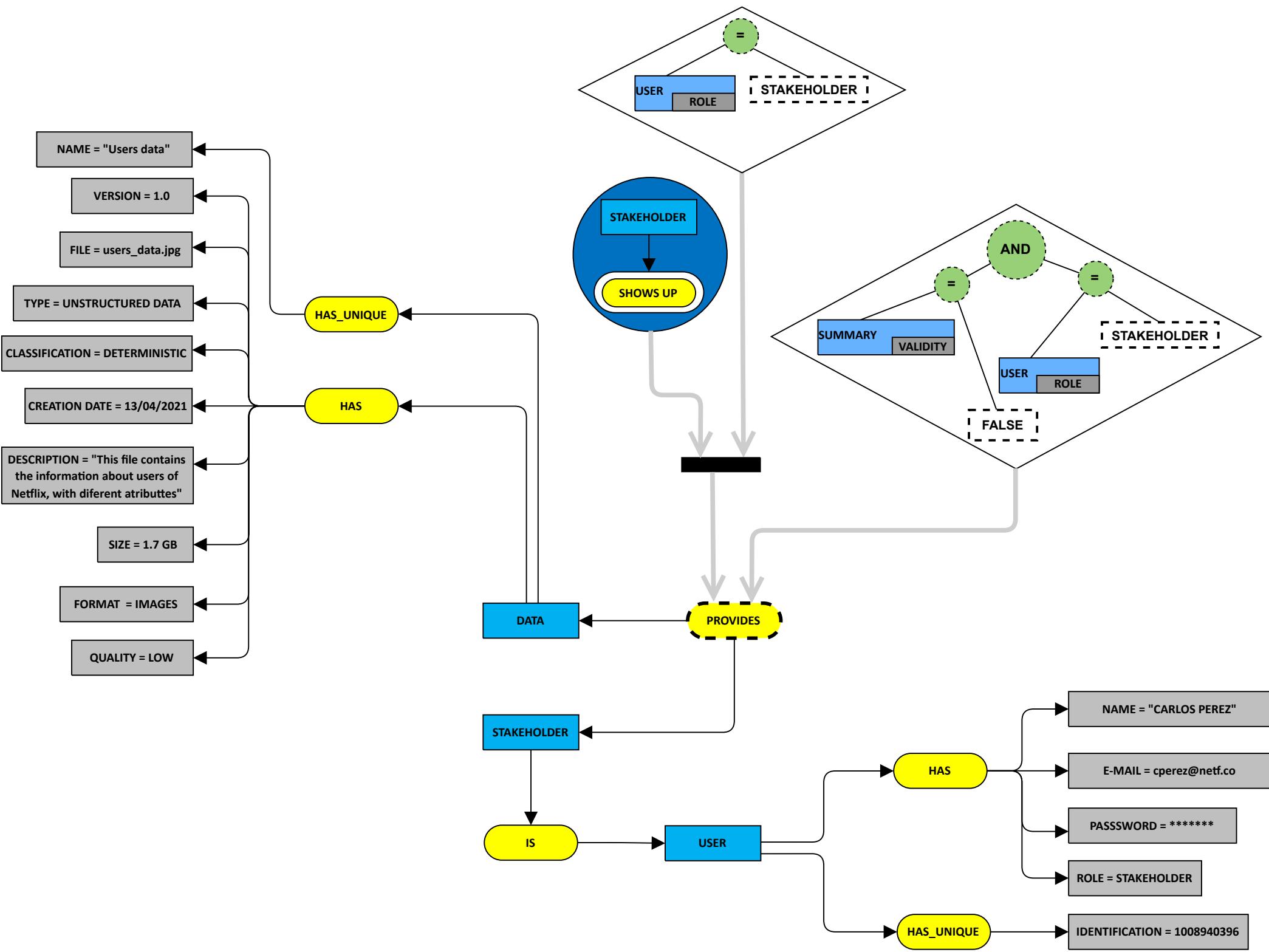
EXECUTABLE PRE-CONCEPTUAL SCHEMAS

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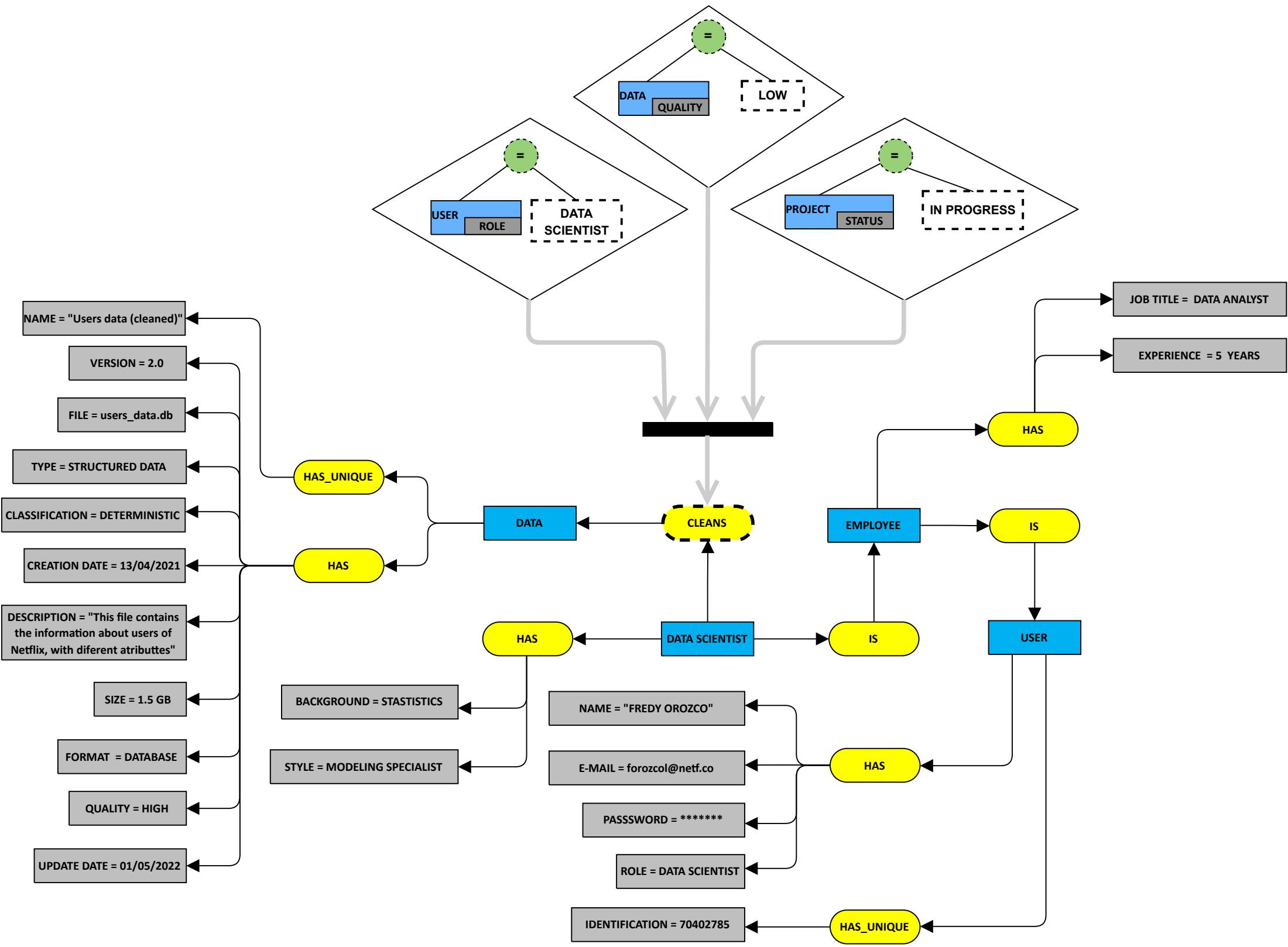
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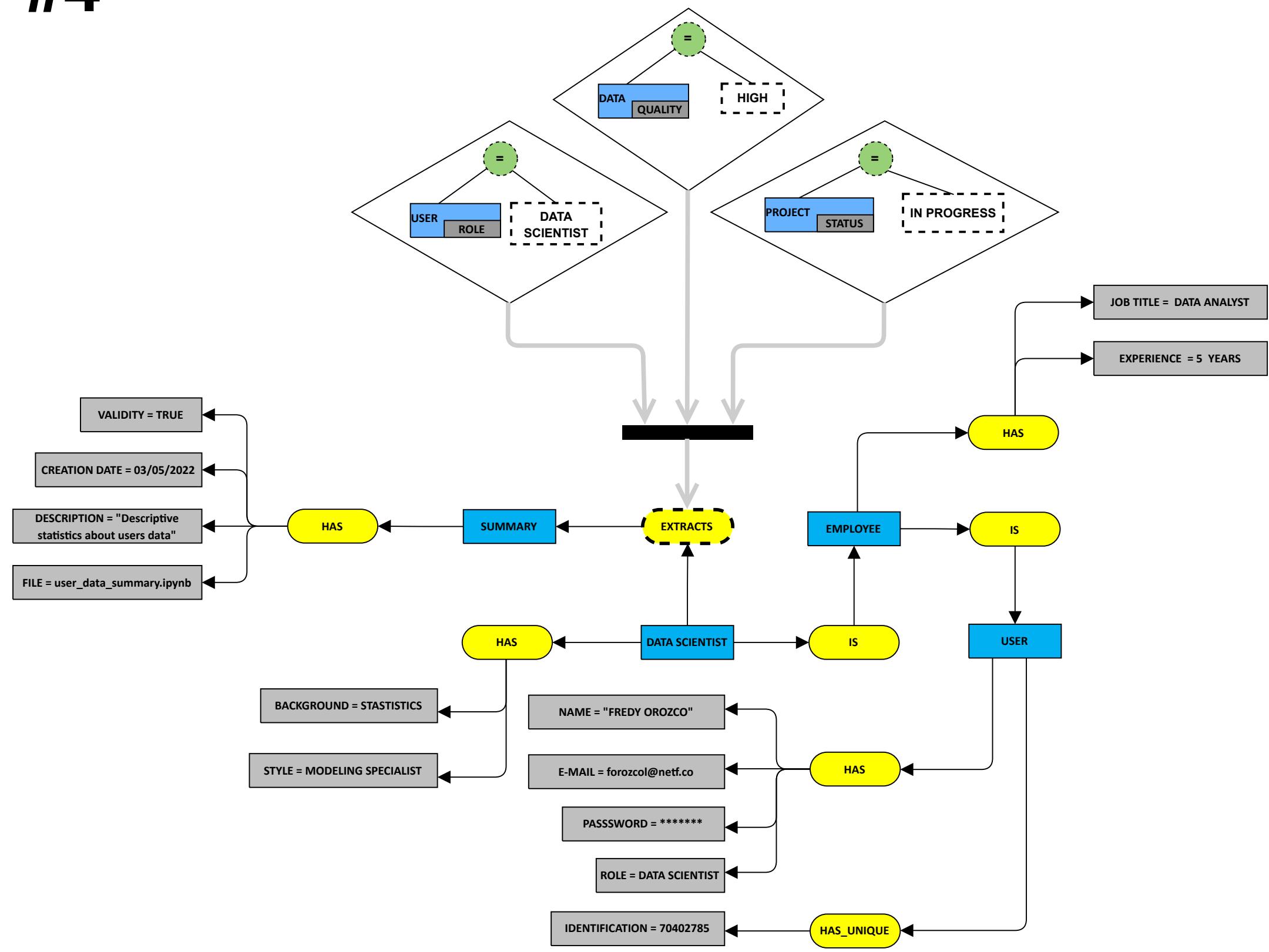
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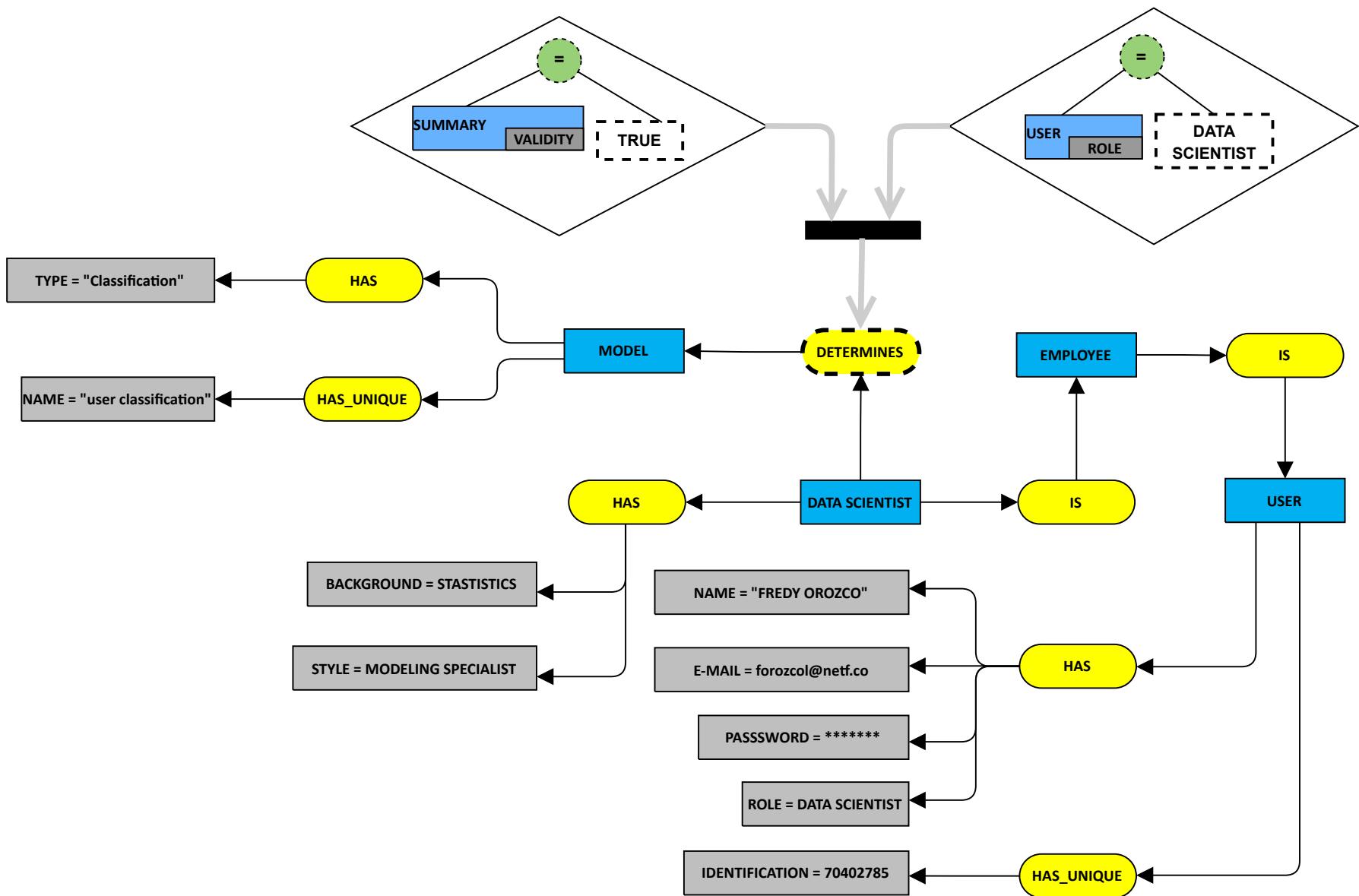
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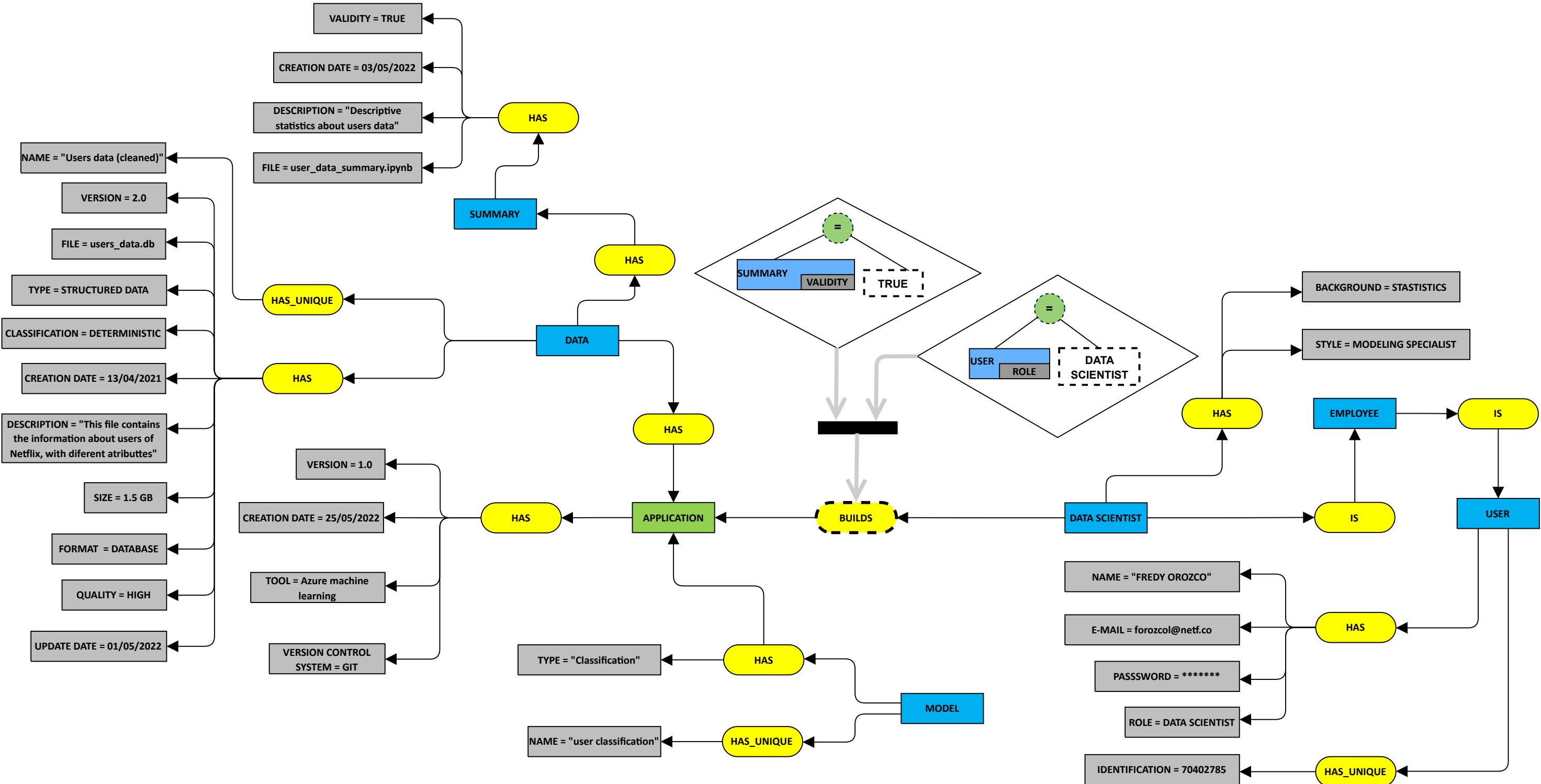
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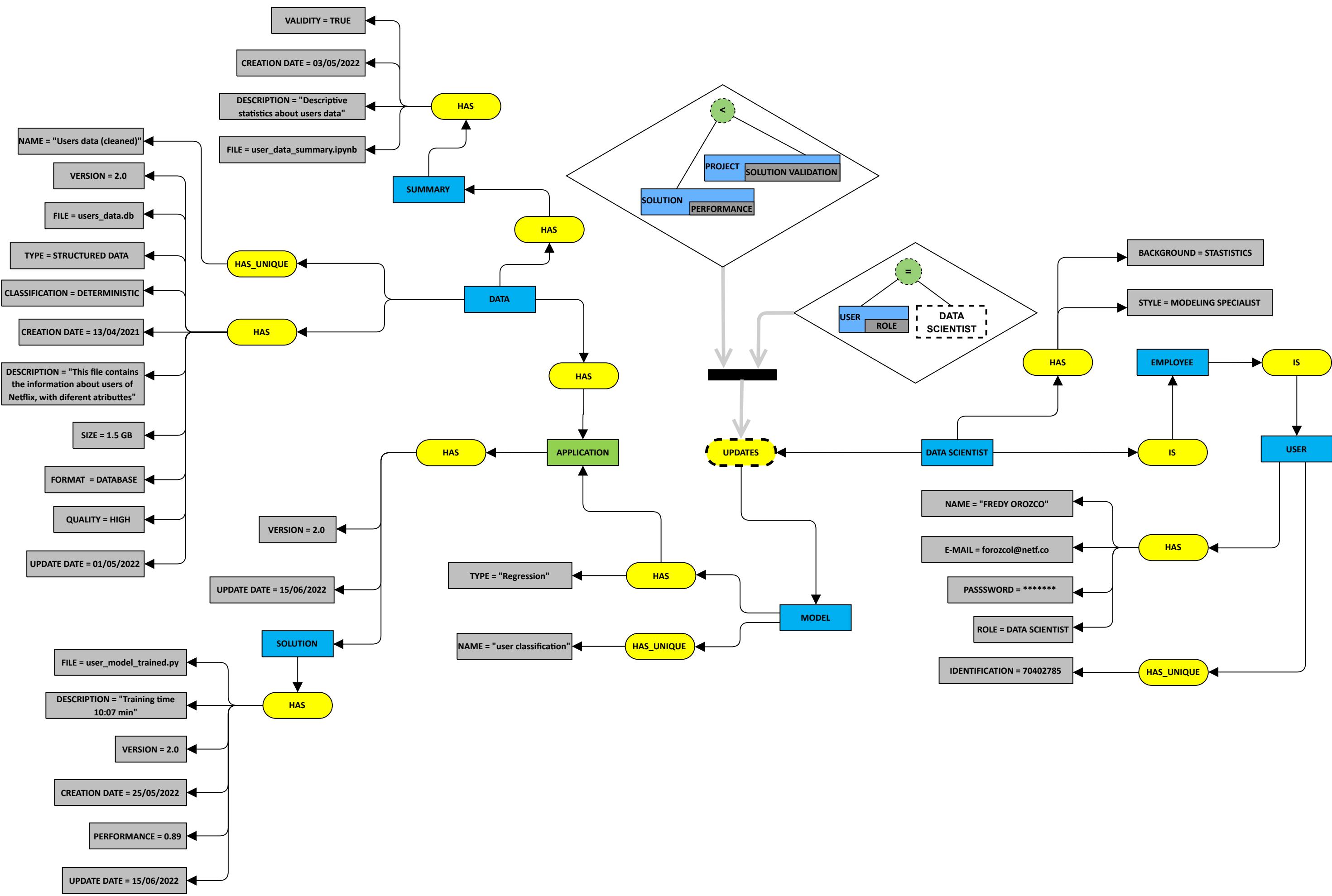
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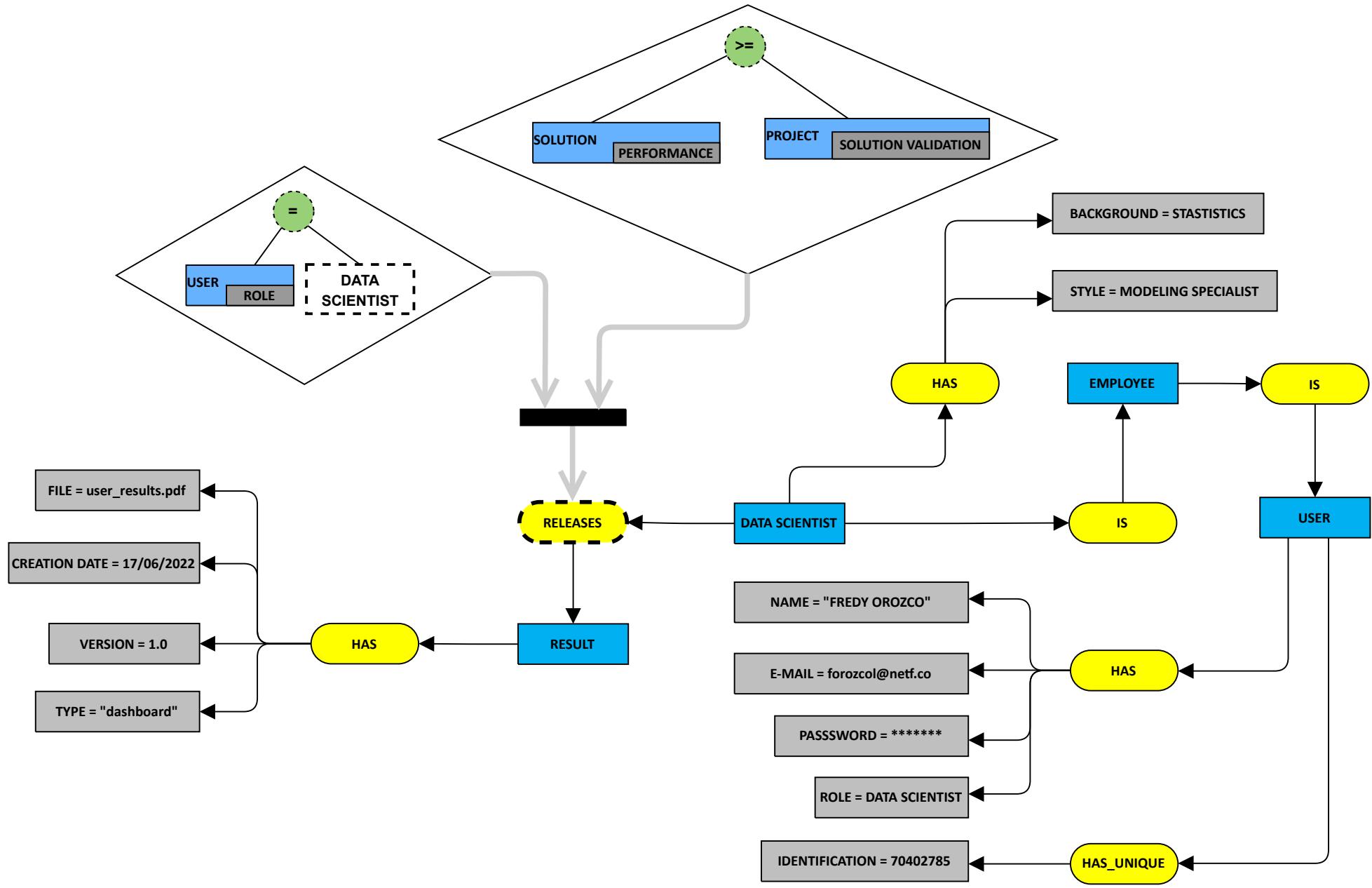
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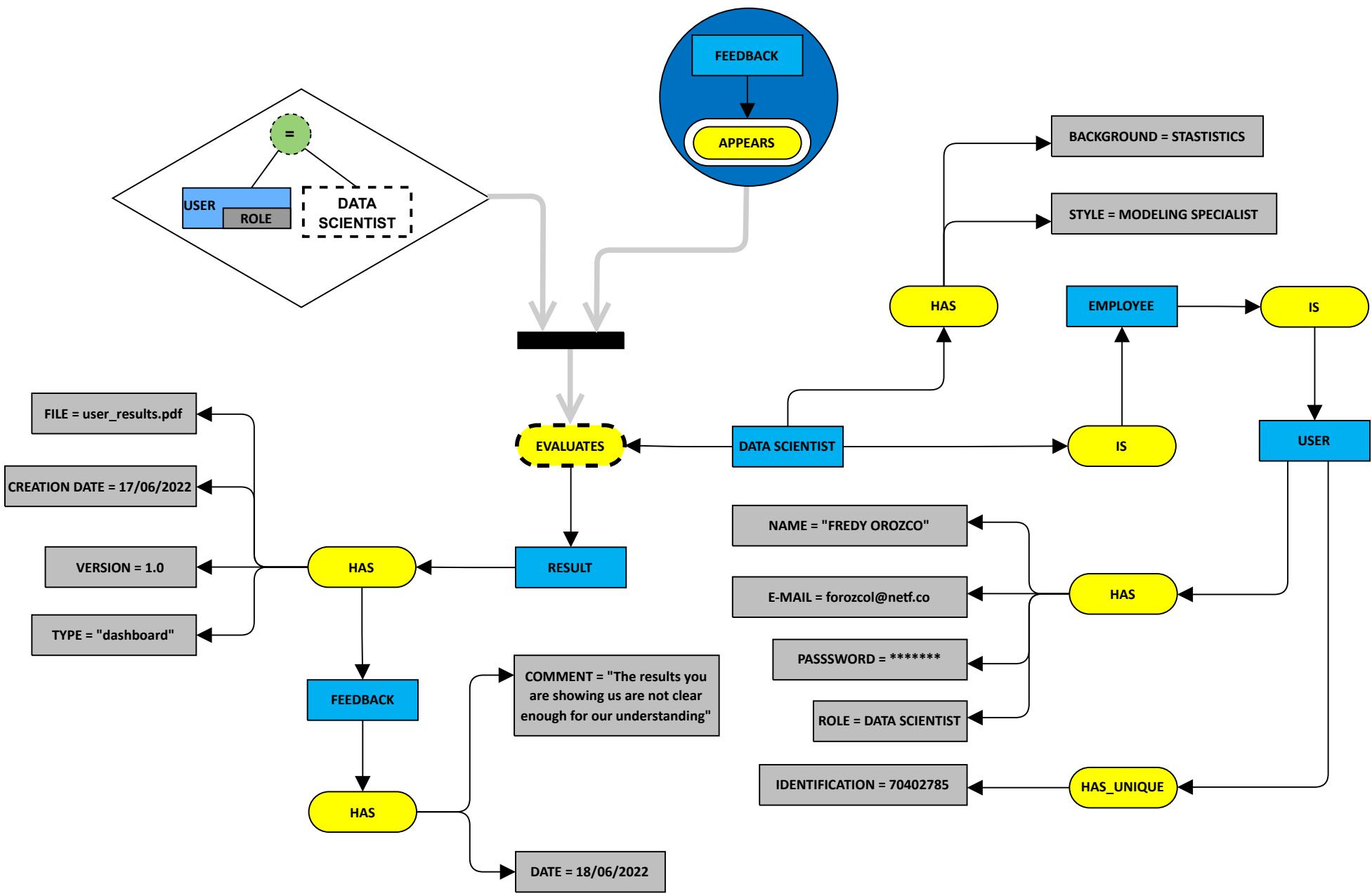
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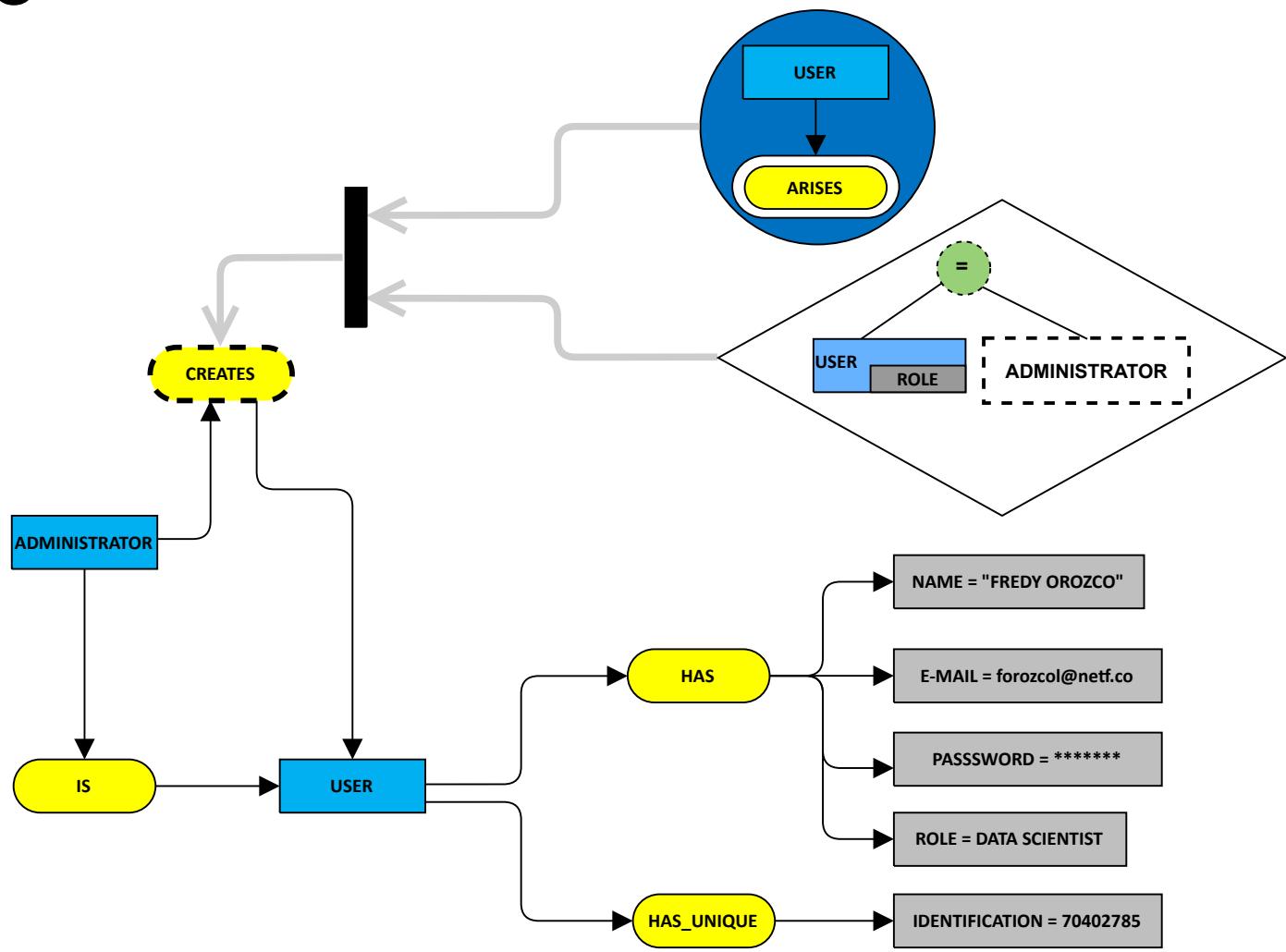
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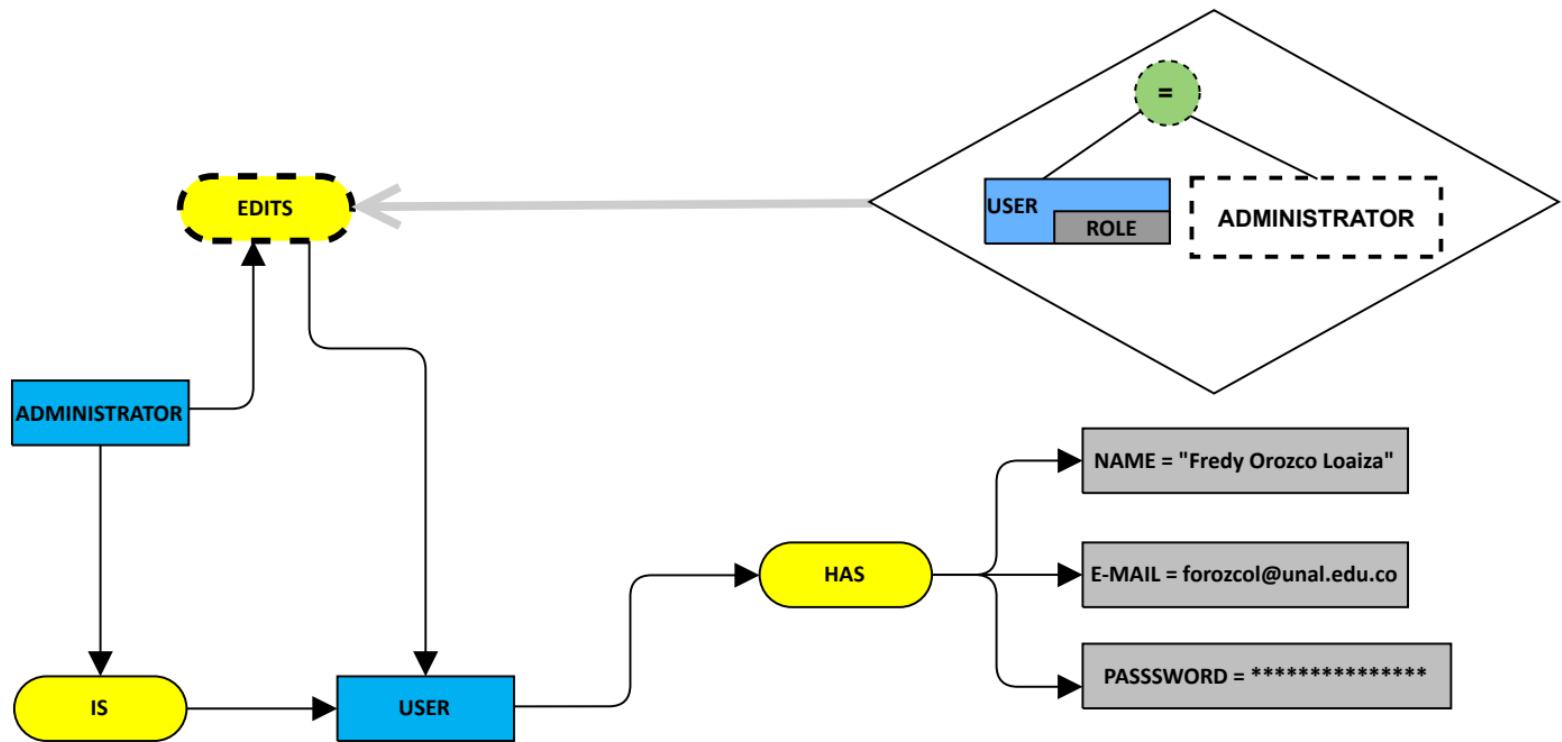
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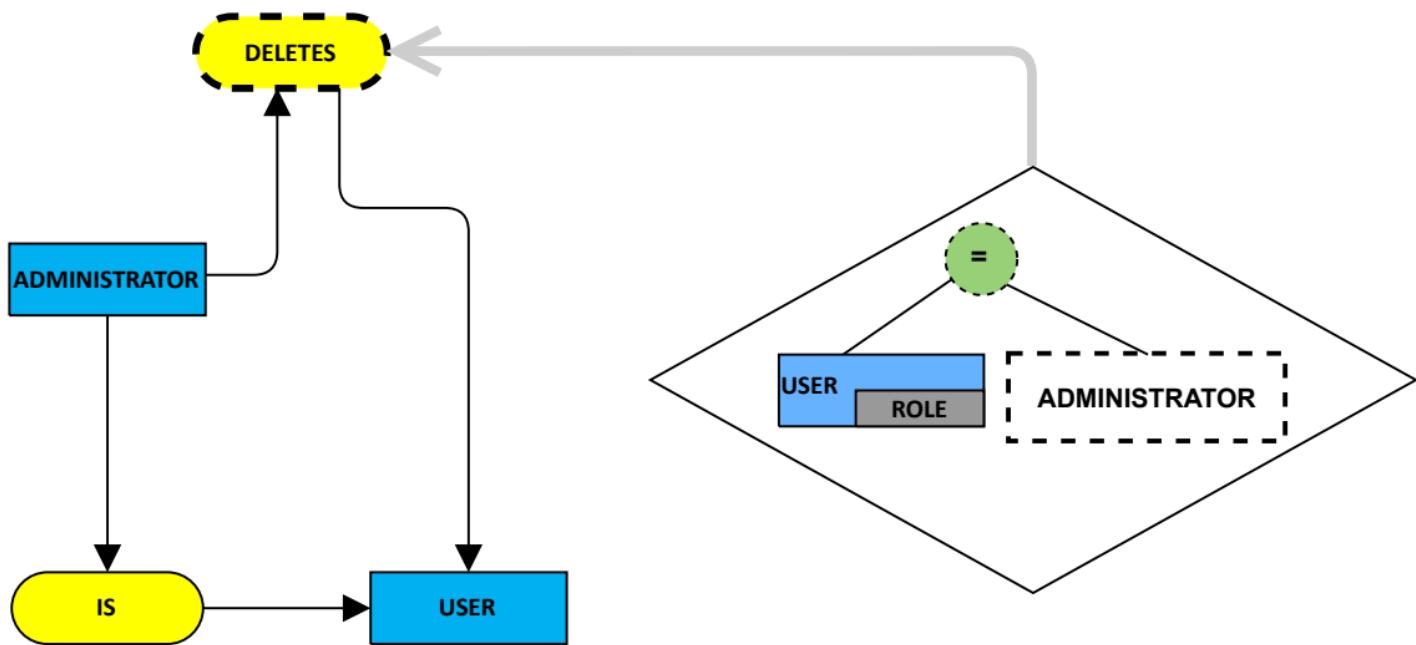
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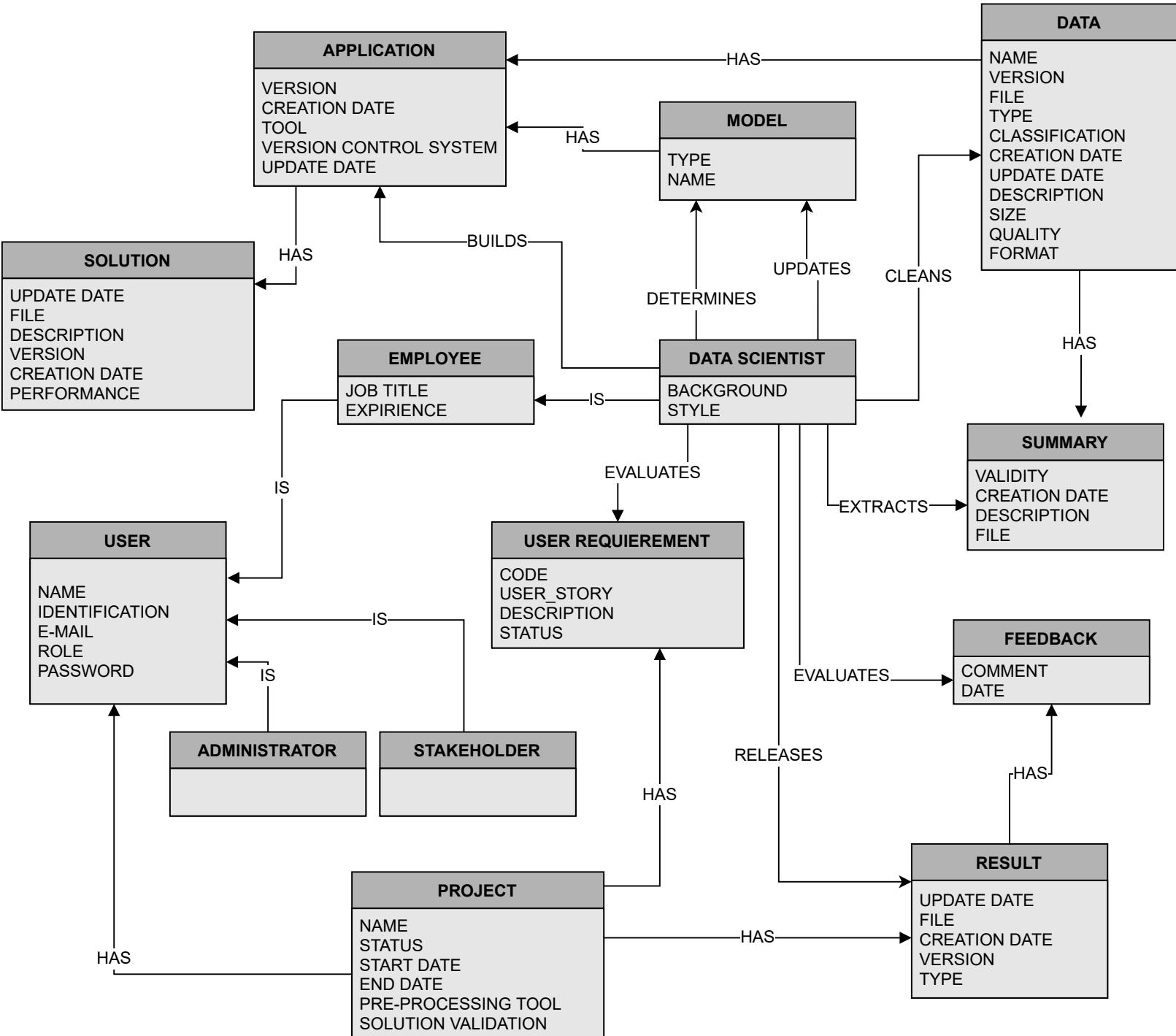
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#12



DOMAIN MODEL < BACK



STAKEHOLDER SURVEY

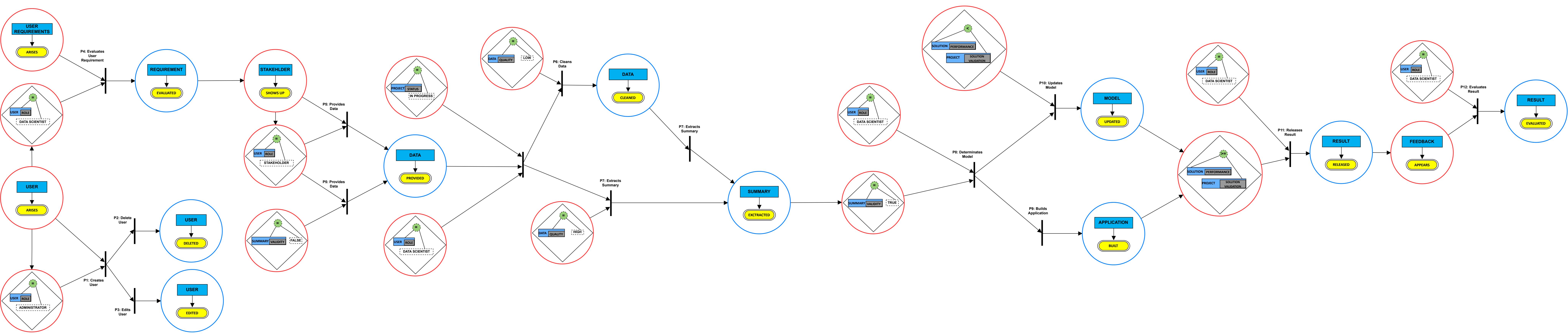
PROJECT NAME	DATA SCIENTIST				
STAKEHOLDER NAME	CARLOS ALBERTO ALVAREZ HENAO				
DATE	06 / 04 / 2022				
CRITERIA	STRONGLY AGREE	AGREE	NEITHER	DISAGREE	STRONGLY DISAGREE
THE INFORMATION IS COMPLETE ACCORDING TO OUR MEETINGS	X				
THE WORK PRODUCTS I COULD REVIEW ARE CLEAR		X			
THE PROBLEM IS CLEARLY IDENTIFIED	X				
GOALS ARE RELATED TO THE ORGANIZATION	X				
THE SEQUENCE OF THE PROCESS IS ARTICULATED	X				
THE OVERAL QUALITY OF THE DELIVERABLES IS ADEQUATE		X			
SUGGESTIONS	<ul style="list-style-type: none"> - Include in the project the pre-processing, processing and post-processing of the data, grouping together the actions that were already in place. - To be able to determine the time taken for each of the data stages in a project. 				
SIGNATURE					

STAKEHOLDER SURVEY

PROJECT NAME	DATA SCIENTIST				
STAKEHOLDER NAME	JUAN CAMILO JARAMILLO TASCÓN				
DATE	03/05/2022				
CRITERIA	STRONGLY AGREE	AGREE	NEITHER	DISAGREE	STRONGLY DISAGREE
THE INFORMATION IS COMPLETE ACCORDING TO OUR MEETINGS	X				
THE WORK PRODUCTS I COULD REVIEW ARE CLEAR		X			
THE PROBLEM IS CLEARLY IDENTIFIED		X			
GOALS ARE RELATED TO THE ORGANIZATION	X				
THE SEQUENCE OF THE PROCESS IS ARTICULATED	X				
THE OVERAL QUALITY OF THE DELIVERABLES IS ADEQUATE		X			
SUGGESTIONS	Include more leaf concepts				
SIGNATURE					

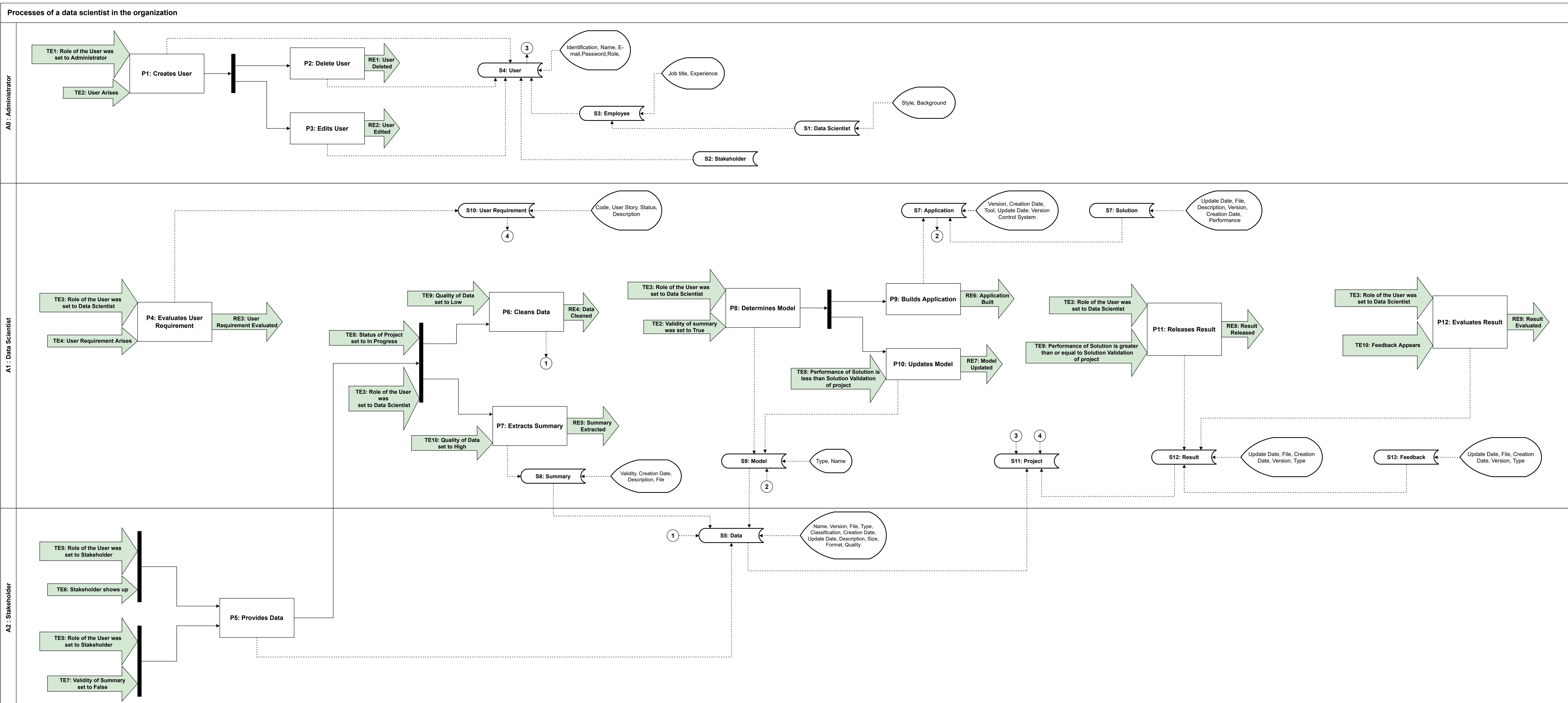
EVENT INTERACTION GRAPH

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PROCESS DIAGRAM

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PROCESS DIAGRAM EXPLANATORY TABLE

Name	Goal	Duration/Frequency	How?/Where?	Problems	Business rules	Events
P1: Creates User	G7 : Maintaining the users	5 minutes / 4 times a month	For each user, the personal information is registered. This process takes place were the software is developed.		BR1: ADMINISTRATOR MANAGE THE USER	- TE1: Role of the User was set to Administrator - TE2: User Arises
P2: Deletes User	G7 : Maintaining the users	2 minutes / once a month	Users have sometimes the need to quit the system. In such a case, the user is deleted. This process takes place were the software is developed		BR1: ADMINISTRATOR MANAGE THE USER	RE1: User Deleted
P3: Edits User	G7 : Maintaining the users	4 minutes / 9 times a month	This process takes place were the software is developed whenever the user information needs some adjustment		BR1: ADMINISTRATOR MANAGE THE USER	RE2: User Edited
P4: Evaluates user requirements	G8 : Obtaining the type of model.	24 hours / 2 times a month	When a project is developed, it comes with some user requirements that the data scientist must assess. This process takes place in the data scientist workspace	- C5 : DATA SCIENTIST does not have EXPERIENCE - C1 : DATA SCIENTIST evaluates USER REQUIREMENTS hardly	BR15:DATA SCIENTIST EVALUATES USER REQUIEREMENTS	- TE3: Role of the User was set to Data Scientist - TE4: User Requirement Arises - RE3: User Requirement Evaluated
P5: Provides Data	G11: Ensuring project has data	10 minutes / 2 times a month	It is very important that the stakeholder provides the data with which the data scientist will work. This process takes place in the data scientist workspace	C3 : STAKEHOLDER provides DATA wrongly	BR2:STAKEHOLDER PROVIDES DATA 1, BR3: STAKEHOLDER PROVIDES DATA 2	- TE5: Role of the User was set to Stakeholder - TE6: Stakeholder shows up - TE5: Role of the User was set to Stakeholder - TE7: Validity of Summary set to False
P6: Cleans Data	G10: Increasing the quality of data	36 hours / 2 times a month	In many cases, the data provided are not of the best quality, so it is necessary to clean and depurate them. This process takes place in the data scientist workspace	C3 : STAKEHOLDER provides DATA wrongly	BR9:DATA SCIENTIST CLEANS THE DATA	- TE9: Quality of Data set to Low - TE8: Status of Project set to In Progress - TE3: Role of the User was set to Data Scientist - RE4: Data Cleaned
P7: Extracts Summary	- G10: Increasing the quality of data - G6: Fostering data has summary	2 hours / 2 times a month	A summary of the data is necessary to see how the data behaves and to find relationships in it. This process takes place in the data scientist workspace	C1 : DATA SCIENTIST evaluates USER REQUIREMENTS hardly	BR10:DATA SCIENTIST EXTRACTS DATA 1 BR11: DATA SCIENTIST EXTRACTS DATA 2	- TE8: Status of Project set to In Progress - TE3: Role of the User was set to Data Scientist - TE10: Quality of Data set to High - RE5: Summary Extracted
P8: Determines Model	G8 : Obtaining the type of model.	1 hour / 2 times a month	This process takes place in the data scientist workspace. It is important to determine a model that best fits the behavior of the data.	C5 : DATA SCIENTIST does not have EXPERIENCE	BR7:DATA SCIENTIST DETERMINES THE MODEL	- TE3: Role of the User was set to Data Scientist - TE2: Validity of summary was set to True
P9: Builds Application	G2 : Accomplishing application has solution	6 hours / 2 times a month	This process takes place in the data scientist workspace. The application is necessary to be able to work with the model and the data, using a programming and development tool to work with them.	C4 : APPLICATION does not have VERSION CONTROL SYSTEM	BR5:DATA SCIENTIST BUILDS APPLICATION	RE6: Application Built
P10: Updates Model	- G2 : Accomplishing application has solution - G3 : Enhancing the performance of the solution	2 hours / 8 times a month	This process takes place in the data scientist workspace. Sometimes the model needs refinement if the desired performance is not obtained at first, so it is updated.	C4 : APPLICATION does not have VERSION CONTROL SYSTEM	BR6: DATA SCIENTIST UPDATES THE MODEL	- TE8: Performance of Solution is less than Solution Validation of project - RE7: Model Updated
P11: Releases Result	G1 : Achieving the result	4 hours / 2 times a month	This process takes place in the data scientist workspace. It is important to be able to show the conclusions of what was obtained in the data processing, therefore the result must be concise and with the key points that were found to show in a clear and simple way to the stakeholders.		BR13:DATA SCIENTIST RELEASES RESULT	- TE3: Role of the User was set to Data Scientist - TE9: Performance of Solution is greater than or equal to Solution Validation of project - RE8: Result Released
P12: Evaluates Result	- G4 : Conserving the end date of the project - G5 : Controlling the status of the project	2 hours / 6 times a month	This process takes place in the data scientist workspace. Continuous evaluation of results is important as stakeholders give feedback that should be evaluated on results		BR14: DATA SCIENTIST EVALUATES RESULT	- TE3: Role of the User was set to Data Scientist - TE10: Feedback Appears - RE9: Result Evaluated

DATA DICTIONARY

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Name	Alias	Type	Process involved	Features
A0: Administrator		Agent	P1: Creates User, P2: Deletes User, P3: Edits User	name, e-mail, password, role, identification
A1: Data Scientist		Agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User, P4: Evaluates user requirements, P6: Cleans Data, P7: Extracts Summary, P8: Determines Model, P9: Builds Application, P10: Updates Model, P11: Releases Result, P12: Evaluates Result	name, e-mail, password, role, identification, job title, experience, style, background
A2: Stakeholder		External agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User, P5: Provides Data	name, e-mail, password, role, identification
A3: User		Agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User	name, e-mail, password, role, identification
A4: Employee		Agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User	name, e-mail, password, role, identification, job title, experience
S5: Data		I/O Storage	P5: Provides Data, P6: Cleans Data,	name, version, file, type, classification, creation date, update date, description, size, format, quality
S6: Summary		I/O Storage	P7: Extracts Summary	validity, creation date, description, file
S7: Application		I/O Storage	P9: Builds Application, P10: Updates Model	version, creation date, tool, update date, version control system
S8: Solution		I/O Storage	P9: Builds Application, P10: Updates Model	update date, file, description, version, creation date, performance
S9: Model		I/O Storage	P8: Determines Model, P10: Updates Model	type, name
S10: User requirement		I/O Storage	P4: Evaluates user requirements	code, user story, status, description
S11: Project		I/O Storage		name, status, start date, end date, pre-processing tool, solution validation
S12: Result		I/O Storage	P11: Releases Result	update date, file, creation date, version, type
S13: Feedback		I/O Storage	P12: Evaluates Result	comment, date

BUSINESS RULES

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Code	Name	Description	Formulae	Source	Related business rule
BR1	ADMINISTRATOR MANAGE THE USER	User can manage other users only if his role is administrator.	USER.ROLE="ADMINISTRATOR"	STAKEHOLDER	BR16
BR2	STAKEHOLDER PROVIDES DATA 1	The stakeholder can provides the data if, the summary validation is false and the user role is stakeholder	(SUMMARY.VALIDITY="FALSE" & USER.ROLE="STAKEHOLDER")	STAKEHOLDER	BR16, BR18
BR3	STAKEHOLDER PROVIDES DATA 2	THE STAKEHOLDER CAN PROVIDES DATA IF THE STAKEHOLDER IS SHOWS UP AND THE USER ROLE IS STAKEHOLDER	(STAKEHOLDER SHOWS UP & USER.ROLE="STAKEHOLDER")	STAKEHOLDER	BR16
BR4	DATA SCIENTISTS PROCESS DATA	data scientist can processes the data if the user's role is data scientist	USER.ROLE="DATA SCIENTIST"	STAKEHOLDER	BR16
BR5	DATA SCIENTIST BUILDS APPLICATION	Data scientist can builds the application only if data scientist determines the model		STAKEHOLDER	BR7
BR6	DATA SCIENTIST UPDATES THE MODEL	Data scientist can updates the application only if data scientist determines the model and the performance solution less than the project solution validation	DATA SCIENTIST DETERMINES THE MODEL & SOLUTION. PERFORMANCE < PROJECT. SOLUTION_VALIDATION	STAKEHOLDER	BR16, BR7
BR7	DATA SCIENTIST DETERMINES THE MODEL	The data scientist can determines the model only if summary validation is true	SUMMARY.VALIDITY="TRUE"	STAKEHOLDER	BR18
BR8	DATA SCIENTIST PRE-PROCESS DATA	the data scientist can pre-processes the data if the user's role is data scientist and the project's status is in progress	USER.ROLE="DATA SCIENTIST" & PROJECT.STATUS="IN PROGRESS"	STAKEHOLDER	BR16, BR17
BR9	DATA SCIENTIST CLEANS THE DATA	The data scientist can cleans the data if the stakeholder provides the data and the data quality is low.	STAKEHOLDER PROVIDES DATA & DATA.QUALITY="LOW"	STAKEHOLDER	BR19, BR2, BR3
BR10	DATA SCIENTIST EXTRACTS DATA 1	The data scientist can extracts the data only if the data scientist cleaned the data		STAKEHOLDER	BR9
BR11	DATA SCIENTIST EXTRACTS DATA 2	The data scientist can extracts the data if the data quality is high and the stakeholder provides the data.	STAKEHOLDER PROVIDES DATA & DATA.QUALITY="HIGH"	STAKEHOLDER	BR19, BR2, BR3
BR12	DATA SCIENTIST POST-PROCESS DATA	Data scientist can post-process data only if the user role is data scientist	USER.ROLE="DATA SCIENTIST"	STAKEHOLDER	BR16
BR13	DATA SCIENTIST RELEASES RESULT	The data scientist can releases the results only if the performance of the solution is greater than or equal to the solution validation of the project.	SOLUTION.PERFORMANCE >= PROJECT.SOLUTION_VALIDATION	STAKEHOLDER	
BR14	DATA SCIENTIST EVALUATES RESULT	The data scientist can evaluates the results only if the feedback appears.		STAKEHOLDER	
BR15	DATA SCIENTIST EVALUATES USER REQUIEREMENTS	The data scientist can evaluates the requirements only if the user requirements arises		STAKEHOLDER	
BR16	USER ROLE	the user role can only be ADMINISTRATOR, DATA SCIENTIST STAKEHOLDER		STAKEHOLDER	
BR17	PROJECT STATUS	the project status can only be "finish" or "in progress"		STAKEHOLDER	
BR18	SUMMARY VALIDITY	the validation of the summary can only be "TRUE" or "FALSE".		STAKEHOLDER	
BR19	DATA QUALITY	data quality can only be "LOW" or "HIGH".		STAKEHOLDER	

GOAL DIAGRAM

[BACK](#)

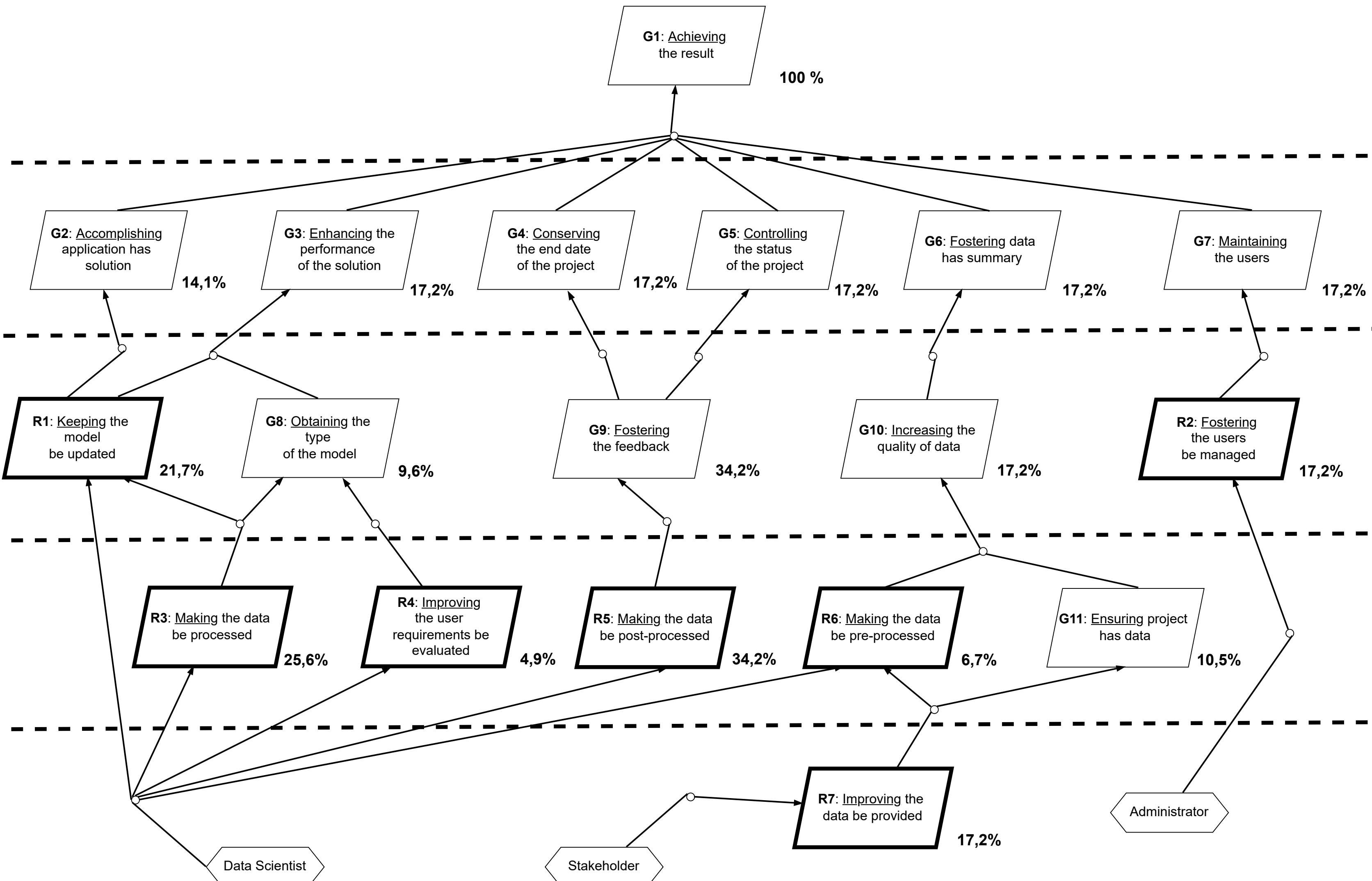
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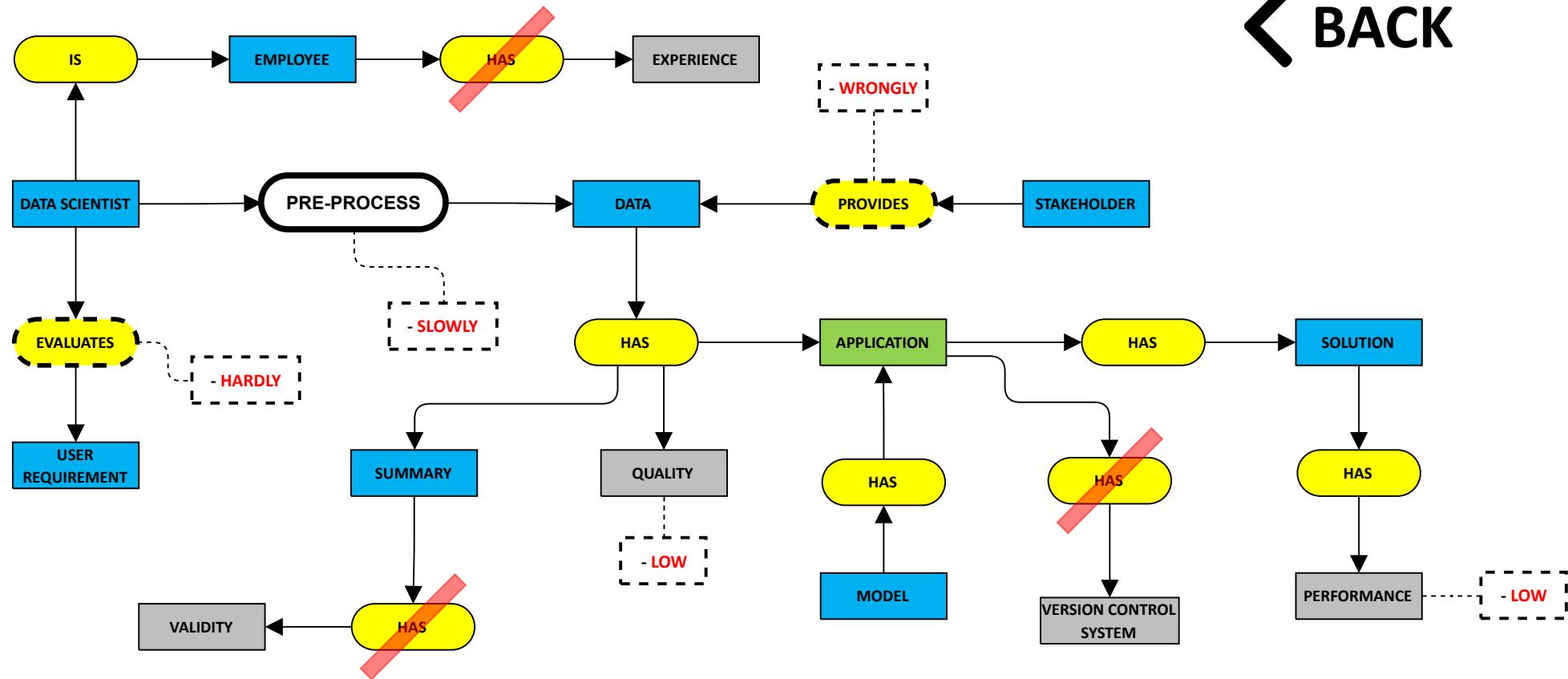


PERCENTAGE ASSIGNMENT TO GOALS

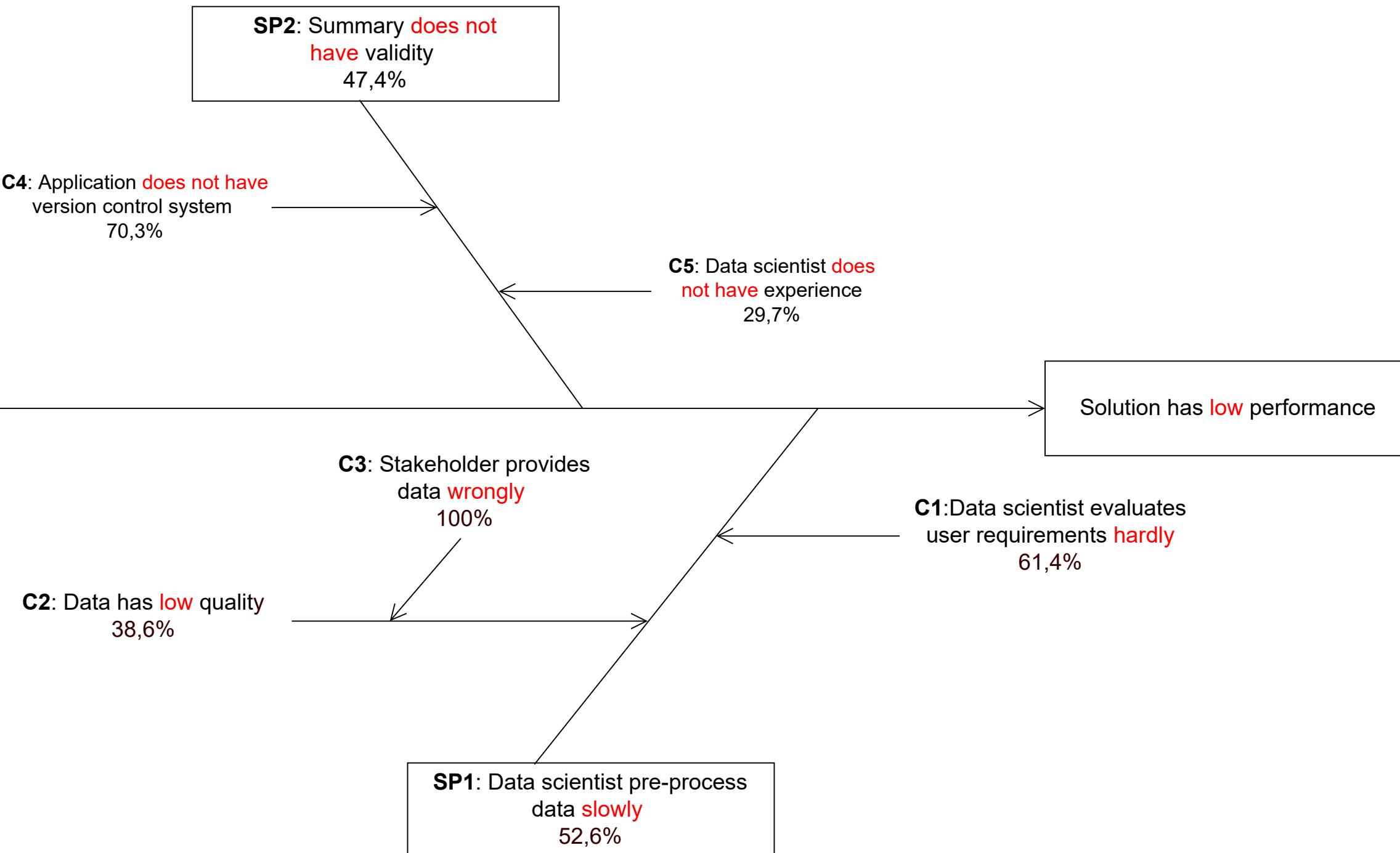
Father	KAOS element	Level	%	Achievement verb	Verb type	Verb weight	Verb %	Element type	Element weight	Element %	Weighted %	Leaf %
ROOT	G1. Achieving the result	5	100,0	ACHIEVE	ACHIEVEMENT	1	100,0	GOAL	2	100,0	100,0	0,0
			100,0			1	100,0		2	100,0	100,0	
G1	G2. Accomplishing application has solution	4	16,67	ACCOMPLISH	ACHIEVEMENT	1	9,1	GOAL	2	16,7	14,1	0,0
G1	G3. Enhancing the performance of the solution	4	16,67	ENHANCE	IMPROVEMENT	2	18,2	GOAL	2	16,7	17,2	0,0
G1	G4. Conserving the end date of the project	4	16,67	CONSERVE	MAINTENANCE	2	18,2	GOAL	2	16,7	17,2	0,0
G1	G5. Controlling the status of the project	4	16,67	CONTROL	MAINTENANCE	2	18,2	GOAL	2	16,7	17,2	0,0
G1	G6. Fostering data has summary	4	16,67	FOSTER	IMPROVEMENT	2	18,2	GOAL	2	16,7	17,2	0,0
G1	G7. Maintaining the users	4	16,67	MAINTAIN	MAINTENANCE	2	18,2	GOAL	2	16,7	17,2	0,0
			100,0			11	100,0		12	100,0	100,0	
G2, G3	R1. Keeping the model be updated	3	22,7	KEEP	MAINTENANCE	2	22,7	REQUIREMENT	1	19,9	21,8	0,0
			22,7			2	22,7		1	19,9	21,8	
G3	G8. Obtaining the type of the model	3	8,6	OBTAIN	MAINTENANCE	2	8,6	GOAL	2	11,4	9,5	0,0
			8,6			2	8,6		2	11,4	9,5	
G4, G5	G9. Fostering the feedback	3	34,2	FOSTER	IMPROVEMENT	2	34,2	GOAL	2	34,2	34,2	0,0
			34,2			2	34,2		2	34,2	34,2	
G6	G10. Increasing the quality of data	3	17,1	INCREASE	IMPROVEMENT	2	17,1	GOAL	2	17,1	17,1	0,0
			17,1			2	17,1		2	17,1	17,1	
G7	R2. Fostering the users be managed	3	17,1	FOSTER	IMPROVEMENT	2	17,1	REQUIREMENT	1	17,1	17,1	17,1
			17,1			2	17,1		1	17,1	17,1	
G8, R1	R3. Making the data be processed	2	26,0	MAKE	ACHIEVEMENT	1	24,9	REQUIREMENT	1	26,0	25,6	25,6
			26,0			1	24,9		1	26,0	25,6	
G8	R4. Improving the user requirements be evaluated	2	4,3	IMPROVE	IMPROVEMENT	2	6,4	REQUIREMENT	1	4,3	5,0	5,0
			4,3			2	6,4		1	4,3	5,0	
G9	R5. Making the data be post-processed	2	34,2	MAKE	ACHIEVEMENT	1	34,2	REQUIREMENT	1	34,2	34,2	34,2
			34,2			1	34,2		1	34,2	34,2	
G10	R6. Making the data be pre-processed	2	8,6	MAKE	ACHIEVEMENT	1	5,7	REQUIREMENT	1	5,7	6,7	0,0
			8,6			1	5,7		1	5,7	6,7	
G10	G11. Ensuring project has data	2	8,6	ENSURE	MAINTENANCE	2	11,4	GOAL	2	11,4	10,5	0,0
			8,6			3	17,1		3	17,1	17,1	
G11, R6	R7. Improving the data be provided	1	17,2	IMPROVE	IMPROVEMENT	2	17,2	REQUIREMENT	2	17,2	17,2	17,2
			17,2			2	17,2		2	17,2	17,2	
			17,2			2	17,2					99,1

PROBLEMS PRE-CONCEPTUAL SCHEMA

BACK



CAUSE-AND-EFFECT DIAGRAM < BACK



PERCENTAGE ASSIGNMENT TO PROBLEMS

[BACK](#)

	C1	C3	C4	C5
P1				
P2				
P3				
P4	G8			G8
P5		G11		
P6		G10		
P7	G10, G6			
P8				G8
P9			G2	
P10			G2, G3	
P11				
P12				

	C1	C3	C4	C5
P1				
P2				
P3				
P4	9,6			9,6
P5		10,5		
P6		17,2		
P7	34,4			
P8				9,6
P9			14,1	
P10			31,3	
P11				
P12				
Total	44	27,7	45,4	19,2
		136,3		
	32,3%	20,3%	33,3%	14,1%

	FORMULAE	VALUE	PERCENTAGE
SP2	C4+C5	47,4%	
SP1	C2+C1	52,6%	
		100,0%	
C1	32,3%	32,3%	61,4%
C2	C3	20,3%	38,6%
C3	20,3%	20,3%	100,0%
C4	33,3%	33,3%	70,3%
C5	14,1%	14,1%	29,7%

METHOD ASSESSMENT TEMPLATE

Team	Team #2 - Data Scientist		Date	27-4-2022
UNC-METHOD		Suggestions for improvement		
Phase	Practice	Consistency	Completeness	Correction
Software Context	Discourse-based opportunity modeling		Elicitation cards should be color-coded to better differentiate between object, actor and function cards.	
Problem Analysis	Template-based elicitation of requirements		The process diagram explanatory table should have an extra column for observations.	
Software Context	Discourse-based opportunity modeling		There should be a guide or advice on how to formulate the questions to the stakeholders, so that the best and maximum amount of information can be obtained.	
Problem Analysis	Visual modeling of requirements		There should be information on the syntax of the event interaction graph, as well as some examples to be consistent with the process diagram.	
Problem Analysis	Template-based elicitation of requirements		There should be examples of how to obtain the percentages of goals and problems, explaining step by step how to obtain them, since this process can be confusing and difficult to understand.	
Software Context - Problem Analysis	Visual modeling of requirements			For ease and speed of reading, references in the preconceptual schema should have different notation for dynamic relationship implications, achievement implications, and normal triads.
Problem Analysis	Visual modeling of requirements			In the process diagram there should be a way to better identify the actors, either by means of a color or a more characteristic symbol.
Problem Analysis	Visual modeling of requirements		There should be a better indication of what the process flow looks like.	
Problem Analysis	Visual modeling of requirements	In order to obtain the causes of the cause-effect diagram, from the problems pre-conceptual schema, there should be a way to hierarchize these causes from the same pre-conceptual.		
Problem Analysis	Template-based elicitation of requirements		Mathematical expressions should be allowed in the syntax.	

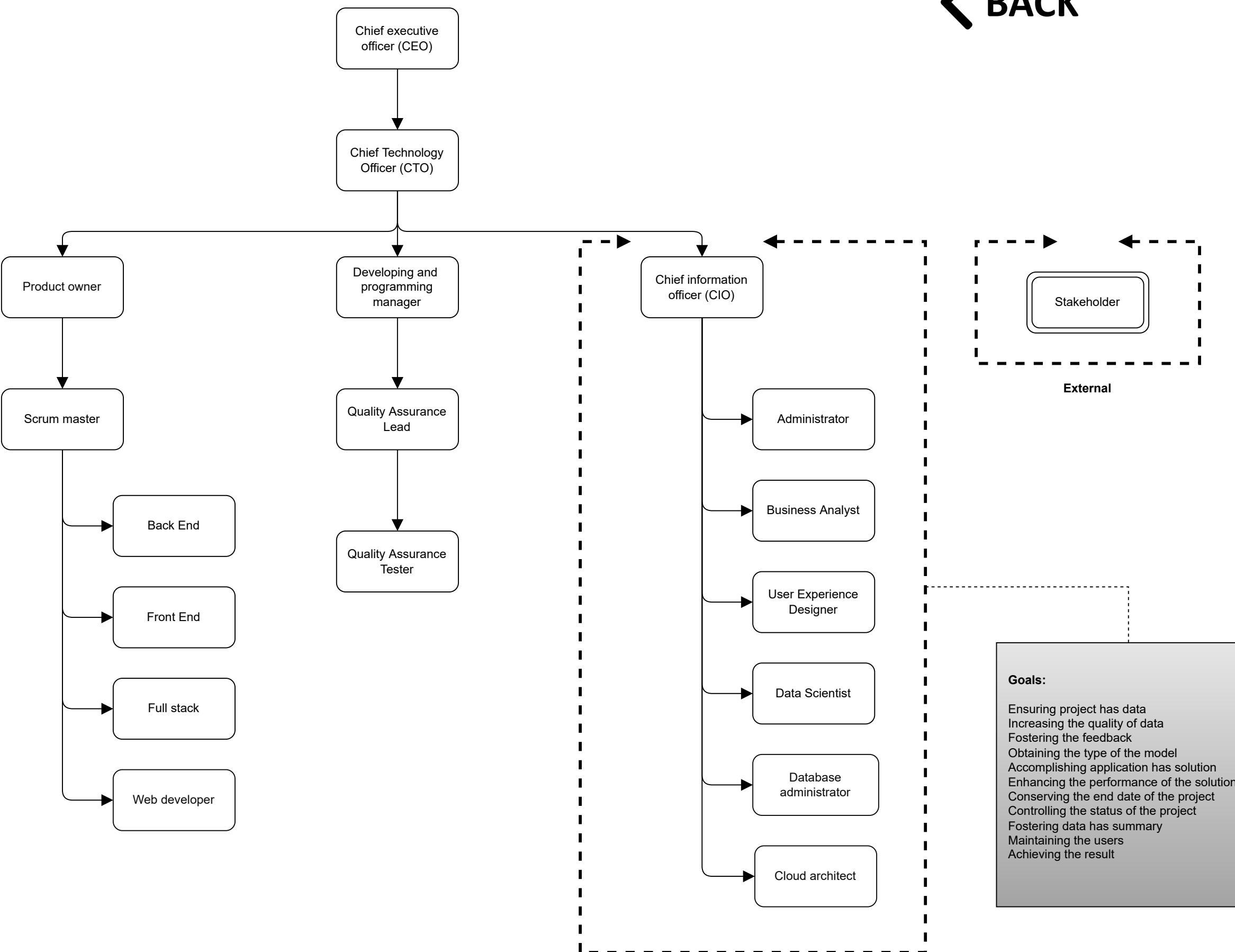
TEAM CHARTER

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Team name	Team #2: Data Scientist	Date	24/04/2022
Team leader	Diego Valentín Osorio Marín	Sponsor	UNAL
Team purpose	As the purpose of our team is to do all the analysis work on all the responsibilities of a data scientist in a software development company, using the UNC-METHOD.		
Mission	Our mission is to simplify the work of data scientists within a company, through a software product that increases productivity and optimizes workflow, taking into account certain objectives.		
Objetives	<ul style="list-style-type: none"> - Identify and analyze data scientist problems and solutions within a company. - To come up with consistent models that correctly represent what our stakeholders express. - Make good use of time to generate good work products. 		
Scope	Analysis and development of what a data scientist does within a company.		
Team members			
Name	Roles	Responsibilities	
Diego Valentín Osorio Marín	Leader, Meeting Coordinator, Analyst, Moderator	<ul style="list-style-type: none"> - Elaborate pre-conceptual schema. - Elaborate kanban board - Elaborate alphas advance report - Make corrections corresponding to deliverable 1 - Elaborate goal diagram - Elaborate cause and effect diagram - Assess the team - Asing tasks - KPIs elaboration - Use cases elaboration - Calculation elaboration 	
Jaime Andrés Monsalve Ballesteros	Documenter, Programmer, Tester	<ul style="list-style-type: none"> - Elaborate document traceability table - Elaborate percentage assigment to goals and problems - Verifycate consistency - Elaboration of Prototype 	
Santiago Castro Tabares	Analyst, Researcher, Programmer, Tester	<ul style="list-style-type: none"> - Check consistency - Elaborate pre-conceptual schema. - Elaboration of process diagram and explanatory table - Elaborate Event interaction graph - Elaboration of Prototype 	
Fredy Alberto Orozco Loaiza	Digital information manager, Analyst, Researcher	<ul style="list-style-type: none"> - Contact the stakeholder - Elaborate pre-conceptual schema. - Elaborate of Elicitation cards - Elaborate of Business rules - Elaborate the Domain model - Elaborate Data Dictionary - Elaboration of Prototype 	

NEW ORGANIZATIONAL CHART

BACK



Goals:

- Ensuring project has data
- Increasing the quality of data
- Fostering the feedback
- Obtaining the type of the model
- Accomplishing application has solution
- Enhancing the performance of the solution
- Conserving the end date of the project
- Controlling the status of the project
- Fostering data has summary
- Maintaining the users
- Achieving the result

Problem Area:

Chief information officer (CIO), Business Analyst, User Experience Designer, Data Scientist, Database administrator, Cloud architect and Administrator

Responsibilities:

- Manages users
- Pre-process data
- Process data
- Post-process data

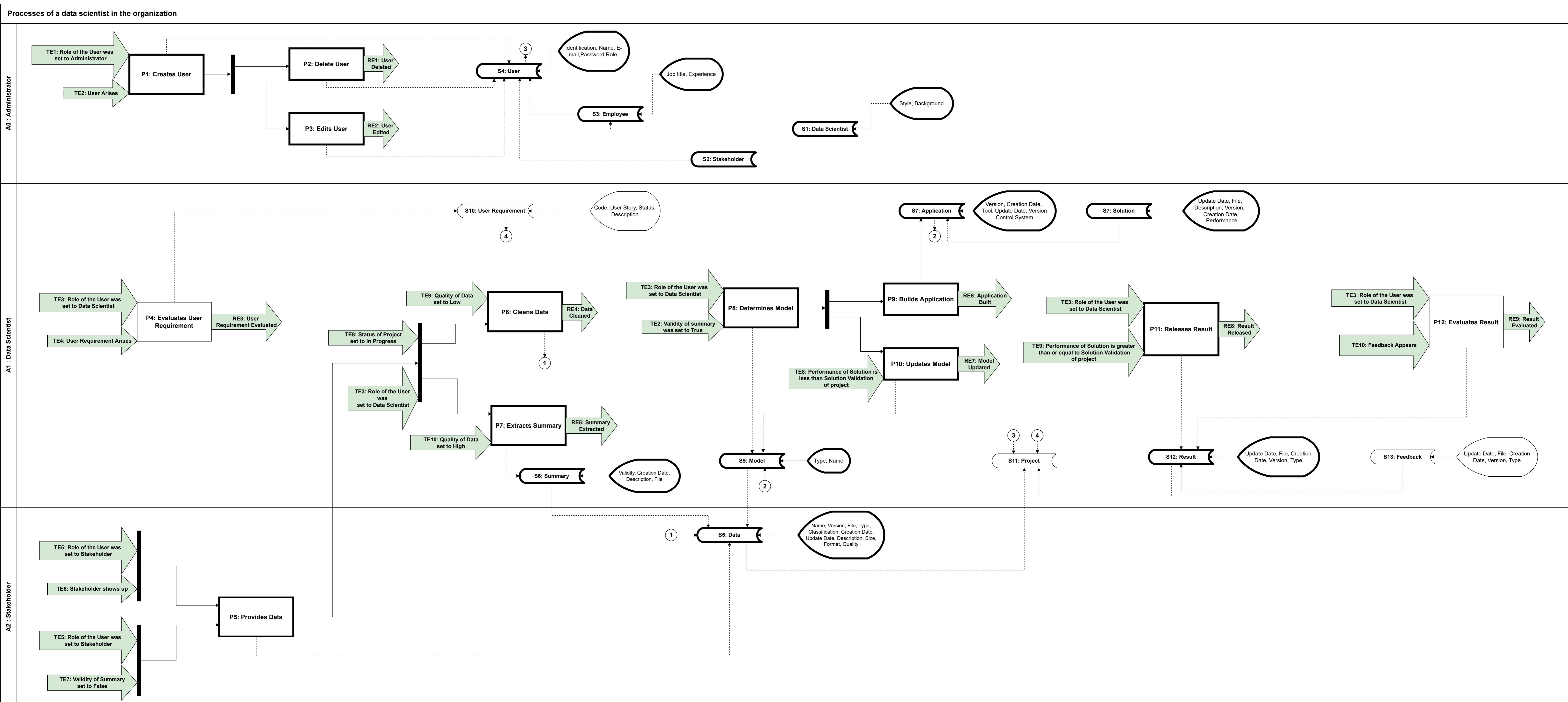
USER STORY AGREEMENT

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Project Name	DATA SCIENTIST				
Date	30/05/2022	Prepared by	Team #2	Authorized by	Carlos Mario Zapata Jaramillo
User Story Description			Acceptance Criteria		
As a...	I want...	So that...	Given...	When...	Then...
Administrator	To Create Users	We can maintain the users	The arising of a user	I click on the CREATES hyperlink	The software system displays the interface for creating users
Administrator	To Edit Users	We can maintain the users	The creation of a user	I click on the EDITS hyperlink	The software system displays the interface for editing users
Administrator	To Delete Users	We can maintain the users	The creation of a user	I click on the DELETES hyperlink	The software system displays the interface for deleting users
Stakeholder	To Provide Data	We can ensure project has data	The stakeholder shows up	I click on the PROVIDES hyperlink	The software system displays the interface for providing data
Data Scientist	To Clean Data	We can increase the quality of data	The data is provided, data quality is low and project is in progress	I click on the CLEANS hyperlink	The software system displays the interface for cleaning data
Data Scientist	To Extract a Summary	We can increase the quality of data and we can foster that data has summary	The data is provided, data quality is high and project is in progress	I click on the EXTRACTS hyperlink	The software system displays the interface for extracting summary
Data Scientist	To Determine a Model	We can obtain the type of model	The summary validity is true	I click on the DETERMINES hyperlink	The software system displays the interface for determining the model
Data Scientist	To Build an Application	We can accomplish that application has solution	The summary validity is true and the determination of a model	I click on the BUILDS hyperlink	The software system displays the interface for building the application
Data Scientist	To Update a Model	We can accomplish that application has solution and we can enhance the performance of the solution	The determination of a model and solution performance less than project solution validation	I click on the UPDATES hyperlink	The software system displays the interface for updating the model
Data Scientist	To Release a Result	We can achieve the result	The solution performance is better than project solution validation	I click on the RELEASES hyperlink	The software system displays the interface for releasing a result

NEW PROCESS DIAGRAM

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NEW PROCESS DIAGRAM EXPLANATORY TABLE

Name	Goal	Duration/Frequency	How?/Where?	Problems	Business rules	Events	Use cases
P1: Creates User	G7 : Maintaining the users	5 minutes / 4 times a month	For each user, the personal information is registered. This process takes place were the software is developed.		BR1: ADMINISTRATOR MANAGE THE USER	- TE1: Role of the User was set to Administrator - TE2: User Arises	UC01: Creates User
P2: Deletes User	G7 : Maintaining the users	2 minutes / once a month	Users have sometimes the need to quit the system. In such a case, the user is deleted. This process takes place were the software is developed		BR1: ADMINISTRATOR MANAGE THE USER	RE1: User Deleted	UC02: Deletes User
P3: Edits User	G7 : Maintaining the users	4 minutes / 9 times a month	This process takes place were the software is developed whenever the user information needs some adjustment		BR1: ADMINISTRATOR MANAGE THE USER	RE2: User Edited	UC03: Edits User
P4: Evaluates user requirements	G8 : Obtaining the type of model.	24 hours / 2 times a month	When a project is developed, it comes with some user requirements that the data scientist must assess. This process takes place in the data scientist workspace	- C5 : DATA SCIENTIST does not have EXPERIENCE - C1 : DATA SCIENTIST evaluates USER REQUIREMENTS hardly	BR15:DATA SCIENTIST EVALUATES USER REQUIEREMENTS	- TE3: Role of the User was set to Data Scientist - TE4: User Requirement Arises - RE3: User Requirement Evaluated	
P5: Provides Data	G11: Ensuring project has data	10 minutes / 2 times a month	It is very important that the stakeholder provides the data with which the data scientist will work. This process takes place in the data scientist workspace	C3 : STAKEHOLDER provides DATA wrongly	BR2:STAKEHOLDER PROVIDES DATA 1, BR3: STAKEHOLDER PROVIDES DATA 2	- TE5: Role of the User was set to Stakeholder - TE6: Stakeholder shows up - TE5: Role of the User was set to Stakeholder - TE7: Validity of Summary set to False	UC04: Provides Data
P6: Cleans Data	G10: Increasing the quality of data	36 hours / 2 times a month	In many cases, the data provided are not of the best quality, so it is necessary to clean and depurate them. This process takes place in the data scientist workspace	C3 : STAKEHOLDER provides DATA wrongly	BR9:DATA SCIENTIST CLEANS THE DATA	- TE9: Quality of Data set to Low - TE8: Status of Project set to In Progress - TE3: Role of the User was set to Data Scientist - RE4: Data Cleaned	UC05: Cleans Data
P7: Extracts Summary	- G10: Increasing the quality of data - G6: Fostering data has summary	2 hours / 2 times a month	A summary of the data is necessary to see how the data behaves and to find relationships in it. This process takes place in the data scientist workspace	C1 : DATA SCIENTIST evaluates USER REQUIREMENTS hardly	BR10:DATA SCIENTIST EXTRACTS DATA 1 BR11: DATA SCIENTIST EXTRACTS DATA 2	- TE8: Status of Project set to In Progress - TE3: Role of the User was set to Data Scientist - TE10: Quality of Data set to High - RE5: Summary Extracted	UC06: Extracts Summary
P8: Detemines Model	G8 : Obtaining the type of model.	1 hour / 2 times a month	This process takes place in the data scientist workspace. It is important to determine a model that best fits the behavior of the data.	C5 : DATA SCIENTIST does not have EXPERIENCE	BR7:DATA SCIENTIST DETERMINES THE MODEL	- TE3: Role of the User was set to Data Scientist - TE2: Validity of summary was set to True	UC07: Detemines Model
P9: Builds Application	G2 : Accomplishing application has solution	6 hours / 2 times a month	This process takes place in the data scientist workspace. The application is necessary to be able to work with the model and the data, using a programming and development tool to work with them.	C4 : APPLICATION does not have VERSION CONTROL SYSTEM	BR5:DATA SCIENTIST BUILDS APPLICATION	RE6: Application Built	UC08: Builds Application
P10: Updates Model	- G2 : Accomplishing application has solution - G3 : Enhancing the performance of the solution	2 hours / 8 times a month	This process takes place in the data scientist workspace. Sometimes the model needs refinement if the desired performance is not obtained at first, so it is updated.	C4 : APPLICATION does not have VERSION CONTROL SYSTEM	BR6: DATA SCIENTIST UPDATES THE MODEL	- TE8: Performance of Solution is less than Solution Validation of project - RE7: Model Updated	UC09: Updates Model
P11: Releases Result	G1 : Achieving the result	4 hours / 2 times a month	This process takes place in the data scientist workspace. It is important to be able to show the conclusions of what was obtained in the data processing, therefore the result must be concise and with the key points that were found to show in a clear and simple way to the stakeholders.		BR13:DATA SICIENTIST RELASES RESULT	- TE3: Role of the User was set to Data Scientist - TE9: Performance of Solution is greater than or equal to Solution Validation of project - RE8: Result Released	UC10: Releases Result
P12: Evaluates Result	- G4 : Conserving the end date of the project - G5 : Controlling the status of the project	2 hours / 6 times a month	This process takes place in the data scientist workspace. Continuous evaluation of results is important as stakeholders give feedback that should be evaluated on results		BR14: DATA SCIENTIST EVALUATES RESULT	- TE3: Role of the User was set to Data Scientist - TE10: Feedback Appears - RE9: Result Evaluated	

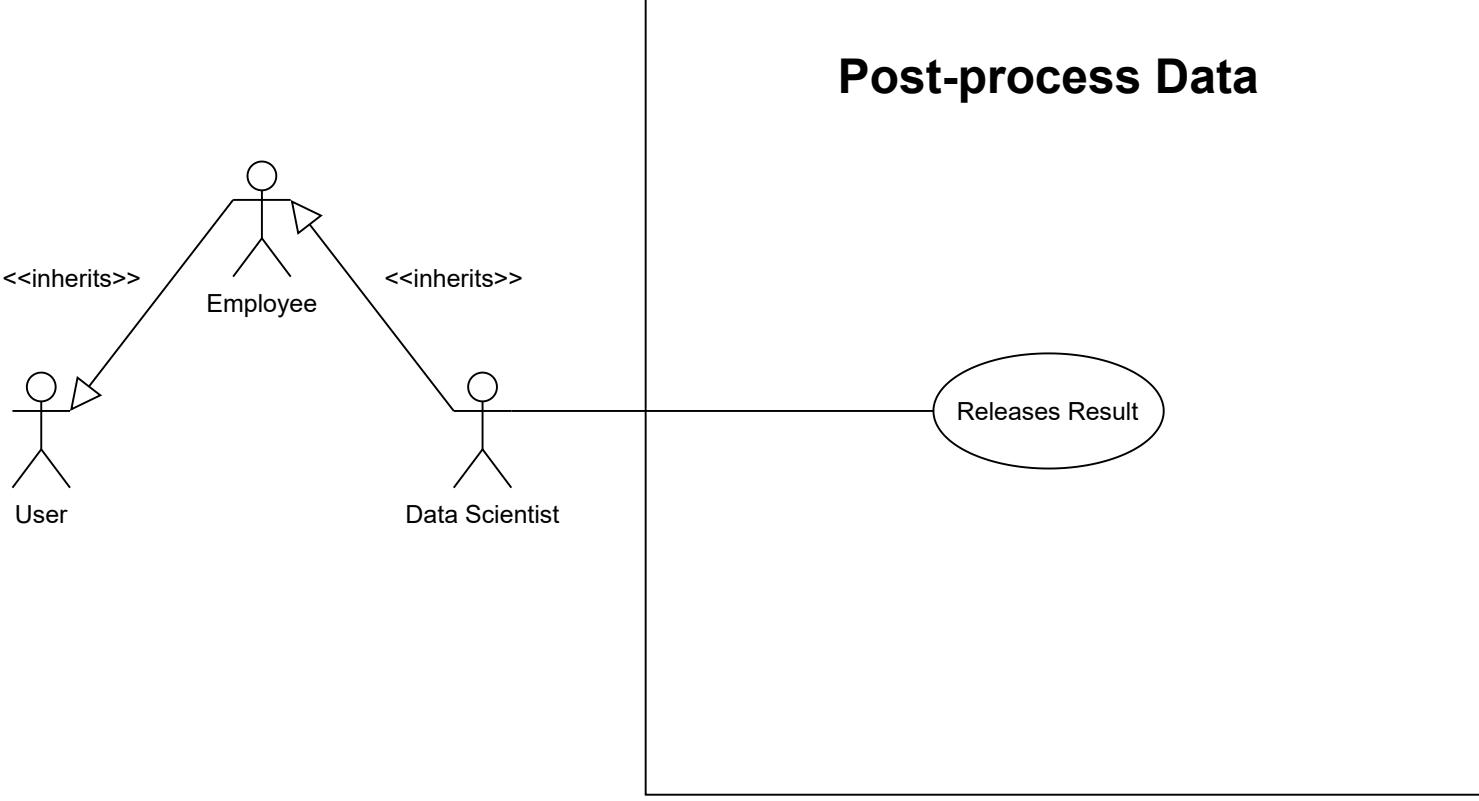
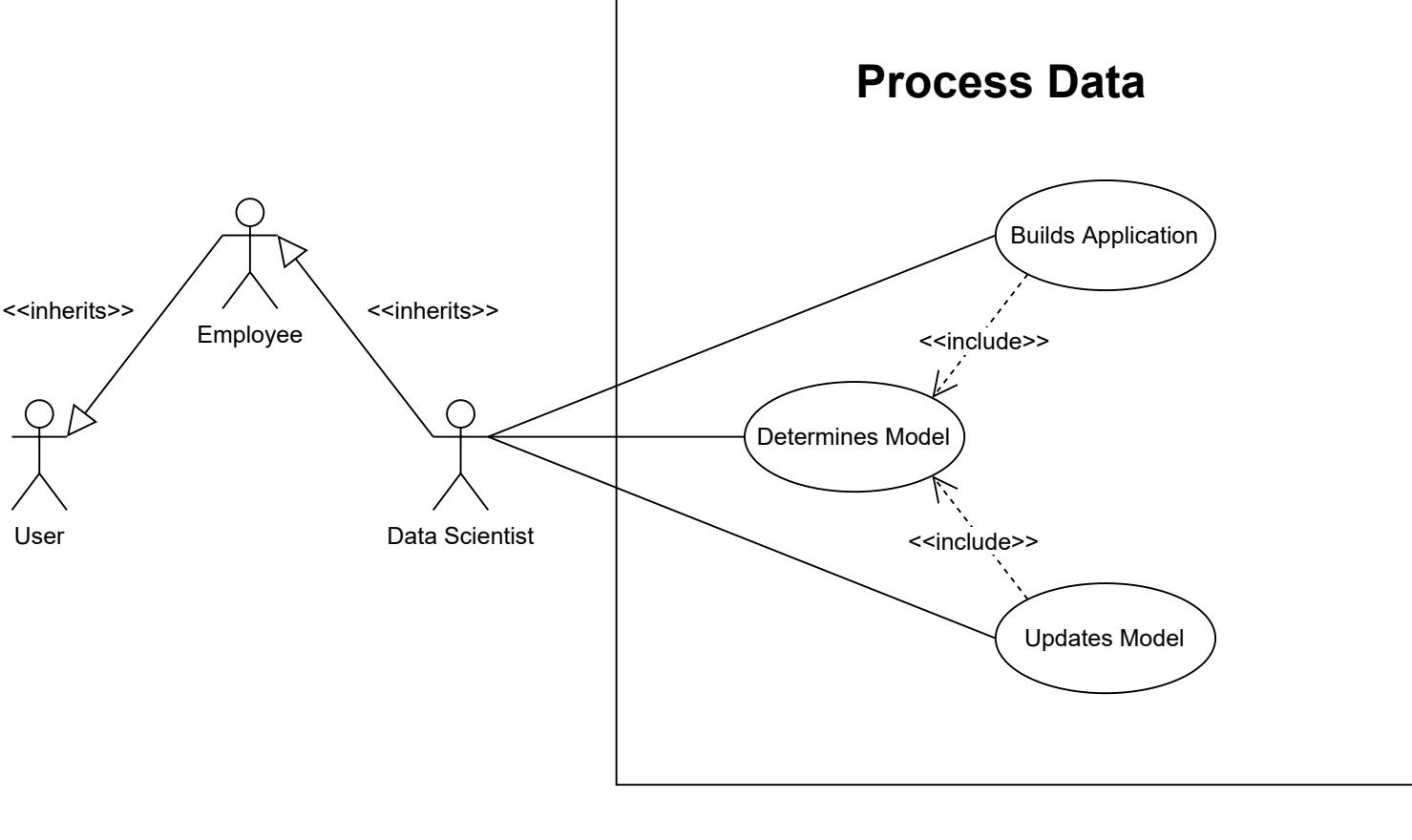
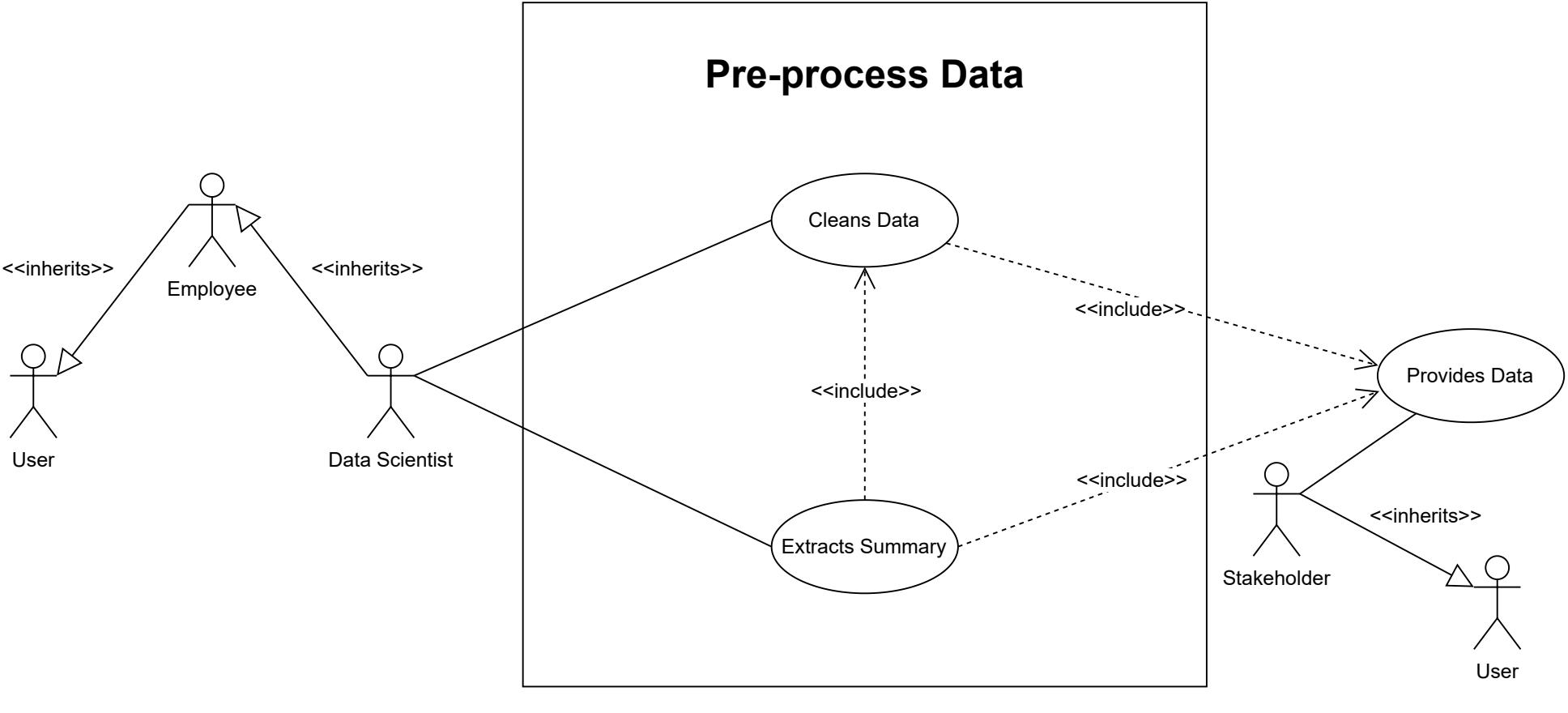
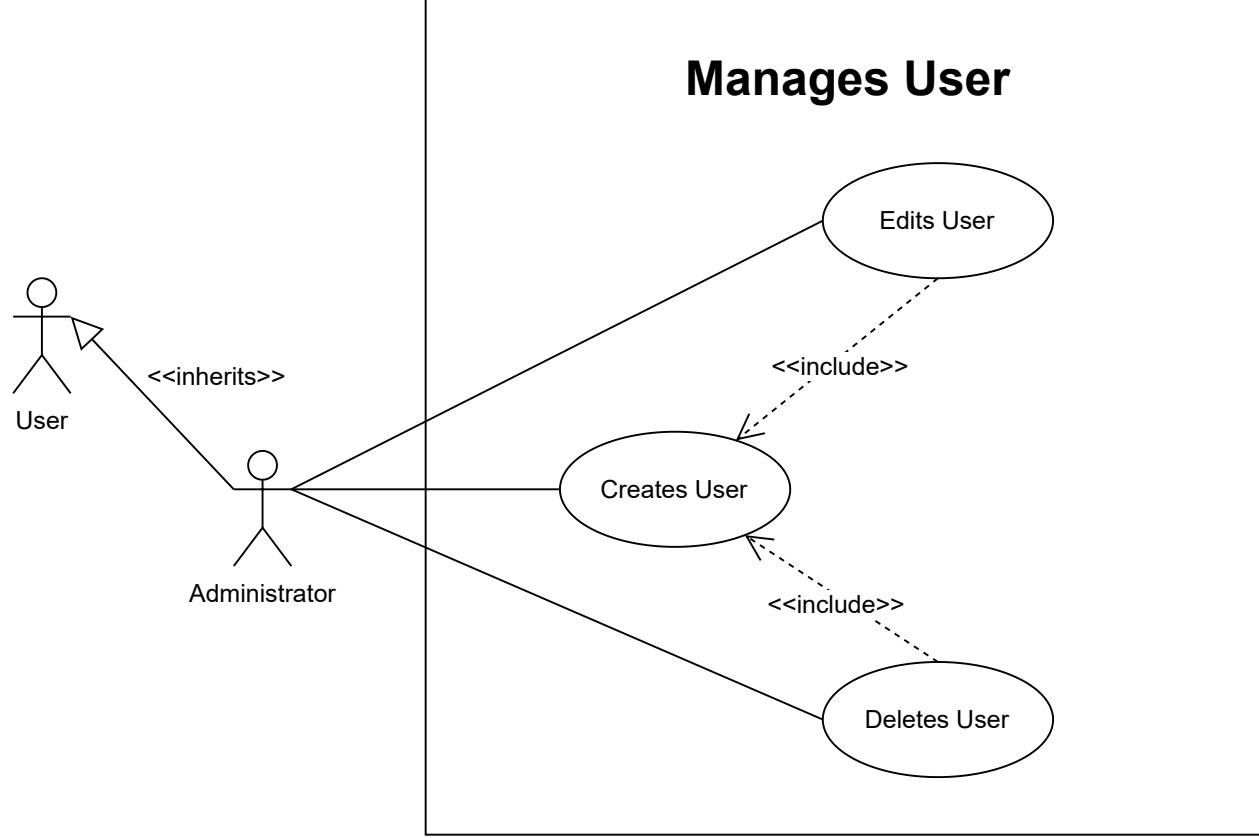
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NEW DATA DICTIONARY

Name	Alias	Type	Process involved	Features
A0: Administrator		Agent	P1: Creates User, P2: Deletes User, P3: Edits User	name, e-mail, password, role, identification
A1: Data Scientist		Agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User, P4: Evaluates user requirements, P6: Cleans Data, P7: Extracts Summary, P8: Determines Model, P9: Builds Application, P10: Updates Model, P11: Releases Result, P12: Evaluates Result	name, e-mail, password, role, identification, job title, experience, style, background
A2: Stakeholder		External agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User, P5: Provides Data	name, e-mail, password, role, identification
A3: User		Agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User	name, e-mail, password, role, identification
A4: Employee		Agent and I/O storage	P1: Creates User, P2: Deletes User, P3: Edits User	name, e-mail, password, role, identification, job title, experience
S5: Data		I/O Storage	P5: Provides Data, P6: Cleans Data,	name, version, file, type, classification, creation date, update date, description, size, format, quality
S6: Summary		I/O Storage	P7: Extracts Summary	validity, creation date, description, file
S7: Application		I/O Storage	P9: Builds Application, P10: Updates Model	version, creation date, tool, update date, version control system
S8: Solution		I/O Storage	P9: Builds Application, P10: Updates Model	update date, file, description, version, creation date, performance
S9: Model		I/O Storage	P8: Determines Model, P10: Updates Model	type, name
S10: User requirement		I/O Storage	P4: Evaluates user requirements	code, user story, status, description
S11: Project		I/O Storage		name, status, start date, end date, pre-processing tool, solution validation
S12: Result		I/O Storage	P11: Releases Result	update date, file, creation date, version, type
S13: Feedback		I/O Storage	P12: Evaluates Result	comment, date

USE CASES

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USE CASES EXPLANATORY TABLES

[BACK](#)

Use Case	UC01 Creates User																																
Version	1.0	Date	26/05/2022																														
Author	Diego Valentín Osorio Marín																																
Source	Stakeholders																																
Purpose	Registering the basic information of the users in the database																																
Goals	G7 : Maintaining the users																																
Summary	The system provides the interface to enter data for each user—e.g., user name, identification, e-mail and password. You can select the permits for assigning to the user.																																
Actors	A0: Administrator																																
Precondition	The arising of a user																																
Interaction Sequence	Administrator	System																															
1	Clicks on the hyperlink "CREATE"	Displays the interface "CREATE USER"																															
2	He/She enters the user name, identification, e-mail, password and selects role, and clicks on "Create" button.	Saves the new user and Displays the index interface																															
Alternative Sequences	Administrator	System																															
1-2	He/she clicks on the "Cancel" button.	Returns to index interface																															
1-2	He/she clicks on the "Data Scientist" title.	Returns to index interface																															
Duration	Optimum:3 minutes, Average: 4 minutes, Maximum:5 minutes																																
Frequency	4 times a month																																
Type	Primary																																
Postconditions	The user has been created																																
Chart	<pre> graph TD MU[Manages User] --- CU[Creates User] MU --- ED[Edits User] MU --- DL[Deletes User] CU -- "<<include>>" --> ED CU -- "<<include>>" --> DL DS[FOSTER] -- "<<include>>" --> CU User -- "<<inherits>>" --> Admin </inherits></include></include></include></pre>																																
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Use Case	UC02 Deletes User																																
Version	1.0	Date	26/05/2022																														
Author	Diego Valentín Osorio Marín																																
Source	Stakeholders																																
Purpose	Removing the information of obsolete users.																																
Goals	G7 : Maintaining the users																																
Summary	The system provides the interface to select the user who is intended to delete.																																
Actors	A0: Administrator																																
Precondition	The user must be created																																
Interaction Sequence	Administrator	System																															
1	Clicks on the hyperlink "DELETES"	Displays the interface "MANAGE USER"																															
2	He/She clicks on the user which is wanted to delete, then clicks on the "Delete" button	Deletes the user and returns to the index interface																															
Alternative Sequence	Administrator	System																															
1	Clicks on the hyperlink "EDITS"	Displays the interface "MANAGE USER"																															
2	He/she clicks on the "Data Scientist" title.	Returns to index interface																															
Duration	Optimum:30 seconds, Average: 1 minute, Maximum:2 minutes																																
Frequency	Once a month																																
Type	Primary																																
Postconditions	The user has been deleted																																
Chart	<pre> classDiagram class User class Administrator class EditsUser class CreatesUser class DeletesUser User --> <<inherits>> Administrator User --> <<include>> EditsUser User --> <<include>> DeletesUser Administrator --> <<include>> CreatesUser </pre>																																
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Use Case	<i>UC03 Edits User</i>				
Version	1.0	Date	26/05/2022		
Author	<i>Diego Valentin Osorio Marín</i>				
Source	Stakeholders				
Purpose	Allowing changes in the registered users				
Goals	G7 : Maintaining the users				
Summary	<i>The system provides the interface to select the user who is intended to delete.</i>				
Actors	A0: Administrator				
Precondition	The user must be created				
Interaction Sequence	Administrator	System			
1	Clicks on the hyperlink "EDITS"	Displays the interface "MANAGE USER"			
2	He/She clicks on the user which is wanted to edit, then clicks the "Edit" button.	Displays the interface "EDIT USER"			
3	He/She edits the user name, identification, e-mail, password and selects role, and clicks on "Edit" button.	Saves the edited information of the user and Displays the index interface			
Alternative Sequence	Administrator	System			
1	Clicks on the hyperlink "DELETES"	Displays the interface "MANAGE USER"			
1-2	He/she clicks on the "Data Scientist" title.	Returns to index interface			
1-3	He/she clicks on the "Cancel" button.	Returns to index interface			
Duration	Optimum:2 minutes, Average: 4 minutes, Maximum:4 minutes				
Frequency	9 times a month				
Type	Primary				
Postconditions	The user has been edited				
Chart					
Interfaces					
Data Scientist					
Data Scientist					

Use Case	<i>UC04 Provides Data</i>				
Version	1.0	Date	27/05/2022		
Author	<i>Diego Valentin Osorio Marin, Santiago Castro Tabares</i>				
Source	Stakeholders				
Purpose	<i>Allowing the stakeholders to provide data</i>				
Goals	<i>G11 : Ensuring project has data R7: Improving the data be provided This use case is intended to deal with the following problems:C3 : STAKEHOLDER provides DATA wrongly</i>				
Summary	<i>The system provides the interface to fill all fields required to provide data</i>				
Actors	<i>A2: Stakeholder</i>				
Precondition	<i>The validity of the summary must be false or the stakeholder must be shows up</i>				
Interaction Sequence	Stakeholder	System			
1	Clicks on the hyperlink "PROVIDES"	Displays the interface "PROVIDE DATA"			
2	He/She enters de data information like name, file and others. He/She click on the button "PROVIDE"	Saves the data information of the user and Displays the index interface			
Alternative Sequence	Stakeholder	System			
2	He/she clicks on the "Data Scientist" title.	Returns to index interface			
1-2	He/she clicks on the "Cancel" button.	Returns to index interface			
Duration	<i>Optimum:5 minutes, Average: 8 minutes, Maximum:10 minutes</i>				
Frequency	<i>2 times a month</i>				
Type	<i>Primary</i>				
Postconditions	<i>The data has been provided</i>				
Chart					
Interfaces					
Data Scientist					
Data Scientist					

Use Case	<i>UC05 Cleans Data</i>																																	
Version	1.0	Date 27/05/2022																																
Author	Diego Valentin Osorio Marin, Santiago Castro Tabares																																	
Source	Stakeholders																																	
Purpose	Allow the data scientist to improve the quality of the data																																	
Goals	<p>G10: Increasing the quality of data R6: Making the data be pre-processed This use case is intended to deal with the following problems: C3: STAKEHOLDER provides DATA wrongly</p>																																	
Summary	The system provides the interface to fill all fields required to provide a clean version data																																	
Actors	A1: Data Scientist																																	
Precondition	The project status should be in progress and the quality of the data should be high and the stakeholder should have provided the data.																																	
Interaction Sequence	Data Scientist	System																																
1	Clicks on the hyperlink "CLEANS"	Displays the interface "DATA TO CLEAN"																																
2	He/She selects the data instance to be cleaned He/She click on the button "CLEANS"	Displays the interface "PROVIDE DATA"																																
3	He/She enters de data information like name, file and others. He/She click on the button "PROVIDE"	Saves the data information of the user and Displays the index interface																																
Alternative Sequence	Data Scientist	System																																
1-2	He/she clicks on the "Data Scientist" title.	Returns to index interface																																
1-3	He/she clicks on the "Data Scientist" title.	Returns to index interface																																
1-3	He/she clicks on the "Cancel" button.	Returns to index interface																																
Duration	Optimum: 15 hours, Average: 25 hours, Maximum:36 hours																																	
Frequency	2 times a month																																	
Type	Primary																																	
Postconditions	The data has been cleaned																																	
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Interfaces																																		
Data Scientist	<h3>DATA TO CLEAN</h3> <table border="1"> <thead> <tr> <th>Name</th> <th>Version</th> <th>File</th> <th>Type</th> <th>Classification</th> <th>Description</th> <th>Size</th> <th>Format</th> </tr> </thead> <tbody> <tr> <td>Users data</td> <td>1.0</td> <td>user_data.jpg</td> <td>Unstructured Data</td> <td>Deterministic</td> <td>This file contains the information about users of Netflix, with different attributes</td> <td>1.5 GB</td> <td>Images</td> </tr> <tr> <td>Iris Data</td> <td>1.0</td> <td>iris_data.csv</td> <td>Structured Data</td> <td>Deterministic</td> <td>This file contains information about iris flowers and its characteristics</td> <td>30 MB</td> <td>Attributes</td> </tr> <tr> <td>Movies Data</td> <td>1.0</td> <td>movies.csv</td> <td>Structured Data</td> <td>Probabilistic</td> <td>This file contains information about movies and its characteristics</td> <td>30 MB</td> <td>Database</td> </tr> </tbody> </table> <p>Cleans</p>		Name	Version	File	Type	Classification	Description	Size	Format	Users data	1.0	user_data.jpg	Unstructured Data	Deterministic	This file contains the information about users of Netflix, with different attributes	1.5 GB	Images	Iris Data	1.0	iris_data.csv	Structured Data	Deterministic	This file contains information about iris flowers and its characteristics	30 MB	Attributes	Movies Data	1.0	movies.csv	Structured Data	Probabilistic	This file contains information about movies and its characteristics	30 MB	Database
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Use Case	UC06 Extracts Summary																																		
Version	1.0	Date	27/05/2022																																
Author	Diego Valentin Osorio Marin, Santiago Castro Tabares																																		
Source	Stakeholders																																		
Purpose	Allow the data scientist to load a summary of the clean data																																		
Goals	G10 : Increasing the quality of data G6: Fostering data has summary R6: Making the data be pre-processed This use case is intended to deal with the following problems: C1: DATA SCIENTIST evaluates USER REQUIREMENTS hardly																																		
Summary	The system provides the interfaces to associate summaries to the data																																		
Actors	A1: Data Scientist																																		
Precondition	Project status must be in progress and data quality must be high or project status must be in progress and the data scientist cleaned up the data																																		
Interaction Sequence	Data Scientist	System																																	
1	Clicks on the hyperlink "EXTRACTS"	Displays the interface "DATA TO EXTRACT"																																	
2	He/She selects the data instance to which the summary is to be associated He/She click on the button "NEXT"	Displays the interface "EXTRACT SUMMARY"																																	
3	He/She enters de data information like file, description and if it is validate or not He/She click on the button "ACCEPT"	Saves the summary information of the summary and Displays the index interface																																	
Alternative Sequence	Data Scientist	System																																	
2	He/she clicks on the "Data Scientist" title.	Returns to index interface																																	
1-3	He/she clicks on the "Data Scientist" title.	Returns to index interface																																	
1-3	He/she clicks on the "Cancel" button.	Returns to index interface																																	
Duration	Optimum:50 minutes, Average: 1 hours, Maximum: 2 hours																																		
Frequency	2 times a month																																		
Type	Primary																																		
Postconditions	The summary has been extracted																																		
Chart																																			
Interfaces																																			
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Data Science	<p>Extract Summary</p> <p>Seleccionar archivo Ninguno a...hivo selec.</p> <p>Description</p> <p>Validity <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>Accept Cancel</p>																																		
Data Science	<p>SUMMARY</p> <table border="1"> <thead> <tr> <th>Validity</th> <th>Creation Date</th> <th>Description</th> <th>File</th> <th>Data Name</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>04/07/2021</td> <td>This summary ...</td> <td>inform.pdf</td> <td>data12</td> </tr> <tr> <td>Yes</td> <td>04/07/2021</td> <td>This summary ...</td> <td>inform.pdf</td> <td>data12</td> </tr> </tbody> </table>			Validity	Creation Date	Description	File	Data Name	Yes	04/07/2021	This summary ...	inform.pdf	data12	Yes	04/07/2021	This summary ...	inform.pdf	data12																	
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Use Case	UC07 Determines Model												
Version	1.0	Date	27/05/2022										
Author	Diego Valentin Osorio Marin, Santiago Castro Tabares												
Source	Stakeholders												
Purpose	Allow the data scientist to fill in the fields for the model that he determined												
Goals	G8: Obtaining the type of model. R7: Making the data be processed This use case is intended to deal with the following problems: C5: DATA SCIENTIST does not have EXPERIENCE												
Summary	The system provides the interface to fill all fields required to determines a model												
Actors	A1: Data Scientist												
Precondition	The summary must be valid												
Interaction Sequence	Data Scientist	System											
1	Clicks on the hyperlink "DETERMINES"	Displays the interface "DETERMINE MODEL"											
2	He/She enters de data information like name and type. He/She click on the button "ACCEPT"	Saves the model information and Displays the index interface											
Alternative Sequence	Data Scientist	System											
2	He/she clicks on the "Data Scientist" title.	Returns to index interface											
1-2	He/she clicks on the "Cancel" button.	Returns to index interface											
Duration	Optimum:30 minutes, Average: 45 minutes, Maximum:1 hour												
Frequency	2 times a month												
Type	Primary												
Postconditions	The model has been provided												
Chart	<pre> classDiagram User --> Employee : <<inherits>> Employee --> DataScientist : <<inherits>> DataScientist --> DetermineModel : DetermineModel --> BuildsApplication : <<include>> DetermineModel --> UpdatesModel : <<include>> end </pre>												
Interfaces	<p>The sequence diagram illustrates the interaction between the Data Scientist, the PROCESS, and several data objects. The process starts with the Data Scientist performing a 'KEEPING' action. This leads to the creation of objects like APPLICATION, TYPE, NAME, and MODEL. The process then involves three main steps: BUILDING (BUILD), UPDATING (UPDATES), and DETERMINING (DETERMINES). These steps interact with the data objects through associations labeled HAS, HAS_UNIQUE, and SUMM. The process ends with the Data Scientist accepting or canceling the operation.</p>												
Data Scientist	<p>The screenshot shows the 'Determine Model' interface. It contains two input fields: 'Name' and 'Type'. Below the fields are two buttons: 'Accept' and 'Cancel'.</p>												
Data Scientist	<table border="1"> <thead> <tr> <th colspan="2">MODEL</th> </tr> <tr> <th>Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>Iris class model</td> <td>Classification</td> </tr> <tr> <td>Fraud detection model</td> <td>Clustering</td> </tr> <tr> <td>Differential equations model</td> <td>Growth model</td> </tr> </tbody> </table>			MODEL		Name	Type	Iris class model	Classification	Fraud detection model	Clustering	Differential equations model	Growth model
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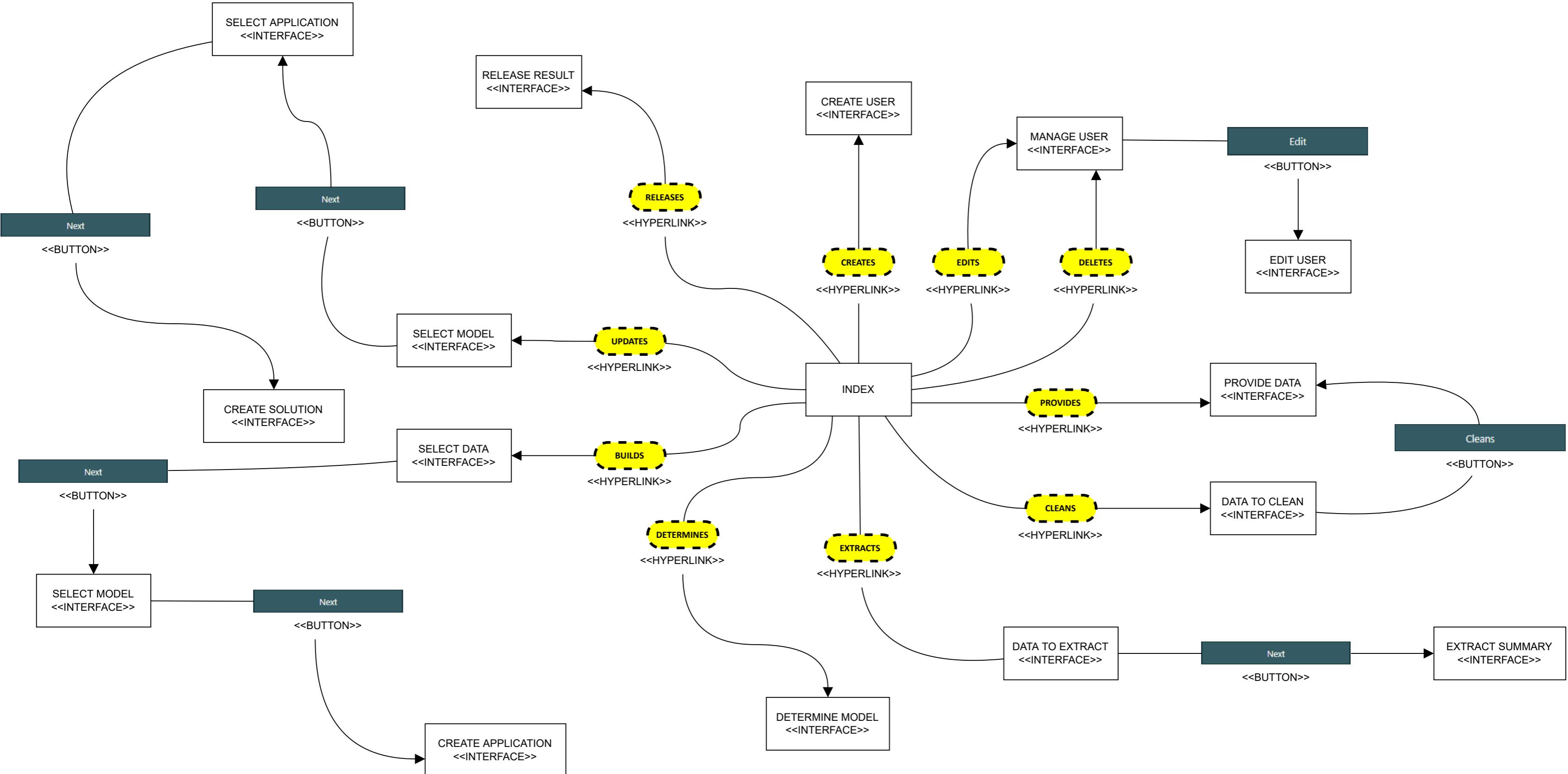
Use Case	UC08 Builds Application		
Version	1.0	Date	28/05/2022
Author	Diego Valentín Osorio Marín, Santiago Castro Tabares		
Source	Stakeholders		
Purpose	Allowing the data scientist to accomplish the solution of the model by creating an application.		
Goals	G2 : Accomplishing application has solution, R3: Making the data be processed This use case is intended to deal with the following problems: C4 : APPLICATION does not have VERSION CONTROL SYSTEM		
Summary	The system provides the interface to fill all fields required to build application		
Actors	A1: Data Scientist		
Precondition	The determination of a model		
Interaction Sequence	Data Scientist Clicks on the hyperlink "BUILDS"		System Displays the interface "SELECT DATA"
1	He/She selects the data. He/She click on the button "next"		Displays the interface "SELECT MODEL"
2	He/She selects the model. He/She click on the button "next"		Displays the interface "CREATE APPLICATION"
3	He/She enters de application information like tool and version control system. He/She clicks on the button "Accept"		Saves the application information and return to index interface.
Alternative Sequence	Data Scientist He/she clicks on the "Data Scientist" title.		System Returns to index interface
2	He/she clicks on the "Data Scientist" title.		Returns to index interface
3	He/she clicks on the "Data Scientist" title.		Returns to index interface
4	He/she clicks on the "Cancel" button.		Returns to index interface
Duration	Optimum:1 hour, Average: 3 hours, Maximum:6 hours		
Frequency	2 times a month		
Type	Primary		
Postconditions	The application has been built		
Chart			
Interfaces			
Data Scientist			

Use Case	UC09 Updates Model												
Version	1.0	Date	27/05/2022										
Author	Diego Valentin Osorio Marin, Santiago Castro Tabares												
Source	Stakeholders												
Purpose	Allowing the data scientist to update the model and the creation of a new solution for it.												
Goals	G2 : Accomplishing application has solution, G3 : Enhancing the performance of the solution, R1: Keeping the model be updated, R3: Making the data be processed This use case is intended to deal with the following problems: C4 : APPLICATION does not have VERSION CONTROL SYSTEM												
Summary	The system provides the interfaces to fill all fields required to update model												
Actors	A1: Data Scientist												
Precondition	The performance of the solution must be less than the solution validation of the project and the determination of a model.												
Interaction Sequence	<table border="1"> <thead> <tr> <th style="text-align: center;">Data Scientist</th> <th style="text-align: center;">System</th> </tr> </thead> <tbody> <tr> <td>1 Clicks on the hyperlink "UPDATES"</td> <td>Displays the interface "SELECT MODEL"</td> </tr> <tr> <td>2 He/She selects the model to edit. He/She click on the button "next"</td> <td>Displays the interface "SELECT APPLICATION"</td> </tr> <tr> <td>3 He/She selects the application to edit. He/She click on the button "next"</td> <td>Displays the interface "CREATE SOLUTION"</td> </tr> <tr> <td>4 He/She enters de solution information like description and file. He/She clicks on the button "Provide"</td> <td>Saves the solution information and returns to the index interface.</td> </tr> </tbody> </table>			Data Scientist	System	1 Clicks on the hyperlink "UPDATES"	Displays the interface "SELECT MODEL"	2 He/She selects the model to edit. He/She click on the button "next"	Displays the interface "SELECT APPLICATION"	3 He/She selects the application to edit. He/She click on the button "next"	Displays the interface "CREATE SOLUTION"	4 He/She enters de solution information like description and file. He/She clicks on the button "Provide"	Saves the solution information and returns to the index interface.
Data Scientist	System												
1 Clicks on the hyperlink "UPDATES"	Displays the interface "SELECT MODEL"												
2 He/She selects the model to edit. He/She click on the button "next"	Displays the interface "SELECT APPLICATION"												
3 He/She selects the application to edit. He/She click on the button "next"	Displays the interface "CREATE SOLUTION"												
4 He/She enters de solution information like description and file. He/She clicks on the button "Provide"	Saves the solution information and returns to the index interface.												
Alternative Sequence	<table border="1"> <thead> <tr> <th style="text-align: center;">Data Scientist</th> <th style="text-align: center;">System</th> </tr> </thead> <tbody> <tr> <td>2 He/she clicks on the "Data Scientist" title.</td> <td>Returns to index interface</td> </tr> <tr> <td>3 He/she clicks on the "Data Scientist" title.</td> <td>Returns to index interface</td> </tr> <tr> <td>4 He/she clicks on the "Data Scientist" title.</td> <td>Returns to index interface</td> </tr> <tr> <td>4 He/she clicks on the "Cancel" button.</td> <td>Returns to index interface</td> </tr> </tbody> </table>			Data Scientist	System	2 He/she clicks on the "Data Scientist" title.	Returns to index interface	3 He/she clicks on the "Data Scientist" title.	Returns to index interface	4 He/she clicks on the "Data Scientist" title.	Returns to index interface	4 He/she clicks on the "Cancel" button.	Returns to index interface
Data Scientist	System												
2 He/she clicks on the "Data Scientist" title.	Returns to index interface												
3 He/she clicks on the "Data Scientist" title.	Returns to index interface												
4 He/she clicks on the "Data Scientist" title.	Returns to index interface												
4 He/she clicks on the "Cancel" button.	Returns to index interface												
Duration	Optimum:10 minutes, Average: 1 hour, Maximum:2 hours												
Frequency	8 times a month												
Type	Primary												
Postconditions	The model has been updated												
Chart	<pre> classDiagram class Employee class DataScientist class User User --> Employee : <<inherits>> User --> DataScientist : <<inherits>> DataScientist --> BuildsApplication : <<include>> DataScientist --> DeterminesModel : <<include>> </pre>												
Interfaces													
Data Scientist													
Data Scientist													
Data Scientist													
Data Science													

Use Case	UC10 Releases Result																						
Version	1.0	Date	27/05/2022																				
Author	Diego Valentin Osorio Marin, Santiago Castro Tabares																						
Source	Stakeholders																						
Purpose	Allowing the data scientist to achieve the result and publishing it.																						
Goals	G1 : Achieving the result, R5: Making the data be post-processed																						
Summary	The system provides the interface to fill all fields required to release result																						
Actors	A1: Data Scientist																						
Precondition	The performance of the solution must be better or equal than the solution validation of the project																						
Interaction Sequence	Data Scientist	System																					
1	Clicks on the hyperlink "RELEASES"	Displays the interface "RELEASE RESULT"																					
2	He/She enters de result information like type and file. He/She click on the button "Accept"	Saves the result information and returns to the index interface																					
Alternative Sequence	Data Scientist	System																					
2	He/she clicks on the "Data Scientist" title.	Returns to index interface																					
1-2	He/she clicks on the "Cancel" button.	Returns to index interface																					
Duration	Optimum:10 minutes, Average: 2 hours, Maximum:4 hours																						
Frequency	2 times a month																						
Type	Primary																						
Postconditions	The result has been released																						
Chart	<pre> classDiagram class User class Employee class DataScientist class PostProcessData { <<inherits>> Employee <<inherits>> DataScientist } User --> Employee Employee --> DataScientist User --> PostProcessData DataScientist --> PostProcessData </pre>																						
Interfaces	<p>Sequence Diagram:</p> <pre> sequenceDiagram User->>RESULT: activate RESULT RESULT->>HAS: HAS-->>MAKING activate MAKING MAKING-->>POST-PROCESS activate POST-PROCESS POST-PROCESS-->>EVALUATES EVALUATES-->>RELEASES RELEASES-->>HAS RELEASES-->>POST-PROCESS deactivate POST-PROCESS deactivate EVALUATES deactivate RELEASES deactivate HAS deactivate MAKING </pre> <p>5</p>																						
	<p>Data Scientist</p>																						
	<p>Data Scientist</p> <table border="1"> <thead> <tr> <th>Creation Date</th> <th>File</th> <th>Version</th> <th>Type</th> <th>Update Date</th> </tr> </thead> <tbody> <tr> <td>19-01-2022</td> <td>dashboard.js</td> <td>1.0</td> <td>dashboard</td> <td>19-02-2022</td> </tr> <tr> <td>12-01-2022</td> <td>solution_car_movility</td> <td>3.5</td> <td>Python Project</td> <td>01-02-2022</td> </tr> <tr> <td>19-03-2022</td> <td>mother_summary.pdf</td> <td>1.0</td> <td>dashboard</td> <td>20-03-2022</td> </tr> </tbody> </table>			Creation Date	File	Version	Type	Update Date	19-01-2022	dashboard.js	1.0	dashboard	19-02-2022	12-01-2022	solution_car_movility	3.5	Python Project	01-02-2022	19-03-2022	mother_summary.pdf	1.0	dashboard	20-03-2022
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19-03-2022	mother_summary.pdf	1.0	dashboard	20-03-2022																			

USER INTERFACE FLOW DIAGRAM

< BACK



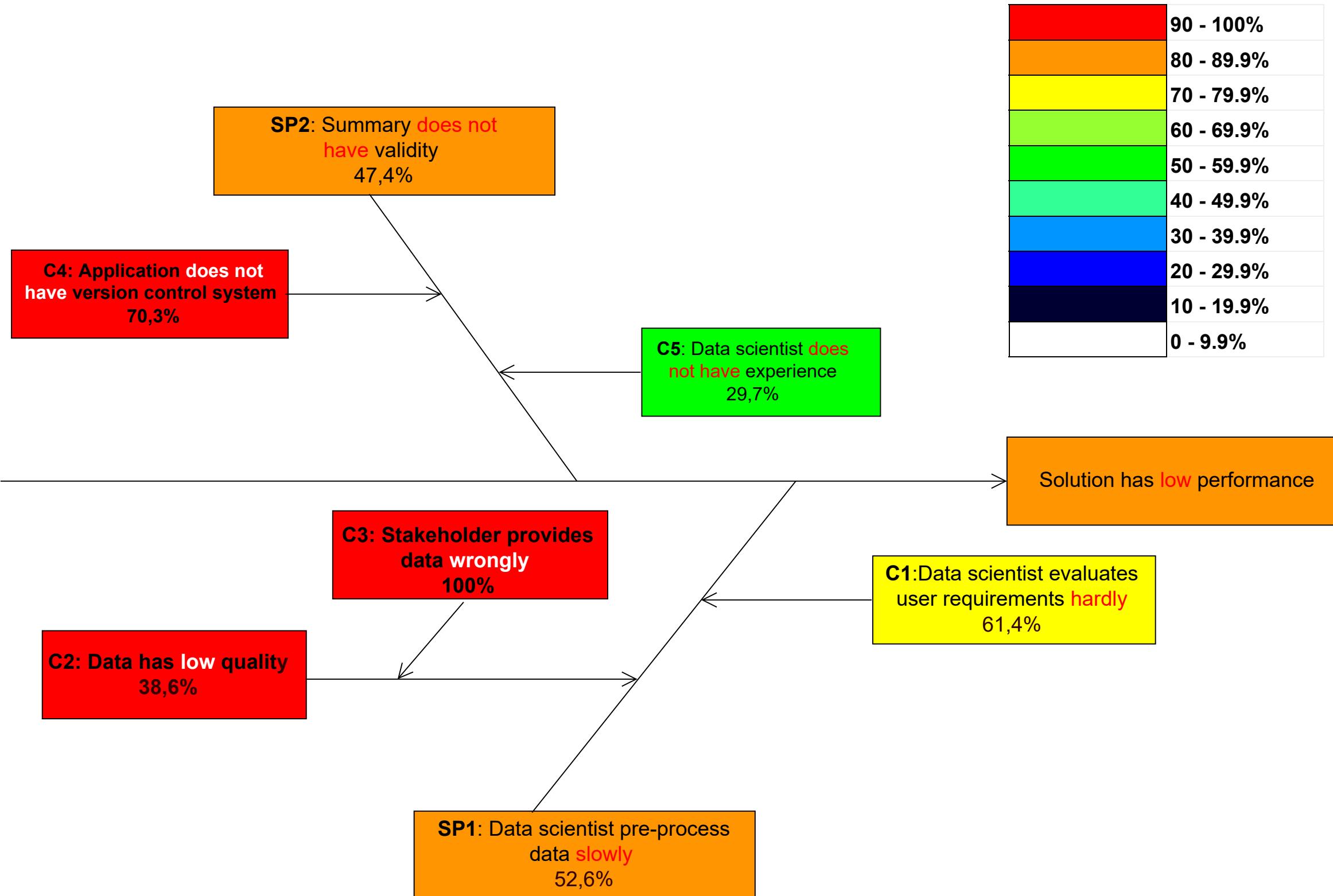
 BACK

SOLUTION VALUE

Process	Goals/Requirements	Problems	Use Cases
P1: Creates User	G7, R2		UC01: Creates User
P2: Edits User	G7, R2		UC02: Edits User
P3: Deletes User	G7, R2		UC03: Deletes User
P5: Provides Data	G11, R6, R7	C3	UC05: UCrovides Data
P6:Cleans Data	G10, R6	C3	UC06: Cleans Data
P7: Extracs Summary	G6, G10, R6	C1	UC07: Extracs Summary
P8: Determines Model	G8, R3	C5	UC08: Determines Model
P9: Builds Application	G2, R3	C4	UC09: Builds AUCUClification
P10: Updates Model	G2, G3, R3, R1	C4	UC10: Updates Model
P11: Releases Result	G1, R5		UC11: Releases Result

Use Case	Cause	P _{i,j}	Q _{i,j}	C _i	%
UC07	C1	61,4	52,6	78,2	25,2
UC05, UC06	C3	38,6	52,6	100,0	20,3
UC09, UC10	C4	70,3	47,4	100,0	33,3
UC08	C5	29,7	47,4	50,0	7,0
TOTAL COVERAGE					85,9

NEW CAUSE-AND-EFFECT DIAGRAM < BACK



CRITICAL SUCCESS FACTOR MATRICES

BACK

SELF INTERACTION MATRIX

CSF	7	6	5	4	3	2	1
1 Data Availability	V	V	0	0	V	A	
2 Data Organization	V	V	0	0	A		
3 Model Tracking	V	A	0	0			
4 User Management	0	0	X				
5 Project Tracking	X	0					
6 Application Management	A						
7 Result Management							

REACHABILITY MATRIX

CSF	1	2	3	4	5	6	7	Driving power
1 Data Availability	1	0	1	0	0	1	1	4
2 Data Organization	1	1	0	0	0	1	1	4
3 Model Tracking	0	1	1	0	0	0	1	3
4 User Management	0	0	0	1	1	0	0	2
5 Project Tracking	0	0	0	1	1	0	1	3
6 Application Management	0	0	1	0	0	1	0	2
7 Result Management	0	0	0	0	1	1	1	3
Dependance	2	2	3	2	3	4	5	

First iteration to obtain the level of the case study

CSF	Reachability set	Antecedent set	Intersection set	Level
1	1, 3, 6, 7	1, 2	1	
2	1, 2, 6, 7	2, 3	2	
3	2, 3, 7	1, 3, 6	3	
4	4, 5	4, 5	4, 5	I
5	4, 5	4, 5, 7	4, 5	I
6	3, 6	1, 2, 6, 7	6	
7	5, 6, 7	1, 2, 3, 5, 7	5, 7	

Second iteration to obtain the level of the case study

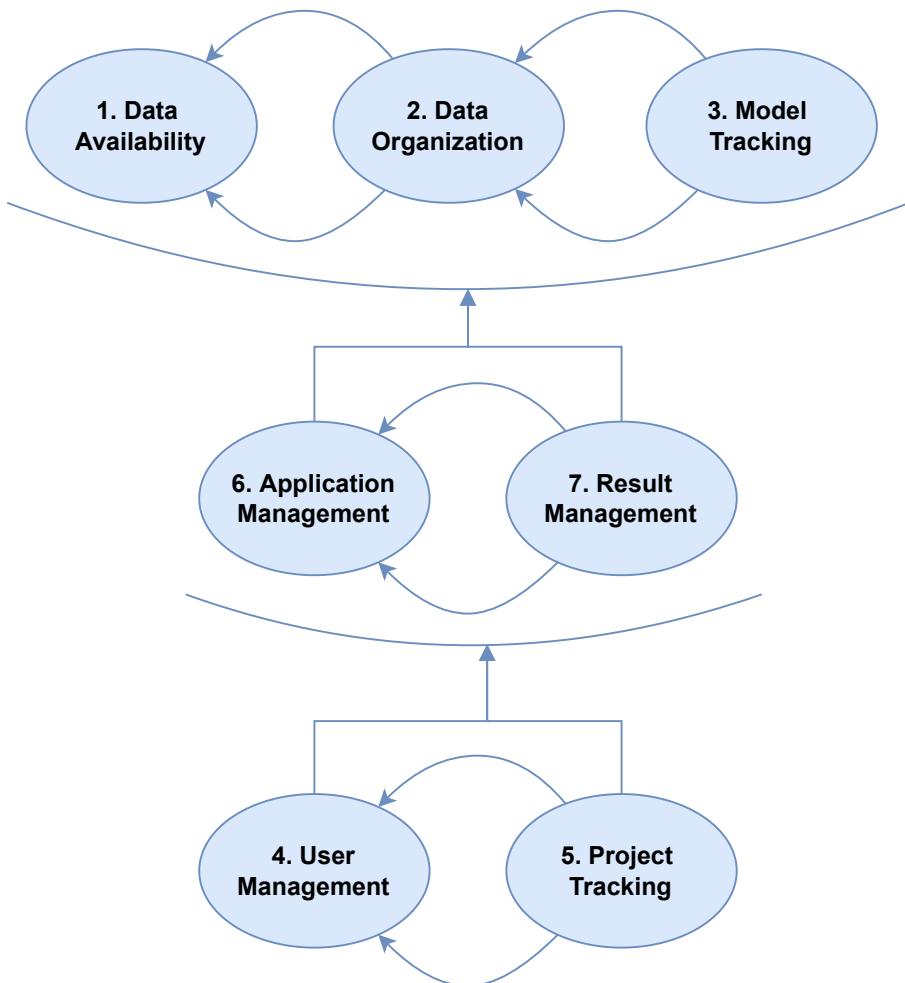
CSF	Reachability set	Antecedent set	Intersection set	Level
1	1, 3, 6, 7	1, 2	1	
2	1, 2, 6, 7	2, 3	2	
3	2, 3, 7	1, 3, 6	3	
6	3, 6	1, 2, 6, 7	6	II
7	6, 7	1, 2, 3, 7	7	II

Second iteration to obtain the level of the case study

CSF	Reachability set	Antecedent set	Intersection set	Level
1	1, 3	1, 2	1	III
2	1, 2	2, 3	2	III
3	2, 3	1, 3	3	III

Interpretive Structural Model

BACK



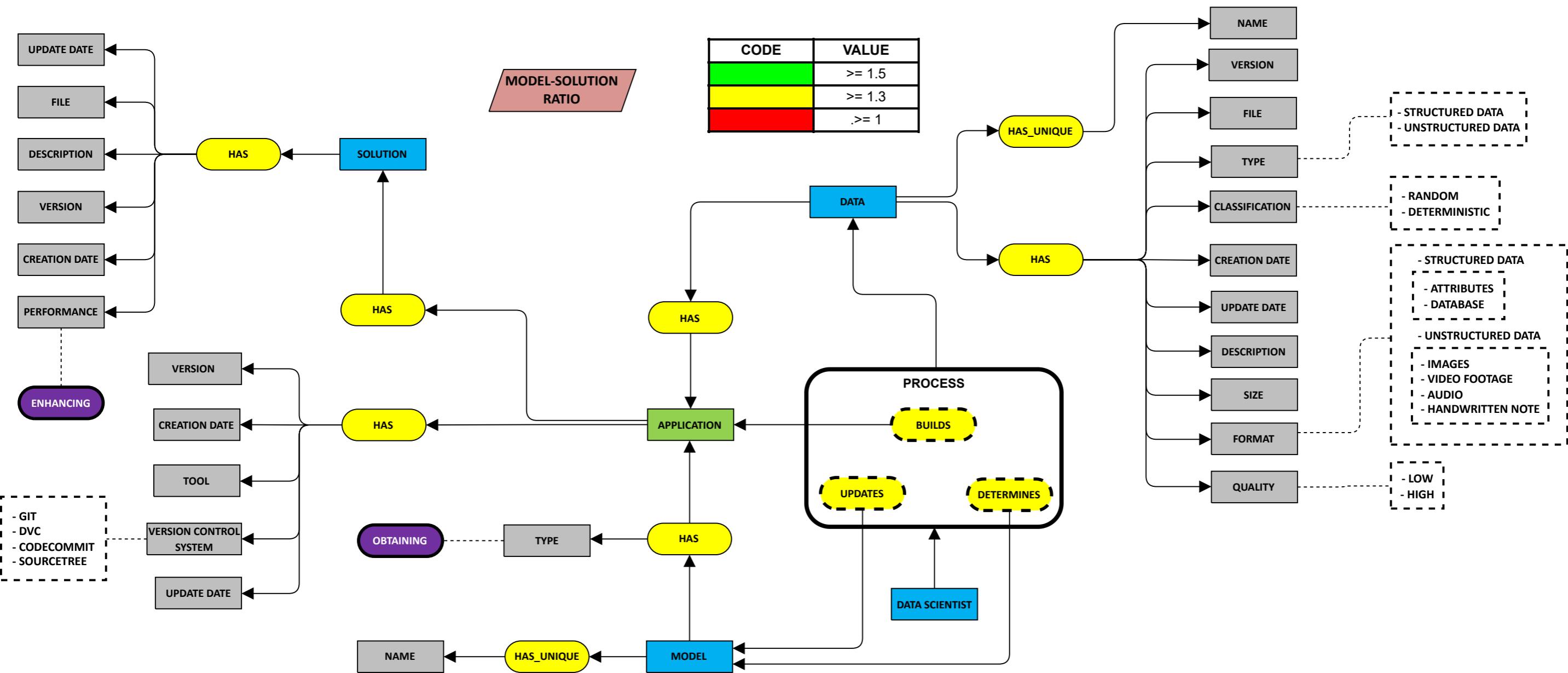
KPI Definition Table

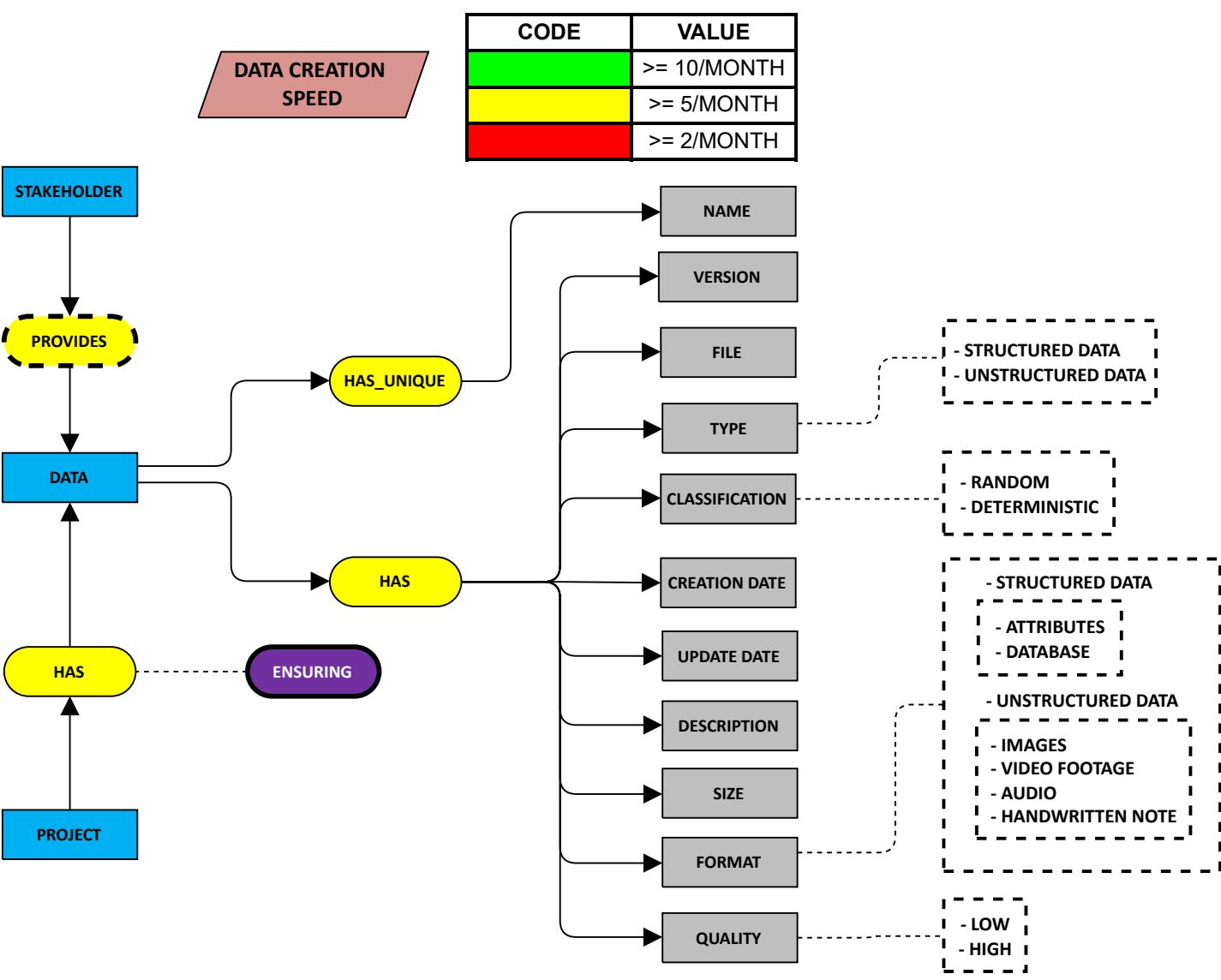
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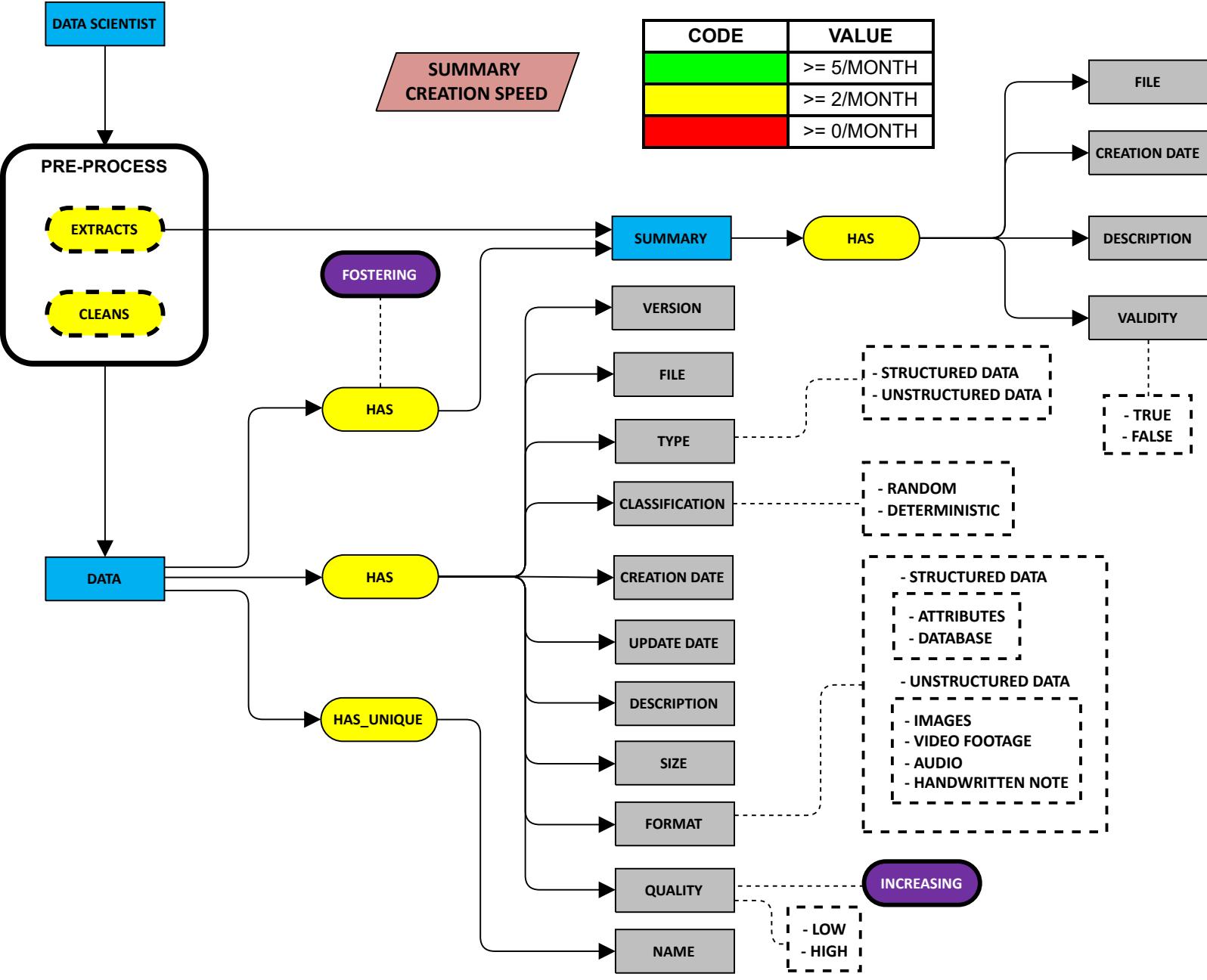
CSF	GOAL	KPI	FORMULA
3. Model tracking	G8: Obtaining the type of the model G3: Enhancing the performance of the solution	Model-Solution ratio	$\frac{\text{Number of SOLUTIONS}}{\text{Number of MODELS}}$
1. Data Availability	G11: Ensuring project has data	Data creation speed	$\frac{\text{Number of instances of DATA}}{\text{Time Unit}}$
2. Data Organization	G10: Increasing the quality of data G6: Fostering data has summary	Summary creation speed	$\frac{\text{Number of SUMMARIES}}{\text{Time Unit}}$
7. Result management	G1: Achieving the result G9: Fostering the feedback	Result-Feedback ratio	$\frac{\text{Number of instances of FEEDBACK}}{\text{Number of instances of RESULT}}$
6. Application management	G2: Accomplishing application has solution G3: Enhancing the performance of the solution	Average performance	$\frac{\sum_{i=1}^{\text{Number of SOLUTIONS}} \text{PERFORMANCE}_i}{\text{Number of SOLUTIONS}}$
5. Project tracking	G4: Conserving the end date of the project G5: Controlling the status of the project	Average project duration	$\frac{\sum_{i=1}^{\text{Number of PROJECTS}} (\text{END DATE}_i - \text{START DATE}_i)}{\text{Number of PROJECTS}}$
4. User management	G7: Maintaining the users	User creation speed	$\frac{\text{Number of USERS}}{\text{Time Unit}}$

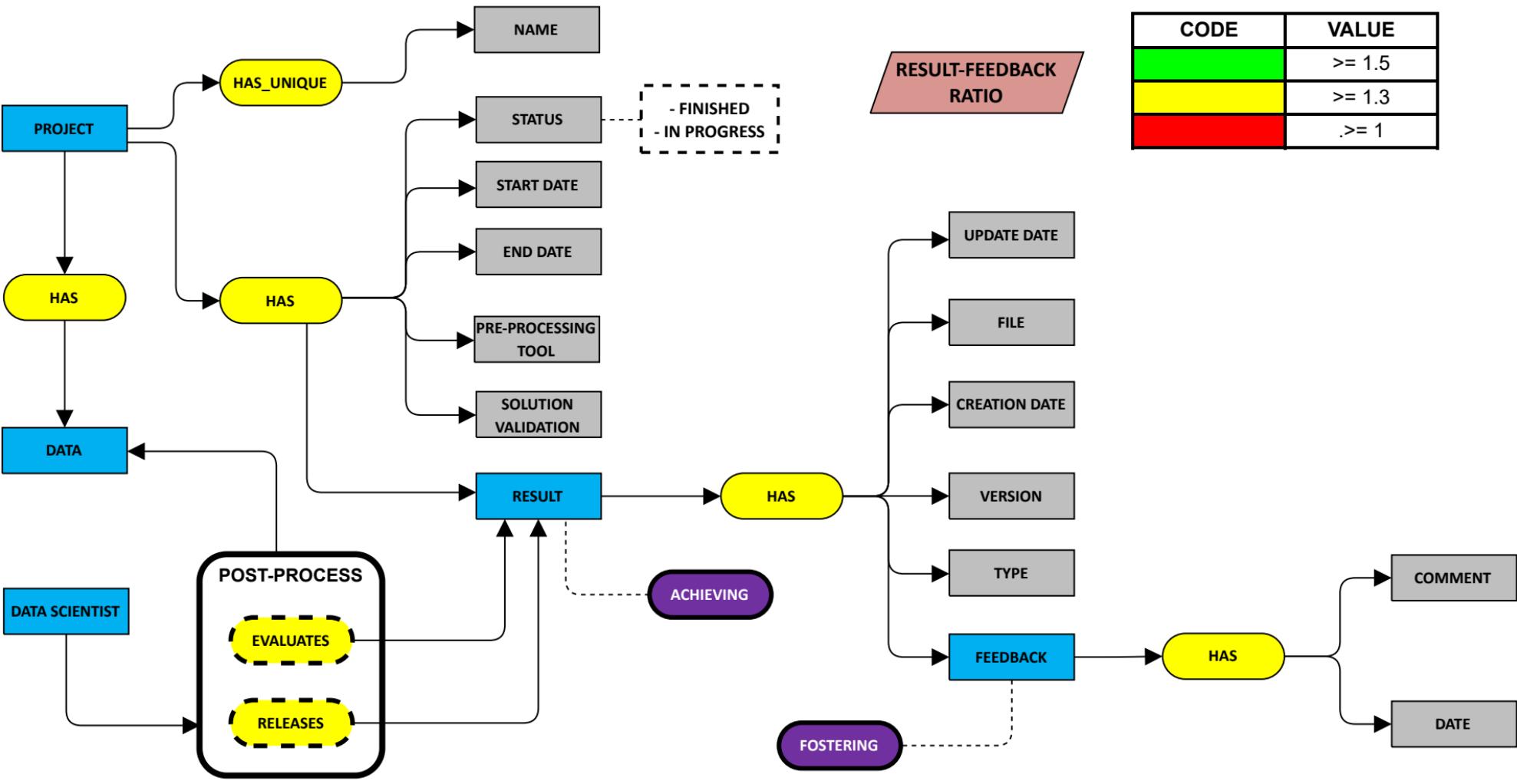
KPI DESIGN

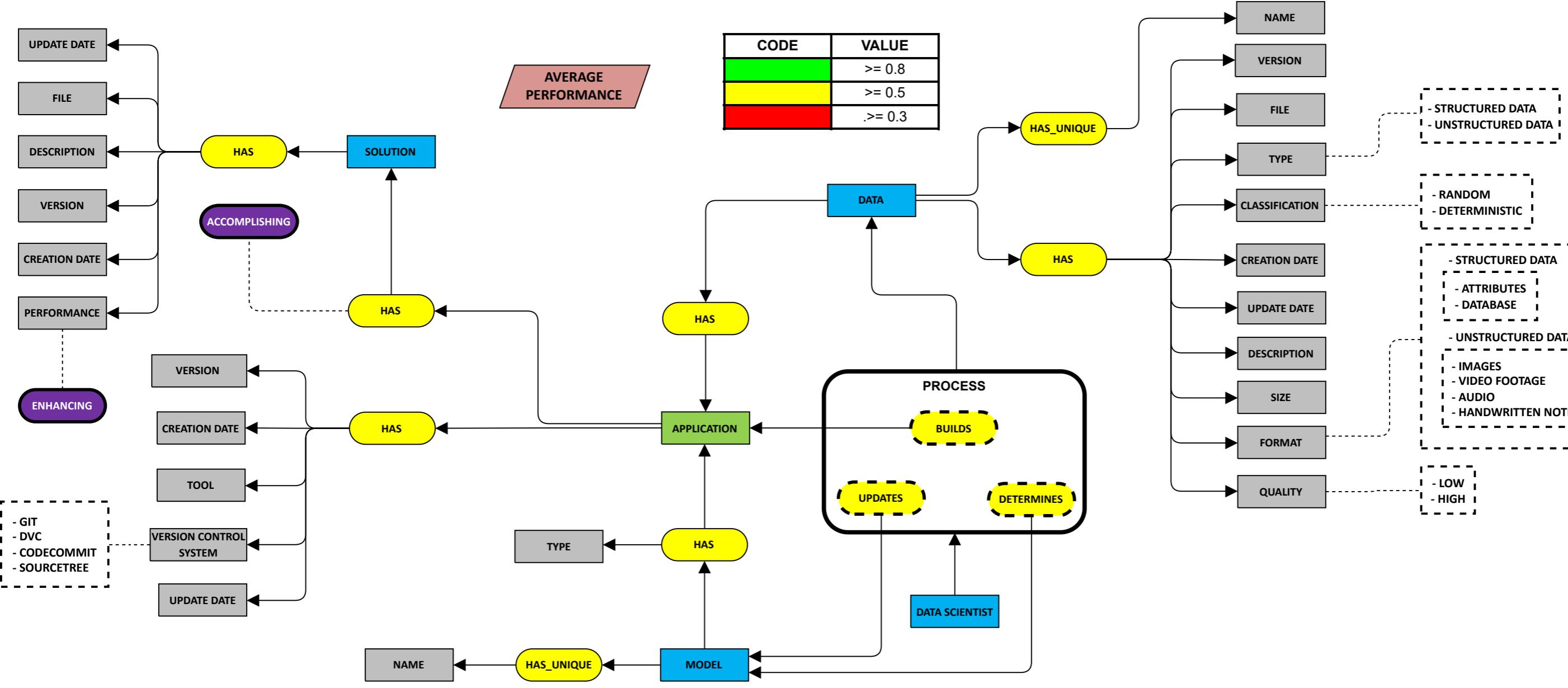
BACK

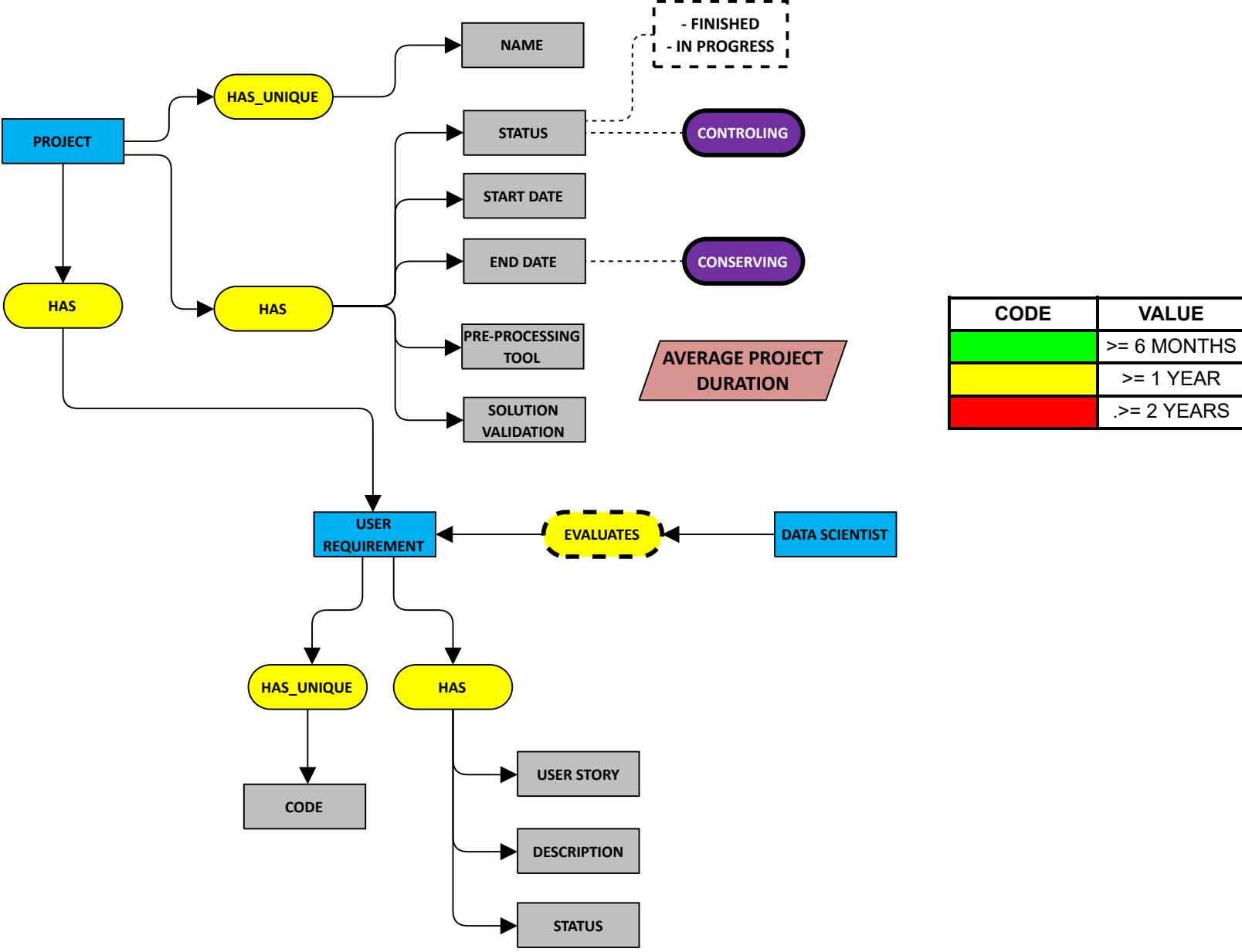


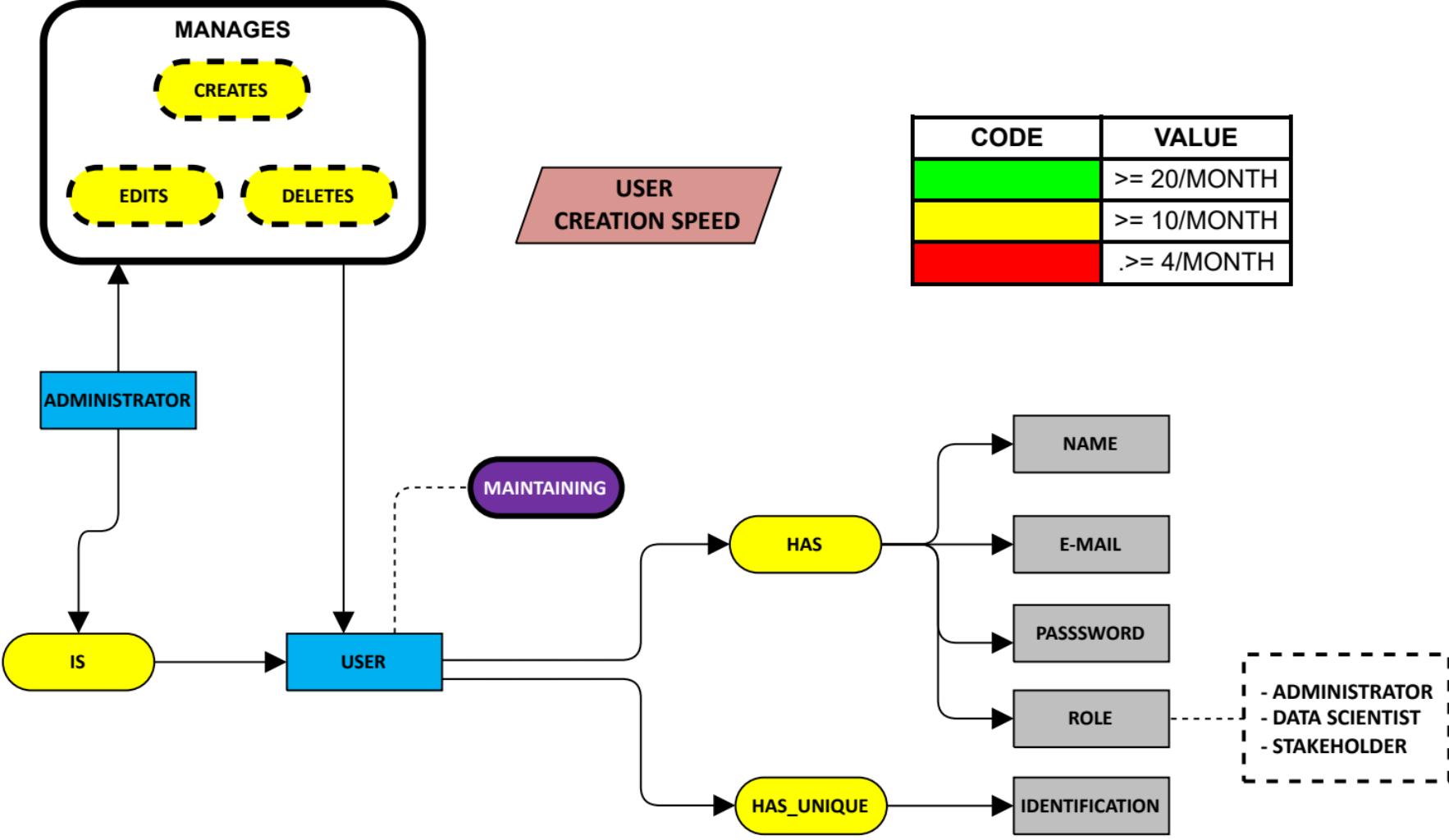












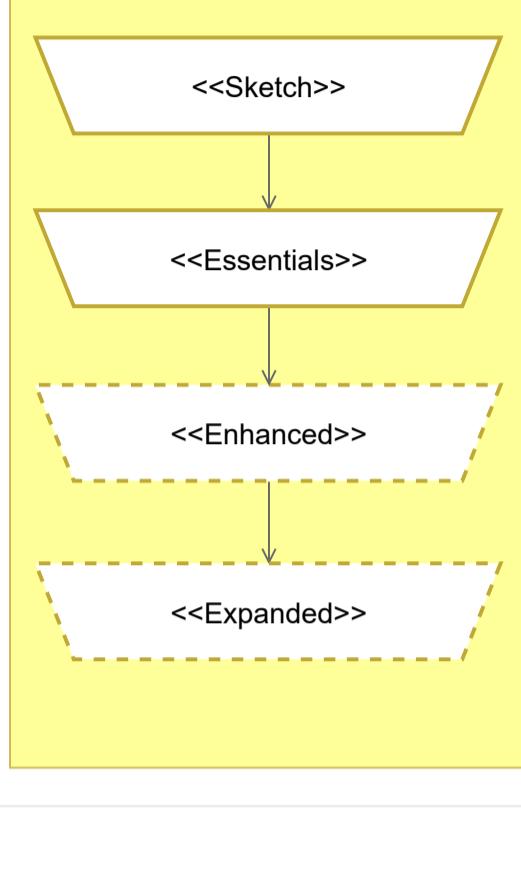
WORK PRODUCT CARDS

[BACK](#)



Goal Diagram

Visual modeling of requirements



<< The goal diagram shows the hierarchy of goals, starting from a global goal and its subrogation in the other goals and requirements, in order to concretely put them into practice. This diagram seeks to represent the organization's goals together with other elements related to the future software. >>

Essential content:

- << Goals in thin-line parallelograms >>
- << Requirements on thick line parallelograms >>
- << Actors in hexagons >>
- << Hierarchy between goals and requirements with arrows connected by a circle >>

Input to:

- << Elicit goals >>
- << Elicit problems >>
- << Verify consistency >>

Describes:

- << Requirements: bounded >>

Patterns

- << Problem Analysis<Phase> >>
- << Analyst<Role> >>

Output from:

- << Understand the requirements >>

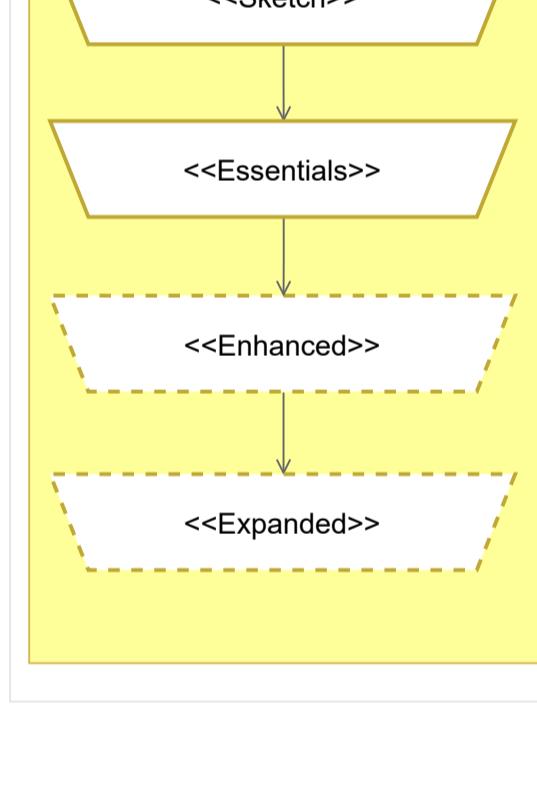
Resources

- << Book: "THE UNC-METHOD REVISITED: ELEMENTS OF THE NEW APPROACH" by Carlos Mario Zapata J, UNAL, 2012>>



Cause-And-Effect Diagram

Visual modeling of requirements



<< The cause-effect diagram is oriented to represent the different elements (causes) that contribute to generate a problem (effects). It is a powerful tool that allows us to detect problems and sub-problems of the organization, as well as the relationships between them. >>

Essential content:

- << Main problem enclosed in a box on the far right side of the diagram >>
- << Subproblems are the main thorns of the diagram, they are enclosed in a box. >>
- << Causes, which are not enclosed in boxes >>
- << Sub-causes, which are related to causes >>

Input to:

- << Elicit problems >>
- << Verify consistency >>

Describes:

- << Requirements: bounded >>

Patterns

- << Problem Analysis<Phase> >>
- << Analyst<Role> >>

Output from:

- << Understand the requirements >>

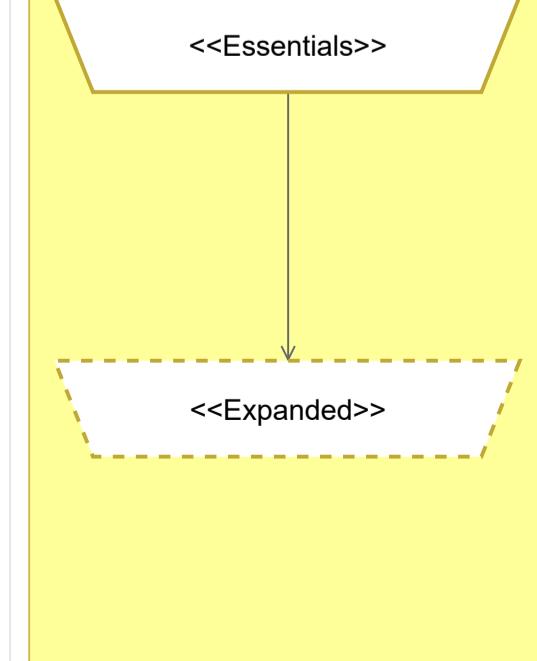
Resources

- << Book: "THE UNC-METHOD REVISITED: ELEMENTS OF THE NEW APPROACH" by Carlos Mario Zapata J, UNAL, 2012>>



Process Diagram

Visual modeling of requirements



The process diagram is oriented to show the flow of processes and data in the system, identifying trigger and result events, as well as the actors involved in each of them.

Essential content:

- << Processes with rectangles >>
- << Actors with horizontal containers >>
- << Events with green arrows >>
- << Arrows with continuous line for process flow >>
- << Arrows with dashed line for data flow >>
- << Bullet figure to represent storages >>
- << Sheet figure to represent input sample >>

Input to:

- << Define process and sequence >>
- << Verify consistency >>

Describes:

- << Requirements: bounded >>

Patterns

- << Problem Analysis<Phase> >>
- << Analyst<Role> >>

Output from:

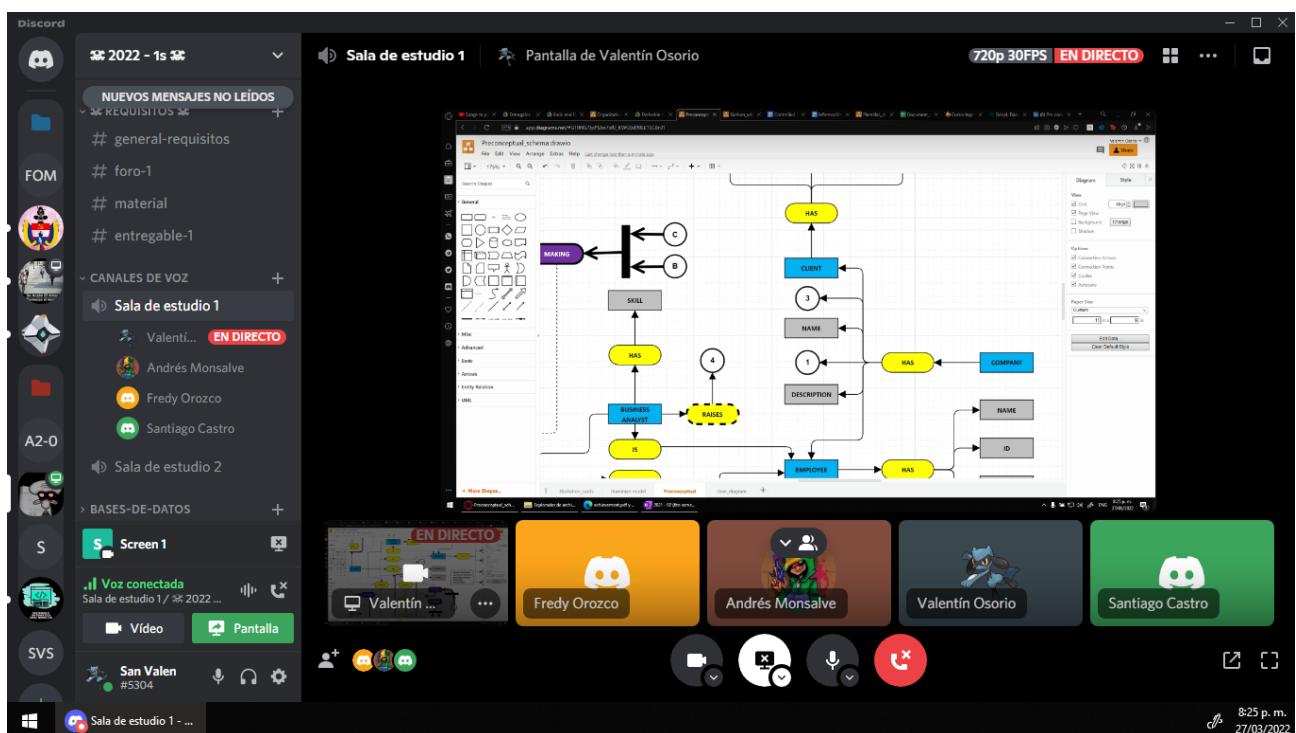
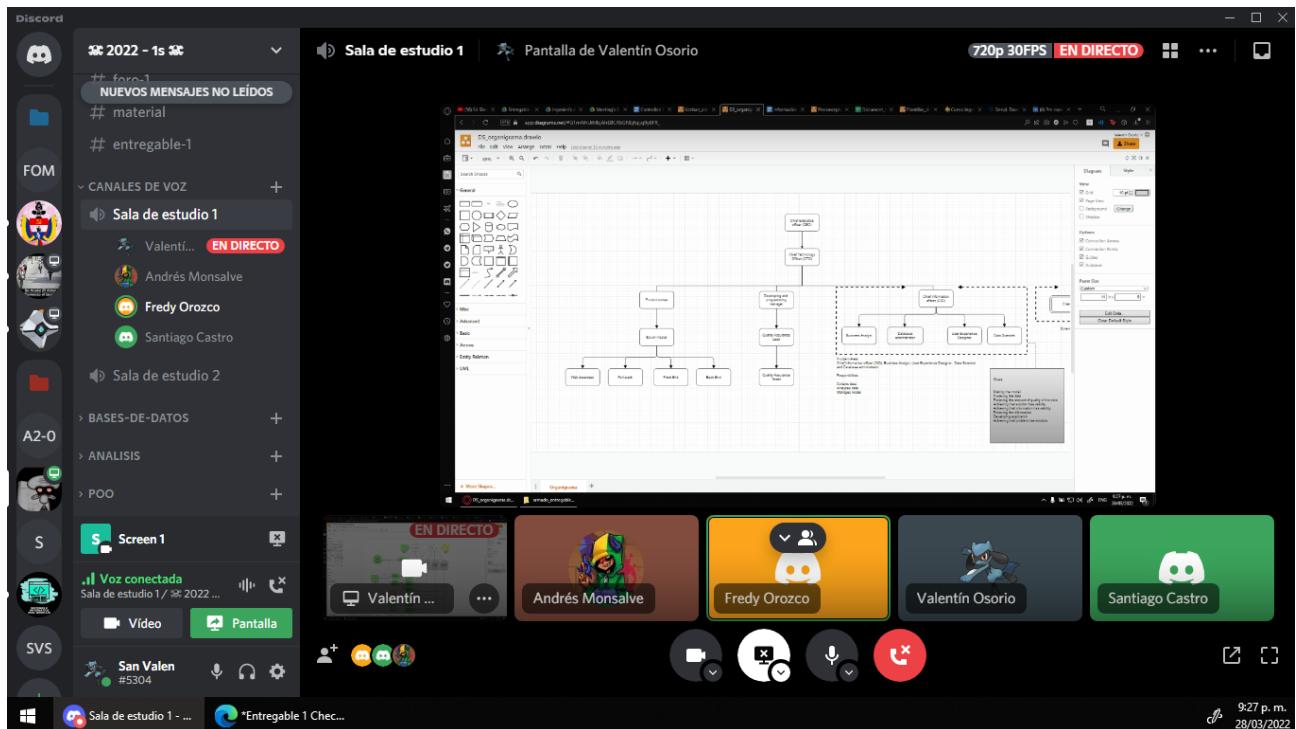
- << Understand the requirements >>

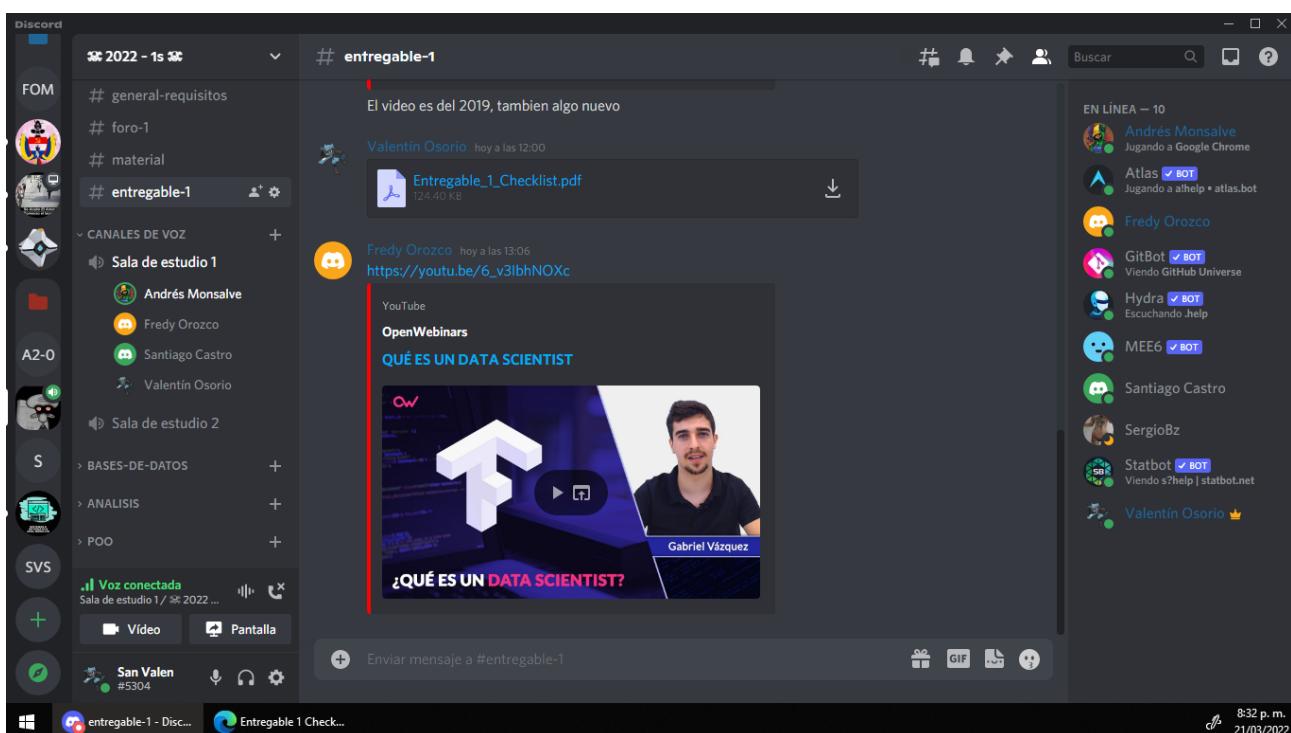
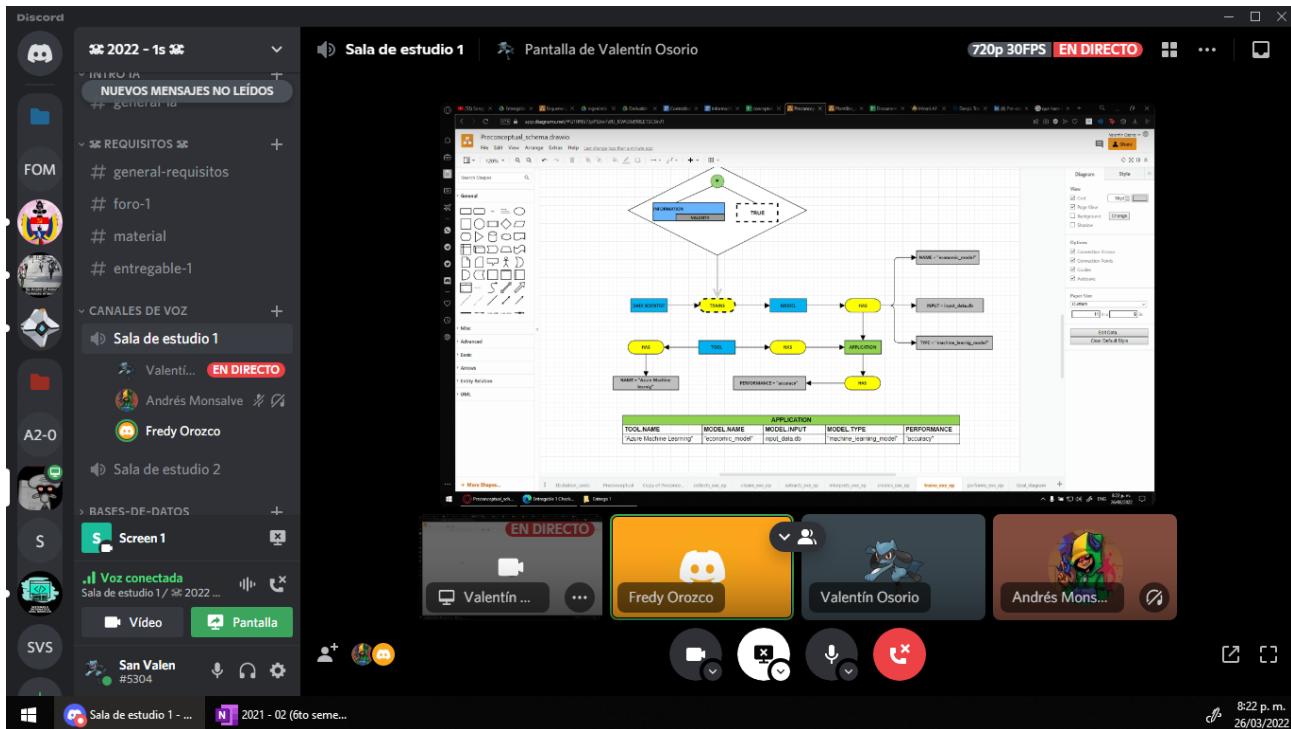
Resources

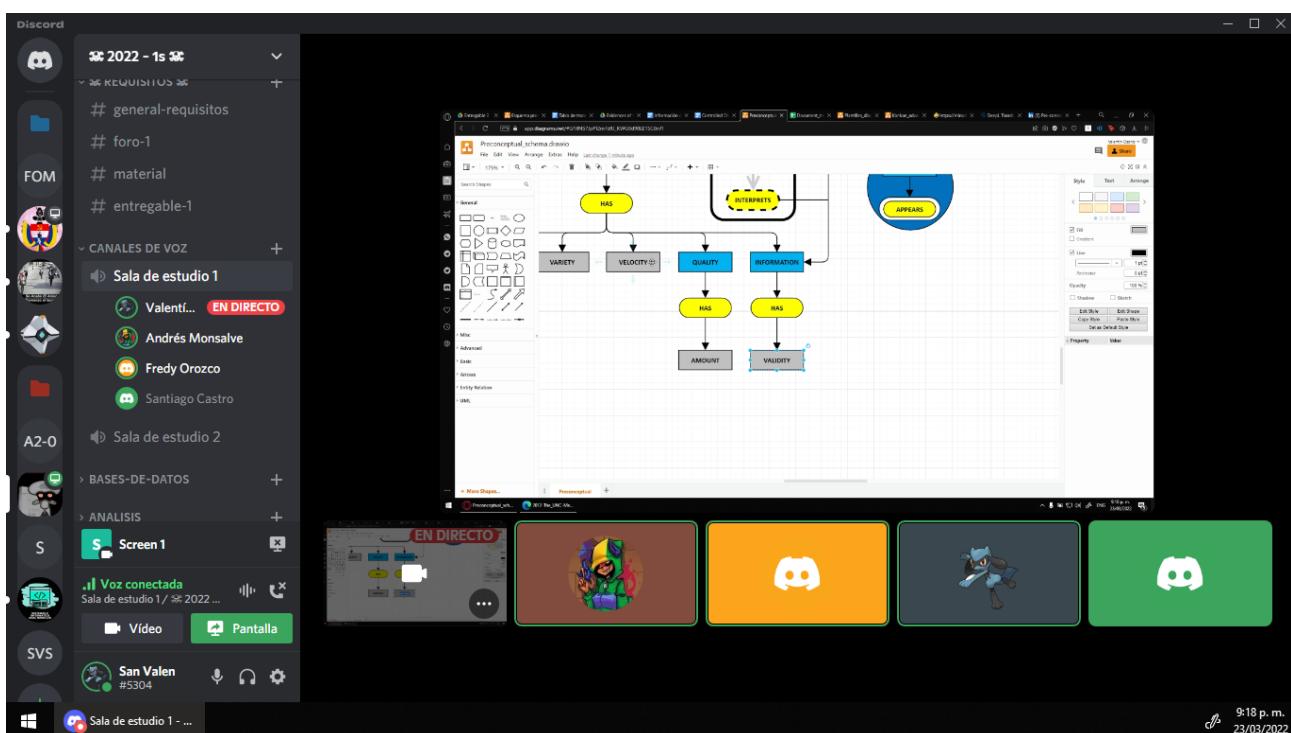
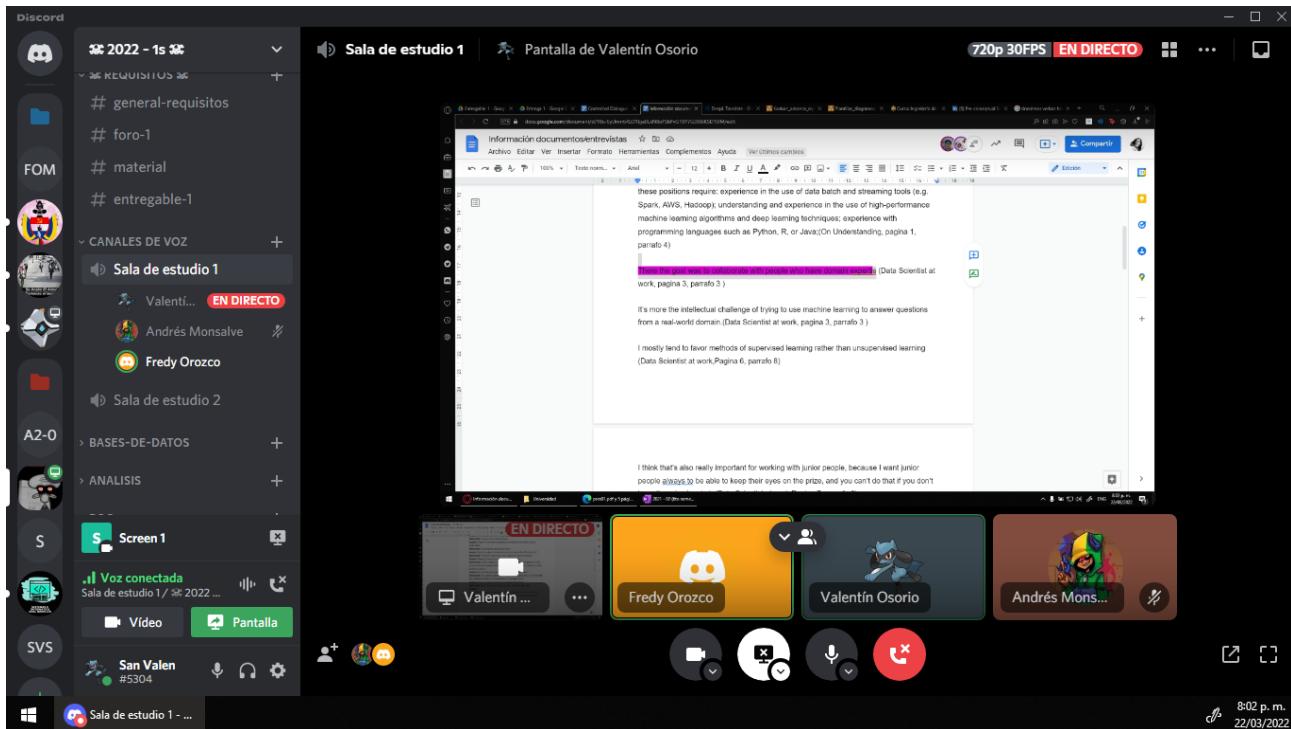
- << Book: "THE UNC-METHOD REVISITED: ELEMENTS OF THE NEW APPROACH" by Carlos Mario Zapata J, UNAL, 2012>>

EVIDENCE OF THE MEETINGS

BACK







Discord

2022 - 1s

general-requisitos

Fredy Orozco 02/04/2022 JFrameForn

Valentin Osorio 02/04/2022 <https://www.mtholyoke.edu/courses/quenell/s2003/ma139/js/count.html>

11 de abril de 2022

Valentin Osorio 11/04/2022 <https://bibliotecas.unal.edu.co/>

28 de abril de 2022

Andrés Monsalve 28/04/2022

Pasos y roles en el flujo de trabajo de data science (Design Patterns in Machine Learning).

EN LÍNEA – 10

- Andrés Monsalve Jugando a Google Chrome
- Atlas ✅ BOT Viendo /setup | atlas.bot
- Fredy Orozco
- GitBot ✅ BOT Viendo GitHub Universe
- Hydra ✅ BOT Escuchando help
- MEE6 ✅ BOT
- Santiago Castro
- SergioBz
- Statbot ✅ BOT
- Valentin Osorio

Voz conectada Sala de estudio 1 / 2022 ...

Video Pantalla

Enviar mensaje a #general-requisitos

9:27 p.m. 1/05/2022

Discord

2022 - 1s

entregarable-1

foro-2

entregarable-2

CANALES DE VOZ

Sala de estudio 1

Valenti... EN DIRECTO

Andrés Monsalve

Santiago Castro

Sala de estudio 2

BASES-DE-DATOS

ANALISIS

POO

Voz conectada Sala de estudio 1 / 2022 ...

Video Pantalla

Screen1

pres01.pdf y 6 pági... Sala de estudio 1 - ...

9:01 p.m. 2/05/2022

CAUSE-AND-EFFECT DIAGRAM

BP2: Summary does not have validity

C4 Application does not have version control system

C5 Data scientist does not have experience

C3 Stakeholder provides data wrongly

C1 Data scientist evaluates user requirements hardly

Solution has low performance

entregable-2

Aquí empieza el canal #entregable-2.

[Editar canal](#)

24 de abril de 2022

Fredy Orozco 24/04/2022

para sacar el porcentaje de los diagramas. Lo primero es calcular los porcentajes de diagramas de Objetivos, Una vez calculados. Procedemos a coger los procesos y las causas raíces. Le asociamos el porcentaje de los objetivos, Y en cada casilla ponemos la suma y luego sumamos la columna y por ultimo sacamos el porcentaje (Sumamos todo y dividimos las columnas por el) Este porcentaje va hacer el que pertenece a cada rama (editado)

PERCENTAGE ASSIGNMENT TO PROBLEMS

	C1	C3	C5	C6	C9	C10
P1		G4, R4	G1, G4, R4			
P2			G4, R4	G4, R4		
P3		G4, G6, R4		G4, G6, R4		
P4	G3, G4, R1					
P5				G2, G5, R2		
P6					G4, R7	
P7					G3, G5, R7	
P9					G2, G5, R7	G4, R7
P10		G4, R7, R9				
P12					G4, R6	
P13	G4, R10, R7, R6					
P14	G4, R8, R7, R6					

Enviar mensaje a #entregable-2

9:13 p.m.
3/05/2022

entregable-1

NUEVOS MENSAJES NO LEÍDOS

entregable-2

Sala de estudio 1

Valenti... EN DIRECTO

Andrés Monsalve

Fredy Orozco

MEE6

Santiago Castro

Sala de estudio 2

BASES-DE-DATOS

ANALISIS

Screen1

Voz conectada

Envío de audio

Video Pantalla

San Valen #5304

Enviar mensaje a #entregable-2

Checklist Deliverable 2

Checklist Deliverable 2

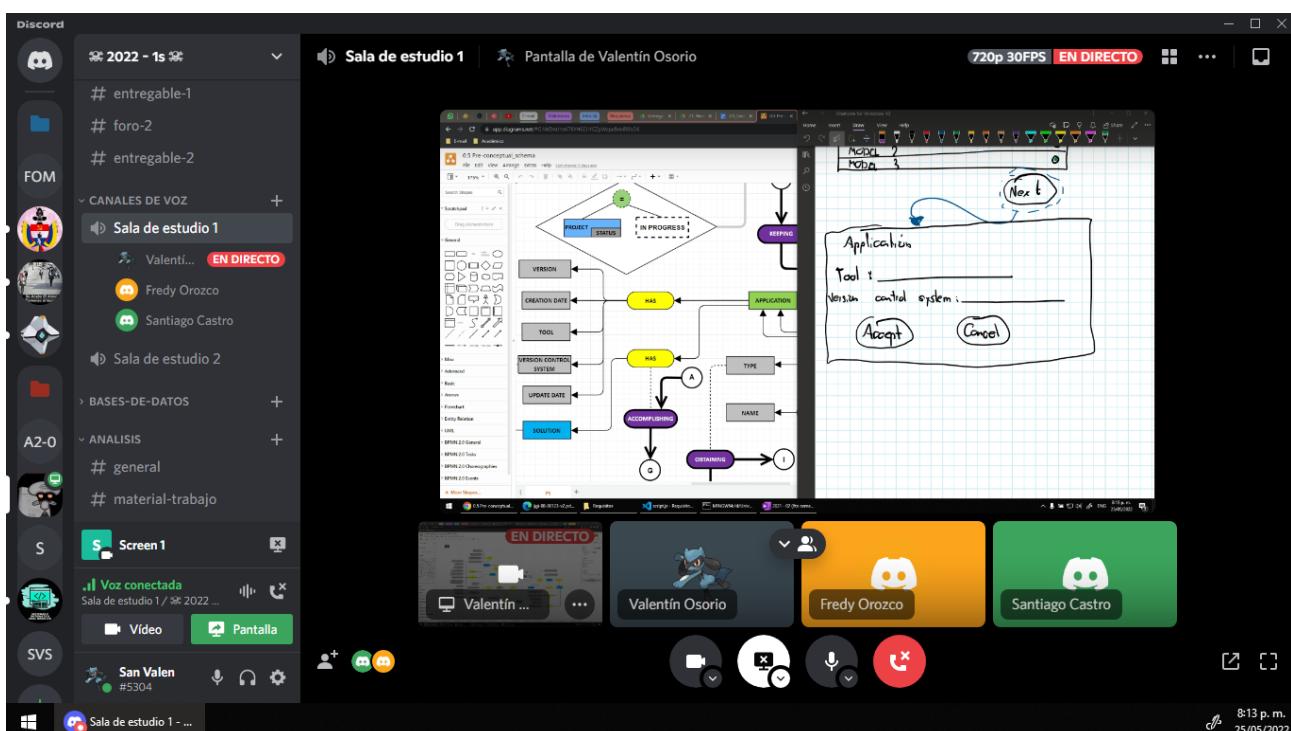
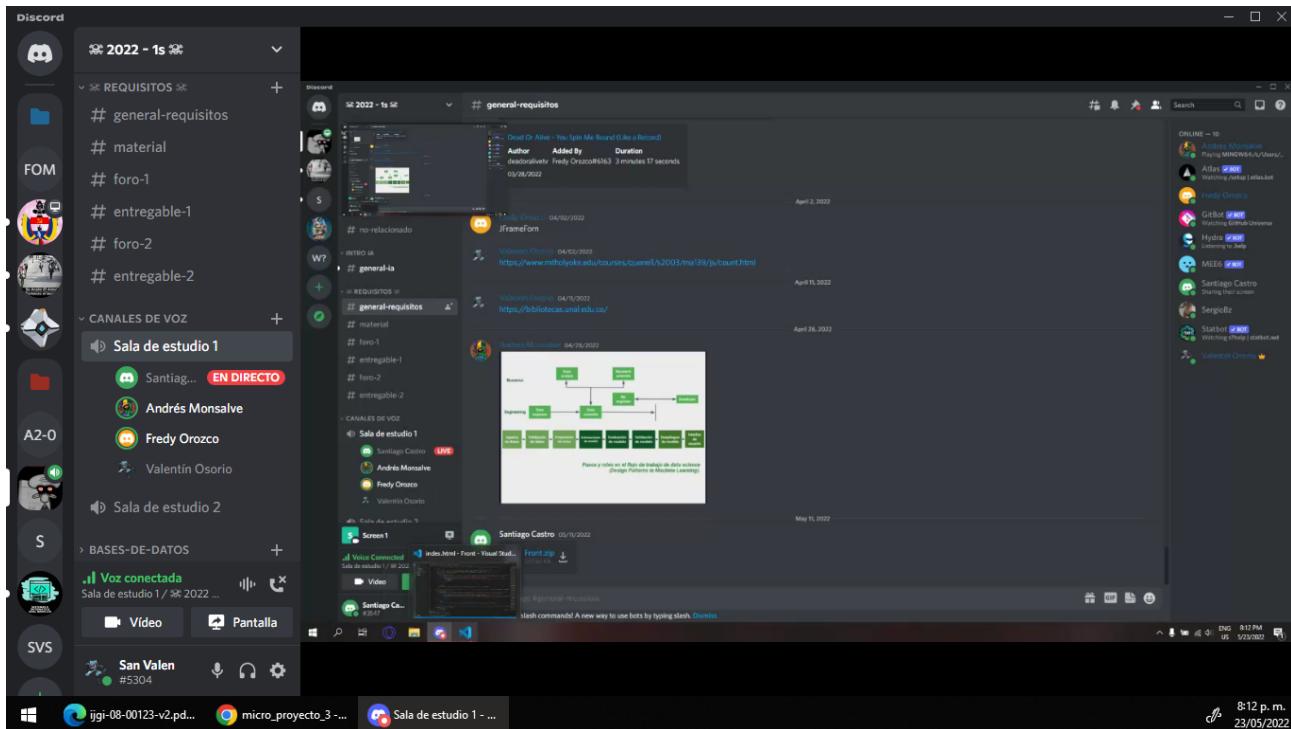
Deliverable

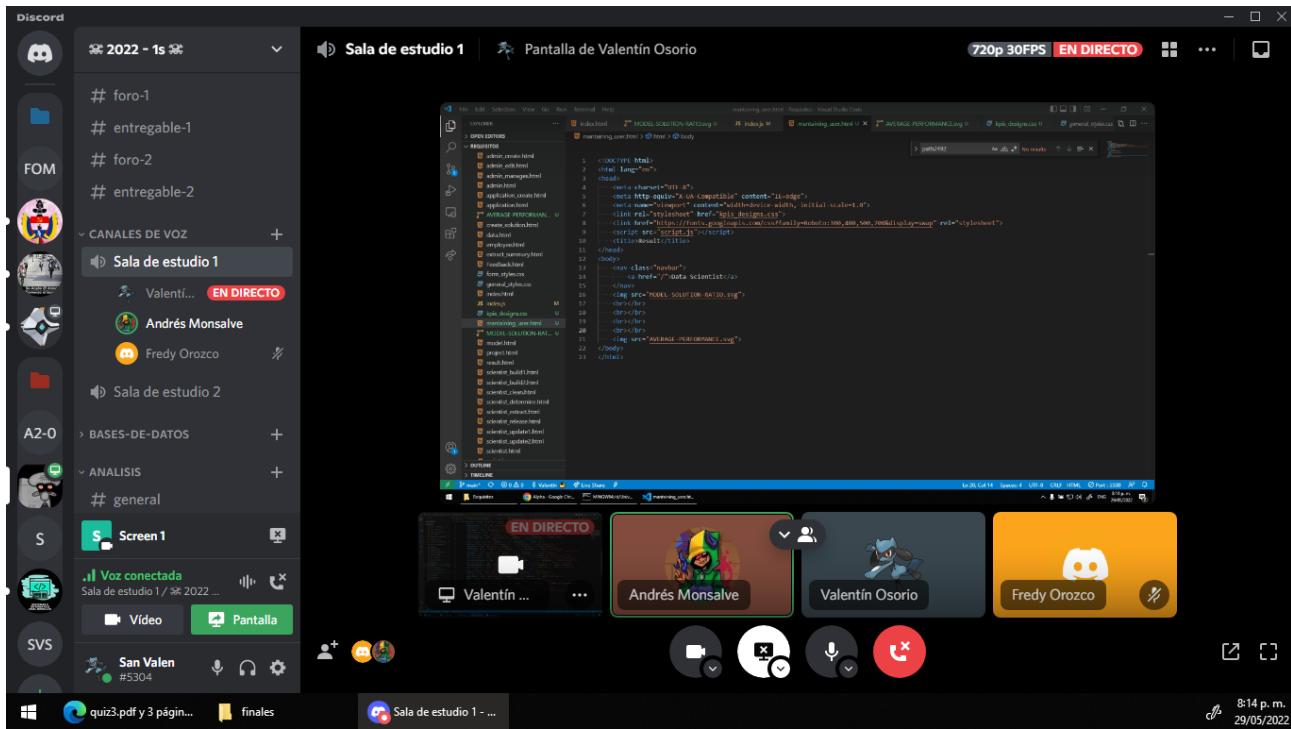
- 1. Deliverable 1 corrections
 - 1.1. Evolution-cause (Domain model)
 - 1.2. (Organizational chart)
 - 1.3. (Executable PES)
 - 1.4. (Process flowchart)
- 2. Data alignment corrections
 - 2.1. SMART
 - 2.2. Stakeholder survey
 - 2.3. Team chart
 - 2.4. Process diagram (Santiago, Valente)
 - 2.5. Process diagram explanation table (Valente)
 - 2.6. Event interaction graph (Santiago, Valente)
 - 2.7. Cause-and-effect diagram
 - 2.8. Business rules (Fredy)
 - 2.9. Pre-conceptual schema with achievement rules and traceability table (Andrés)
 - 2.10. Goal Diagram
 - 2.11. Pre-conceptual pre-conceptual scheme and traceability table (Andrés)
 - 2.12. Cause-and-effect diagram
 - 2.13. Percentage assignment to goals (Andrés)
 - 2.14. Percentage assignment to problems (Andrés)
 - 2.15. Kanban board

Consistency

- All the processes have, at least, one goal (remember: requirements are different to goals). 6, 7, 8, 12, 13, 14.
- The suggestions for improving the former deliverable are developed. 1, 2, 6.
- The goals, requirements, and expectations from the goal diagram are consistently written according to the pre-conceptual schema added with achievement relationships. 11, 12.
- All the nouns and noun phrases in the cause-and-effect diagram are included as concepts in the pre-conceptual schema. 11, 13, 14.
- The pre-conceptual schema is completely mapped to the process diagram. 6, 7, 8, 11.
- All the conditions from the pre-conceptual schema are included in the business rules. 10, 11.
- All the concepts before "has" relationships are mapped as storages. 6, 7, 9, 11.
- All the dynamic relationships are mapped to events of the process diagram. 6, 7, 8, 11.
- All the dynamic relationships are mapped to processes of the process diagram. 6, 7, 11.
- The suggestions for improving the former deliverable are developed. 1, 2, 7, 8.

10:01 p.m.
4/05/2022





KANBAN BOARD

BACK

GOAL	TO DO	DOING	DONE
		<p>Task 1 : Gathering information and interviews on data scientists Responsible : Diego Valentin Ossorio Marin, Fredy Alberto Orozco Loaiza</p> <p>Task 2 : Making the controlled dialog Responsible : Diego Valentin Ossorio Marin</p> <p>Task 3 : Collecting and organizing the digital files Responsible : Team</p> <p>Task 4 : Filling the elicitation cards Responsible : Freddy Alberto Orozco Loaiza</p> <p>Task 5 : Making and updating the organizational chart Responsible : Team</p> <p>Task 6 : Verify Consistency Responsible : Team</p>	<p>Opportunity Identified</p> <ul style="list-style-type: none">An opportunity was identified that a software-based solution could address.A stakeholder wants to make an investment in a better solution.Identified other stakeholders who want to share in the opportunity. <p>1/6</p> <p>Stakeholders Recognized</p> <ul style="list-style-type: none">Stakeholders identified.There is an agreement between them and other groups to be represented.Responsibilities of stakeholder representatives defined. <p>1/6</p> <p>Stakeholders Represented</p> <ul style="list-style-type: none">The representatives of the interested parties were summoned.The representatives of the interested parties accept the responsibilities and authorized them.The corporate approach was agreed upon.Representatives respect the way of working. <p>2/6</p>
		<p>Task 7 : Making the domain model Responsible : Freddy Alberto Orozco Loaiza</p> <p>Task 8 : Making, organizing and updating the pre-conceptual schema Responsible : Team</p> <p>Task 9 : Making, organizing and updating the executable pre-conceptual schemas Responsible : Diego Valentin Ossorio Marin</p> <p>Task 10 : Making, organizing and updating the document of traceability table Responsible : Team</p> <p>Task 11 : Making Goal Diagram Responsible : Diego Valentin Ossorio Marin</p> <p>Task 12 : Making Cause-and-Effect Diagram Responsible : Jaime Andrés Monsalve Ballesteros, Diego Valentin Ossorio Marin</p> <p>Task 13 : Verify Consistency Responsible : Santiago Castro Tabares</p> <p>Task 14 : Making, organizing and updating the problems pre-conceptual schema Responsible : Diego Valentin Ossorio Marin</p>	<p>Requirements Conceived</p> <ul style="list-style-type: none">The need for a new system is clear.Users were identified.Initial promoters were identified. <p>1/6</p> <p>Software System Architecture Selected</p> <ul style="list-style-type: none">Architecture selection criteriaWhy platform selectedArchitectures selectedSystem boundary knownDecision rationaleOrganizations madeBuy, build, reuse decisions madeKey technical risks agreed to <p>1/6</p>
		<p>Task 15 : Taking control of the kanban board Responsible : Diego Valentin Ossorio Marin, Jaime Andrés Monsalve Ballesteros</p> <p>Task 16 : Taking the alpha advance report updated Responsible : Santiago Castro Tabares</p> <p>Task 17 : Taking some pictures to show evidence of the meetings Responsible : Diego Valentin Ossorio Marin</p> <p>Task 18 : Attend classes with the teacher Responsible : Team</p> <p>Task 19 : Study class material Responsible : Team</p> <p>Task 20 : Conduct meetings Responsible : Team</p> <p>Task 21 : Elaboration of KANBAN Board Responsible : Diego Valentin Ossorio Marin</p>	<p>Work Initiated</p> <ul style="list-style-type: none">The initiator of the work is known.Work restrictions were clarified.Ownership and funding model clarified.Priority of work is clarified. <p>1/6</p> <p>Work Prepared</p> <ul style="list-style-type: none">The initiator of the work is known.Work restrictions were clarified.Ownership and funding model clarified.Priority of work is clarified. <p>2/6</p>
		<p>Task 22 : Interview with the stakeholder Responsible : Team</p> <p>Task 23 : Request stakeholder survey Responsible : Team</p> <p>Task 24 : Filling stakeholder survey Responsible : Diego Valentin Ossorio Marin</p> <p>Task 25 : Collection of Extra Digital files Responsible : Team</p>	<p>Team Seeded</p> <ul style="list-style-type: none">The team's mission is clear.The team knows how to grow to achieve its mission.The team's dependencies were identified.The size of the team has been determined. <p>1/5</p> <p>Team Formed</p> <ul style="list-style-type: none">Enough members recruited.Roles understood.How to work understood.Mission known.Individual responsibilities accepted and aligned to components.Members accepting roles.Dependencies identified.Communication mechanisms defined.Members commit to team. <p>2/5</p> <p>Way of Working Principles Established</p> <ul style="list-style-type: none">The principles and restrictions were established.Principles and restrictions were communicated.Practices and tools were agreed upon.The context in which the team must operate was understood. <p>1/6</p> <p>Way of Working Foundation Established</p> <ul style="list-style-type: none">Key practices & tools selected.Practices needed to start work agreed.Negotiable practices & tools identified.Dependencies understood.Integrated way of working available. <p>2/6</p>
		<p>Task 26 : Corrections to the Software Context Delivery Responsible : Freddy Alberto Orozco Loaiza, Diego Valentin Ossorio Marin</p> <p>Task 27 : Define process and sequence Responsible : Santiago Castro Tabares, Diego Valentin Ossorio Marin</p> <p>Task 28 : Elaboration of Process Diagram Responsible : Santiago Castro Tabares</p> <p>Task 29 : Elaboration of Event Interaction Graph Responsible : Santiago Castro Tabares</p> <p>Task 30 : Elaboration of Process Diagram Explanatory Table Responsible : Santiago Castro Tabares</p> <p>Task 31 : Define constraints to the process Responsible : Team</p> <p>Task 32 : Elaboration of Data Dictionary Responsible : Freddy Alberto Orozco Loaiza</p> <p>Task 33 : Elaboration of Business rules Responsible : Freddy Alberto Orozco Loaiza</p> <p>Task 34 : Elaboration of Goal Diagram Responsible : Diego Valentin Ossorio Marin</p> <p>Task 35 : Elaboration of Cause-and-effect Diagram Responsible : Diego Valentin Ossorio Marin</p> <p>Task 36 : Elicit goals Responsible : Team</p> <p>Task 37 : Elicit problems Responsible : Team</p> <p>Task 38 : Elaboration of Pre-conceptual Schema Responsible : Diego Valentin Ossorio Marin, Santiago Castro Tabares, Fredy Alberto Orozco Loaiza</p> <p>Task 39 : Elaboration of Pre-conceptual Schema Traceability Table Responsible : Jaime Andrés Monsalve Ballesteros</p> <p>Task 40 : Elaboration of Problem-based Pre-conceptual Schema Responsible : Diego Valentin Ossorio Marin</p> <p>Task 41 : Elaboration of Problem-based Pre-conceptual Schema Traceability Table Responsible : Jaime Andrés Monsalve Ballesteros</p> <p>Task 42 : Elaboration of Percentage assignment to goals Responsible : Jaime Andrés Monsalve Ballesteros</p> <p>Task 43 : Elaboration of Percentage assignment to problems Responsible : Jaime Andrés Monsalve Ballesteros</p> <p>Task 44 : Verify Consistency Responsible : Jaime Andrés Monsalve Ballesteros</p>	<p>Requirements Bounded</p> <ul style="list-style-type: none">Development stakeholders identified.System purpose agreed.System boundaries.Shared solution understanding exists.Requirements formal agreed.Requirements management in place.Prioritization scheme clear.Concerns identified & considered.Assumptions clear. <p>2/6</p> <p>Software System Demonstrable</p> <ul style="list-style-type: none">Key architectural characteristics demonstrated.Performance exercised & performance measured.Critical configurations demonstrated.Critical interfaces demonstrated.Integration with environment demonstrated.Architecture accepted as fit-for-purpose. <p>2/6</p>
		<p>Task 45 : Assess the way of working Responsible : Diego Valentin Ossorio Marin</p> <p>Task 46 : Assess the team Responsible : Diego Valentin Ossorio Marin</p> <p>Task 47 : Elaboration of Method assessment template Responsible : Diego Valentin Ossorio Marin</p> <p>Task 48 : Assign tasks Responsible : Diego Valentin Ossorio Marin</p> <p>Task 49 : Report progress of the work Responsible : Team</p> <p>Task 50 : Elaboration of Team Charter Responsible : Diego Valentin Ossorio Marin</p> <p>Task 51 : Continuous elaboration of Kanban Board Responsible : Diego Valentin Ossorio Marin</p> <p>Task 52 : Continuous elaboration of Alphas Advance Report Responsible : Diego Valentin Ossorio Marin</p> <p>Task 53 : Gathering evidence of the meetings Responsible : Diego Valentin Ossorio Marin</p> <p>Task 54 : Attend class in order to get feedback from the professor. Responsible : Team</p>	<p>Work Started</p> <ul style="list-style-type: none">Development started.Plans monitored.Definition done in place.Tasks being progressed. <p>3/6</p> <p>Team Collaborating</p> <ul style="list-style-type: none">Works as one unit.Communication open and honest.Focused on mission.Members know each other. <p>3/5</p> <p>Way of Working In Use</p> <ul style="list-style-type: none">Practices & tools in use.Regularly inspected.Adjusted to context.Support given.Feedback mechanisms in place.Practices & tools support collaboration. <p>3/6</p> <p>Stakeholders Involved</p> <ul style="list-style-type: none">Representatives assist the team.Timely feedback and decisions provided.Changes promptly communicated. <p>3/6</p>
		<p>Task 55 : Elaboration of User Story Agreement Responsible : Diego Valentin Ossorio Marin</p> <p>Task 56 : Signing of agreement Responsible : Team</p> <p>Task 57 : Elaboration of Solution Effort Responsible : Team</p> <p>Task 58 : Estimation of Solution value Responsible : Freddy Alberto Orozco Loaiza</p> <p>Task 59 : Elaboration of critical success factors matrices Responsible : Diego Valentin Ossorio Marin</p> <p>Task 60 : Elaboration of Interpretative structural model Responsible : Diego Valentin Ossorio Marin</p> <p>Task 61 : Elaboration of KPI definition table Responsible : Team</p> <p>Task 62 : Elaboration of KPI design Responsible : Diego Valentin Ossorio Marin, Fredy Alberto Orozco Loaiza</p> <p>Task 63 : Verify consistency Responsible : Jaime Andrés Monsalve Ballesteros</p>	<p>Opportunity In Agreement</p> <ul style="list-style-type: none">Minimal expectations agreed.Rep's happy with their involvement.Rep's input valued.Team's input valued.Promises clear & perspectives balanced. <p>4/6</p> <p>Solution Needed</p> <ul style="list-style-type: none">Stakeholder identified.Problem needs established.Root cause identified.Need for a solution confirmed.At least one solution proposed. <p>2/6</p> <p>Opportunity Value Established</p> <ul style="list-style-type: none">Opportunity value quantified.Value delivered.System value understood.Outcomes clearly defined.Outcomes clearly quantified. <p>3/6</p> <p>Requirements Coherent</p> <ul style="list-style-type: none">Requirements shared.Requirements origin clear.Requirements measured.Conflicts addressed.Estimated cost measured.Requirements management in place.Priorities identified.Priorities understood.Assumptions clear. <p>3/6</p> <p>Software System Demonstrable</p> <ul style="list-style-type: none">Key architectural characteristics demonstrated.Performance exercised & performance measured.Critical configurations demonstrated.Critical interfaces demonstrated.Integration with environment demonstrated.Architecture accepted as fit-for-purpose. <p>2/6</p>
		<p>Task 64 : Verify Consistency Responsible : Jaime Andrés Monsalve Ballesteros</p> <p>Task 65 : Elaboration of Use Cases Responsible : Santiago Castro Tabares, Freddy Alberto Orozco Loaiza, Jaime Andrés Monsalve Ballesteros</p> <p>Task 66 : Elaboration of User Interface flowchart Responsible : Jaime Andrés Monsalve Ballesteros</p> <p>Task 67 : Elaboration of New Organizational Chart Responsible : Team</p> <p>Task 68 : Elaboration of New Process Diagram Responsible : Diego Valentin Ossorio Marin</p> <p>Task 69 : Elaboration of Use Cases Explanatory Tables Responsible : Diego Valentin Ossorio Marin, Santiago Castro Tabares</p> <p>Task 70 : Elaboration of New Process Diagram Explanatory Table Responsible : Team</p> <p>Task 71 : Elaboration of New Data Dictionary Responsible : Freddy Alberto Orozco Loaiza</p> <p>Task 72 : Elaboration of Apha Prototype Responsible : Santiago Castro Tabares, Fredy Alberto Orozco Loaiza, Jaime Andrés Monsalve Ballesteros</p>	<p>Work Under Control</p> <ul style="list-style-type: none">Tasks being completed.Unplanned work under control.Work under control.Estimates revised to reflect performance.Progress measured.Rework under control.Commitments consistently met. <p>4/6</p> <p>Way of Working In Place</p> <ul style="list-style-type: none">Used by whole team.Accessible to whole team.Inspected and adapted by whole team. <p>4/6</p>
		<p>Task 73 : Elaboration of Work Product Cards Responsible : Diego Valentin Ossorio Marin</p> <p>Task 74 : Continuous Elaboration of Kanban Board. Responsible : Diego Valentin Ossorio Marin</p> <p>Task 75 : Continuous Elaboration of Alphas Advance Report Responsible : Diego Valentin Ossorio Marin</p> <p>Task 76 : Continuous Elaboration of Evidence of the Meetings Responsible : Diego Valentin Ossorio Marin</p>	<p>Work Under Control</p> <ul style="list-style-type: none">Unplanned work under control.Work under control.Estimates revised to reflect performance.Progress measured.Rework under control.Commitments consistently met. <p>4/6</p> <p>Way of Working In Place</p> <ul style="list-style-type: none">Used by whole team.Accessible to whole team.Inspected and adapted by whole team. <p>4/6</p>

