



## APPLICATION FOR THE PLANNING OF MAINTENANCE ACTIONS IN A MANUFACTURING ENVIRONMENT

### TASK I

Team 2

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# AGILE USER STORY

*The following user stories are extracted from customer's interviews for the realization of the Smart Maintenance App*

The **System Administrator** has to manage the users who will have access to the system, as well as the initial information that must be loaded on the system database

USER STORY ID	PRIORITY	AS A <type of user>	I WANT TO <perform some task>	SO THAT I CAN <achieve some goal>
1	Low	System Administrator	create, view, modify or delete system users, assign them username, password, and a specific role (planner, maintainer)	manage users who will have access to the system
2	High	System Administrator	know each maintenance activity	associate to each maintainer the procedure that he can perform
4	Medium	System Administrator	have a Standard Maintenance Procedure (SMP) file in PDF format	associate it for each Maintenance Procedure
5	Medium	System Administrator	create, view, modify or delete workspace notes	manage workspace notes and associate them to a specific entity or a set of entity
6	Low	System Administrator	record all access to the application	track any users'actions
8	High	System Administrator	know the skills of each maintainer	allow to assign specific competencies for each maintainer

# AGILE USER STORY

The **Planner** is able to manage maintenance activities that can be planned, unplanned(EWO) or extra activity

USER STORY ID	PRIORITY	AS A <type of user>	I WANT TO <perform some task>	SO THAT I CAN <achieve some goal>
3	High	Planner	select a specific activity to know the intervention information	verify the skills and resources needed for the intervention
7	High	Planner	know informations about activities organized by week	manage (create, view, modify or delete) maintenance activities.
9	High	Planner	see competencies required and the list of Maintainers	assign the scheduled activity to a specific Maintainer, according to his availability.
10	Medium	Planner	see maintainer name, maintainer availability percentage, maintainer competencies compliance, availability (in minutes for each hour of his workday)	select among the days of the week that the Maintainer has availability
11	High	Planner	select the slot of availability time	assign the maintenance activity and program the activity
12	Medium	Planner	send a notification to the selected Maintainer profile with a copy by e-mail to the Production manager	inform the maintainer about his new assigned activity
13	High	Planner	add intervention description, estimated intervention time, competencies required to perform the intervention, materials to be used during the maintenance activity when a EWO activity is selected	manage a EWO
14	Low	Planner	receive a notification from the selected Maintainer profile	know that his maintenance activity is finished
15	Medium	Planner	see the list of assigned tickets (EWO)	know about the tickets state
17	High	Planner	define the time and send the communication to the maintainer and production manager	assign the non-scheduled activity to a specific maintainer

The **Repository Manager** has to manage repositories of all the maintenance activities

USER STORY ID	PRIORITY	AS A <type of user>	I WANT TO <perform some task>	SO THAT I CAN <achieve some goal>
16	High	Repository Manager	manage (create, view, modify or delete) maintenance typologies as Electrical, electronic, hydraulic, mechanical	distinguish different types of activity.

# AGILE PRODUCT BACKLOG

Task ID	Task Name	Sprint #
		Sprint 1
1	User Story #7	""
2	User Story #16	""
3	User Story #3	""
4	User Story #4	""
5	User Story #5	""
		Sprint 2
6	User Story #9	""
7	User Story #8	""
8	User Story #10	""
9	User Story #2	""
10	User Story #11	""
11	User Story #12	""

*Scrum is an Agile framework that forecasts the change of the requirements and environment.*

*For this reason, we decided to plan only the first two sprints.*

*During construction we will implement the other sprints.*

# AGILE SPRINT BACKLOG

BACKLOG TASK & ID	STORY POINTS	ASSIGNED TO	STATUS	ORIGINAL ESTIMATE
<b>User Story #7</b>	<b>8</b>			
Create the DB				1
Create the table in DB for the activities				1
Create the web page (GUI)				4
Implement web page's logic				6
<b>User Story #16</b>	<b>2</b>			
Update the DB associating a specific type to each activity				2
<b>User Story #3</b>	<b>7</b>			
Create the table in DB for the information of the activities				3
Create the web page (GUI)				4
Implement web page's logic				2
<b>User Story #4</b>	<b>5</b>			
Update the database inserting the SMP file in PDF format of the selected activity				1
Implement the logic showing SMP file in PDF format of the selected activity				2
<b>User Story #5</b>	<b>2</b>			
Create the table in DB for the workspace notes				1
Add a text area to the web page				0.5
Implement text area's logic				0.5
Implement the logic showing the current workspace notes of the selected activity				1
<b>TOTAL</b>				<b>29</b>

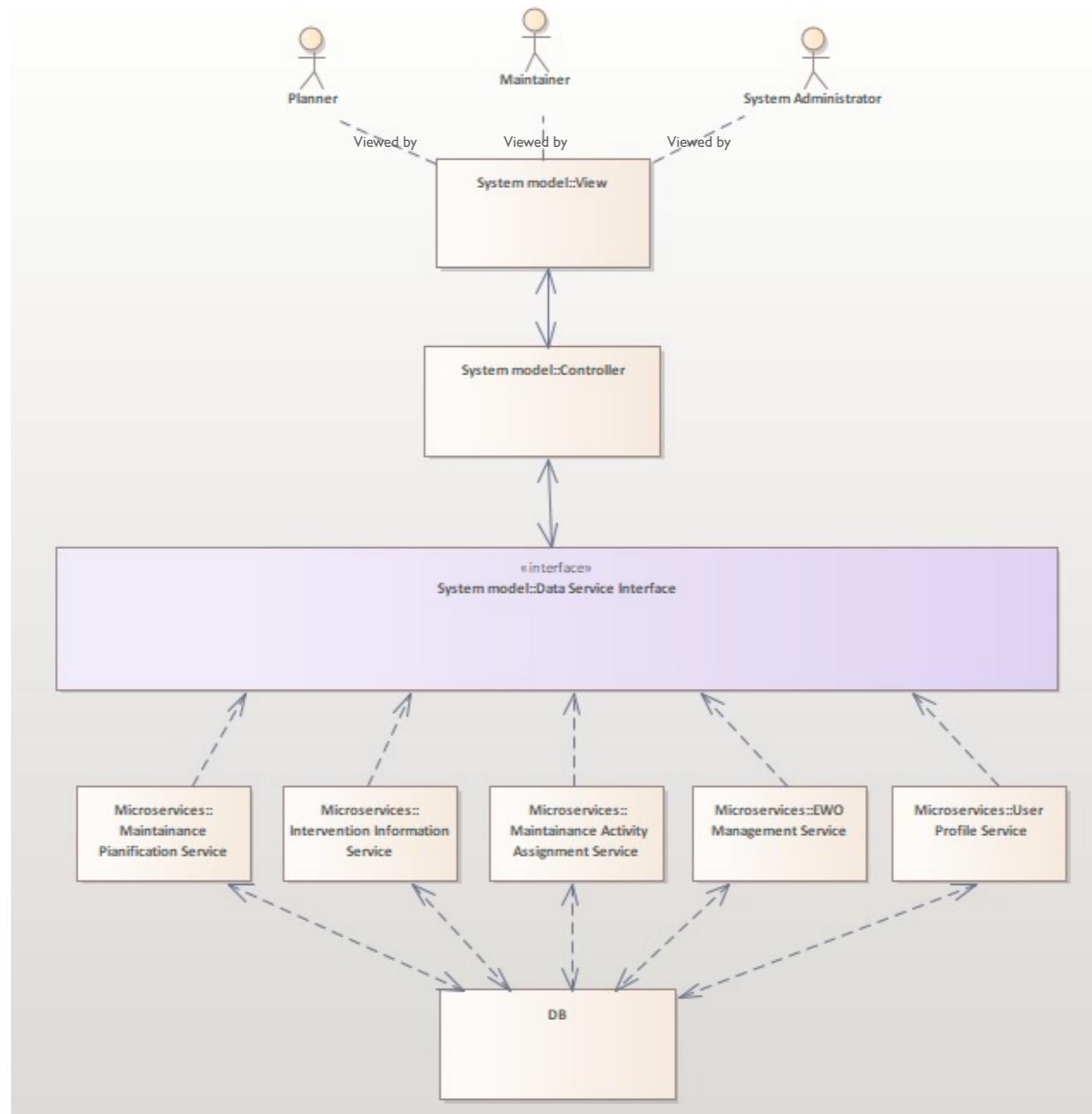
SPRINT I

# AGILE SPRINT BACKLOG

## SPRINT 2

BACKLOG TASK & ID	STORY POINTS	ASSIGNED TO	STATUS	ORIGINAL ESTIMATE
<b>User Story #9</b>	<b>8</b>			
Create the table in DB for the maintainers and their skills				1
Create the web page (GUI)				6
Implement web page's logic				8
<b>User Story #8</b>	<b>5</b>			
Implement the logic to view the skills of each maintainer				5
<b>User Story #10</b>	<b>6</b>			
Update the table in DB for the maintainers adding their availability				4
Implement the logic to select the day in which the maintainer is available				3
<b>User Story #2</b>	<b>5</b>			
Create the web page (GUI)				3
Implement web page's logic				3
<b>User Story #11</b>	<b>3</b>			
Implement the logic to select the slot of availability time				3
<b>User Story #12</b>	<b>8</b>			
Implement the logic to send a notification to the selected Maintainer profile with a copy by e-mail to the Production manager				7
<b>TOTAL</b>				<b>43</b>

# SOFTWARE ARCHITECTURE WITH EA





## APPLICATION FOR THE PLANNING OF MAINTENANCE ACTIONS IN A MANUFACTURING ENVIRONMENT

**SPRINT I**

**Team 2**

*Lamberti Martina 0622701476*

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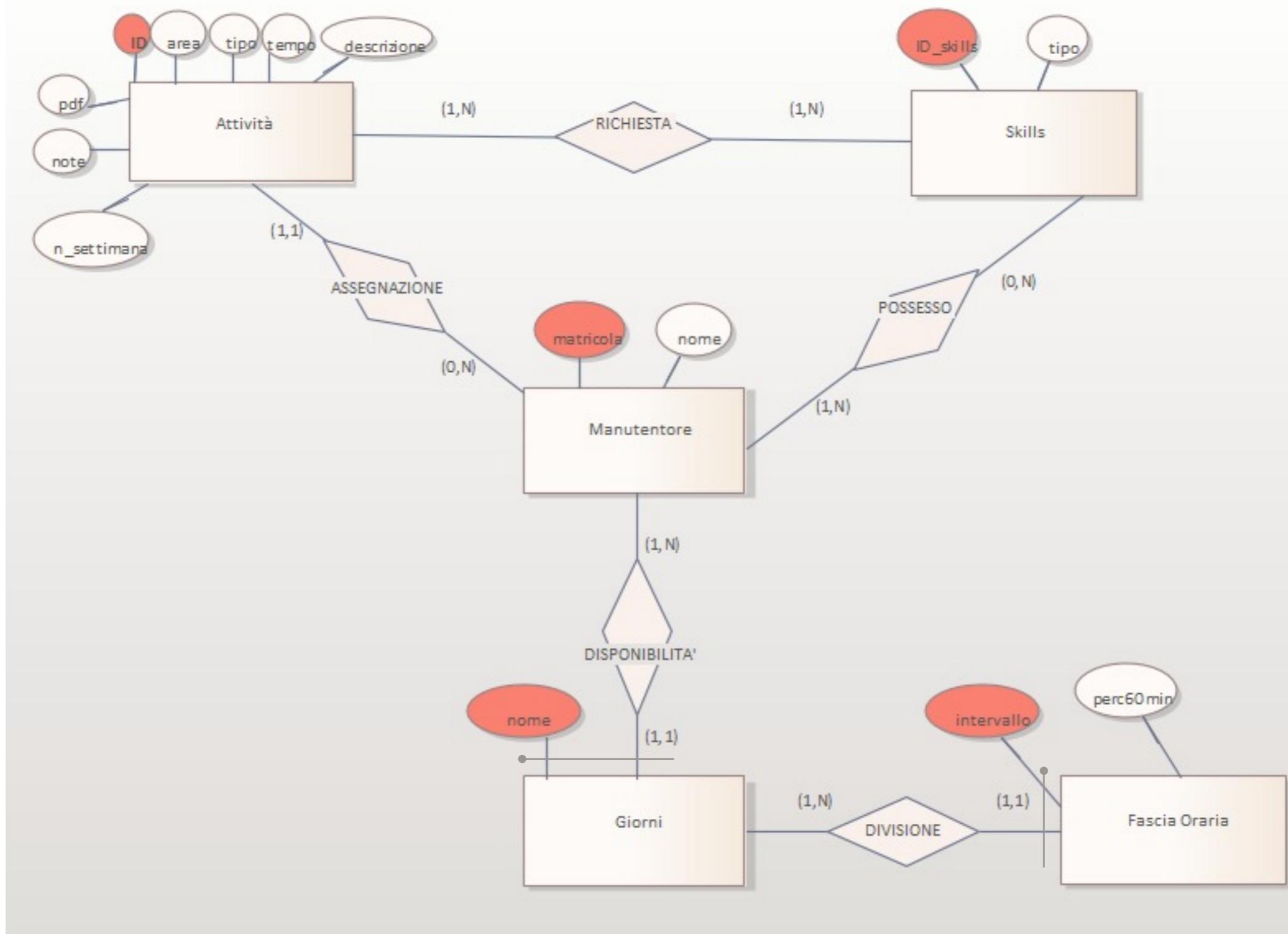
*Vitolo Alessandra 0622701496*

# REALIZATION OF SPRINT I

BACKLOG TASK & ID	STORY POINTS	ASSIGNED TO
User Story #7	8	Alessandra, Lorenzo, Sonia, Martina
Create the DB		Alessandra, Lorenzo, Sonia, Martina
Create the table in DB for the activities		Lorenzo, Martina
Create the web page (GUI)		Alessandra, Sonia
Implement web page's logic		Lorenzo, Martina
Testing phase		Alessandra, Sonia
<b>User Story #16</b>	<b>2</b>	Lorenzo, Martina
Update the DB associating a specific type to each activity		Lorenzo, Martina
<b>User Story #3</b>	<b>8</b>	Alessandra, Lorenzo, Sonia, Martina
Update the DB associating the information to each activity		
Create the web page (GUI)		Lorenzo, Martina
Implement web page's logic		Alessandra, Sonia
Testing phase		Lorenzo, Martina
<b>User Story #4</b>	<b>5</b>	Alessandra, Lorenzo, Sonia, Martina
Update the database Inserting the SMP file in PDF format of the selected activity		Alessandra, Martina
Implement the logic showing SMP file in PDF format of the selected activity		Sonia, Lorenzo
<b>User Story #5</b>	<b>2</b>	Alessandra, Lorenzo, Sonia, Martina
Update the DB adding for each activity the workspace notes		Lorenzo, Martina
Add a text area to the web page		Alessandra, Lorenzo
Implement text area's logic		Alessandra, Lorenzo, Sonia, Martina
Implement the logic showing the current workspace notes of the selected activity		Sonia, Martina



# ER DIAGRAM



# REALIZATION OF SPRINT I

BACKLOG TASK & ID	STORY POINTS	ASSIGNED TO
User Story #7	8	Alessandra, Lorenzo, Sonia, Martina
Create the DB		Alessandra, Lorenzo, Sonia, Martina
Create the table in DB for the activities		Lorenzo, Martina
Create the web page (GUI)		Alessandra, Sonia
Implement web page's logic		Lorenzo, Martina
Testing phase		Alessandra, Sonia
User Story #16	2	Lorenzo, Martina
Update the DB associating a specific type to each activity		Lorenzo, Martina
User Story #3	8	Alessandra, Lorenzo, Sonia, Martina
Update the DB associating the information to each activity		
Create the web page (GUI)		Lorenzo, Martina
Implement web page's logic		Alessandra, Sonia
Testing phase		Lorenzo, Martina
User Story #4	5	Alessandra, Lorenzo, Sonia, Martina
Update the database Inserting the SMP file in PDF format of the selected activity		Alessandra, Martina
Implement the logic showing SMP file in PDF format of the selected activity		Sonia, Lorenzo
User Story #5	2	Alessandra, Lorenzo, Sonia, Martina
Update the DB adding for each activity the workspace notes		Lorenzo, Martina
Add a text area to the web page		Alessandra, Lorenzo
Implement text area's logic		Alessandra, Lorenzo, Sonia, Martina
Implement the logic showing the current workspace notes of the selected activity		Sonia, Martina



## THE MANAGER OF THE MAINTAINERS

Week n°:  SEARCH



MacBook Air

# REALIZATION OF SPRINT I

BACKLOG TASK & ID	STORY POINTS	ASSIGNED TO
User Story #7	8	Alessandra, Lorenzo, Sonia, Martina
Create the DB		Alessandra, Lorenzo, Sonia, Martina
Create the table in DB for the activities		Lorenzo, Martina
Create the web page (GUI)		Alessandra, Sonia
Implement web page's logic		Lorenzo, Martina
Testing phase		Alessandra, Sonia
User Story #16	2	Lorenzo, Martina
Update the DB associating a specific type to each activity		Lorenzo, Martina
User Story #3	8	Alessandra, Lorenzo, Sonia, Martina
Update the DB associating the information to each activity		Lorenzo, Martina
Create the web page (GUI)		Lorenzo, Martina
Implement web page's logic		Alessandra, Sonia
Testing phase		Lorenzo, Martina
User Story #4	5	Alessandra, Lorenzo, Sonia, Martina
Update the database Inserting the SMP file in PDF format of the selected activity		Alessandra, Martina
Implement the logic showing SMP file in PDF format of the selected activity		Sonia, Lorenzo
User Story #5	2	Alessandra, Lorenzo, Sonia, Martina
Update the DB adding for each activity the workspace notes		Lorenzo, Martina
Add a text area to the web page		Alessandra, Lorenzo
Implement text area's logic		Alessandra, Lorenzo, Sonia, Martina
Implement the logic showing the current workspace notes of the selected activity		Sonia, Martina



# TESTING DB & TESTING TABLE

The screenshot shows a PHP development environment. The code editor displays a test file named `TestApplication.php` which contains a single test case for database connection. The run results window shows that all tests have passed. The status bar at the bottom indicates that 1 test was passed a minute ago.

```
<?php
use PHPUnit\Framework\TestCase;

include '../src/controller/functions.php';

final class TestApplication extends TestCase {
    public function testConnectionToDatabase(): void {
        $this->assertnotEquals(False, getDB());
    }
}
```

Run: TestApplication.testConnectionToDatabase

Tests passed: 1 of 1 test – 115 ms

Testing started at 18:53 ...  
C:\xampp\php\php.exe C:\bin\phpunit.phar --no-configuration  
PHPUnit 9.4.3 by Sebastian Bergmann and contributors.

Time: 00:00.123, Memory: 18.00 MB

OK (1 test, 1 assertion)

Process finished with exit code 0

Tests passed: 1

Run Problems PHP-CGI Server TODO Terminal Build

Tests passed: 1 (a minute ago)

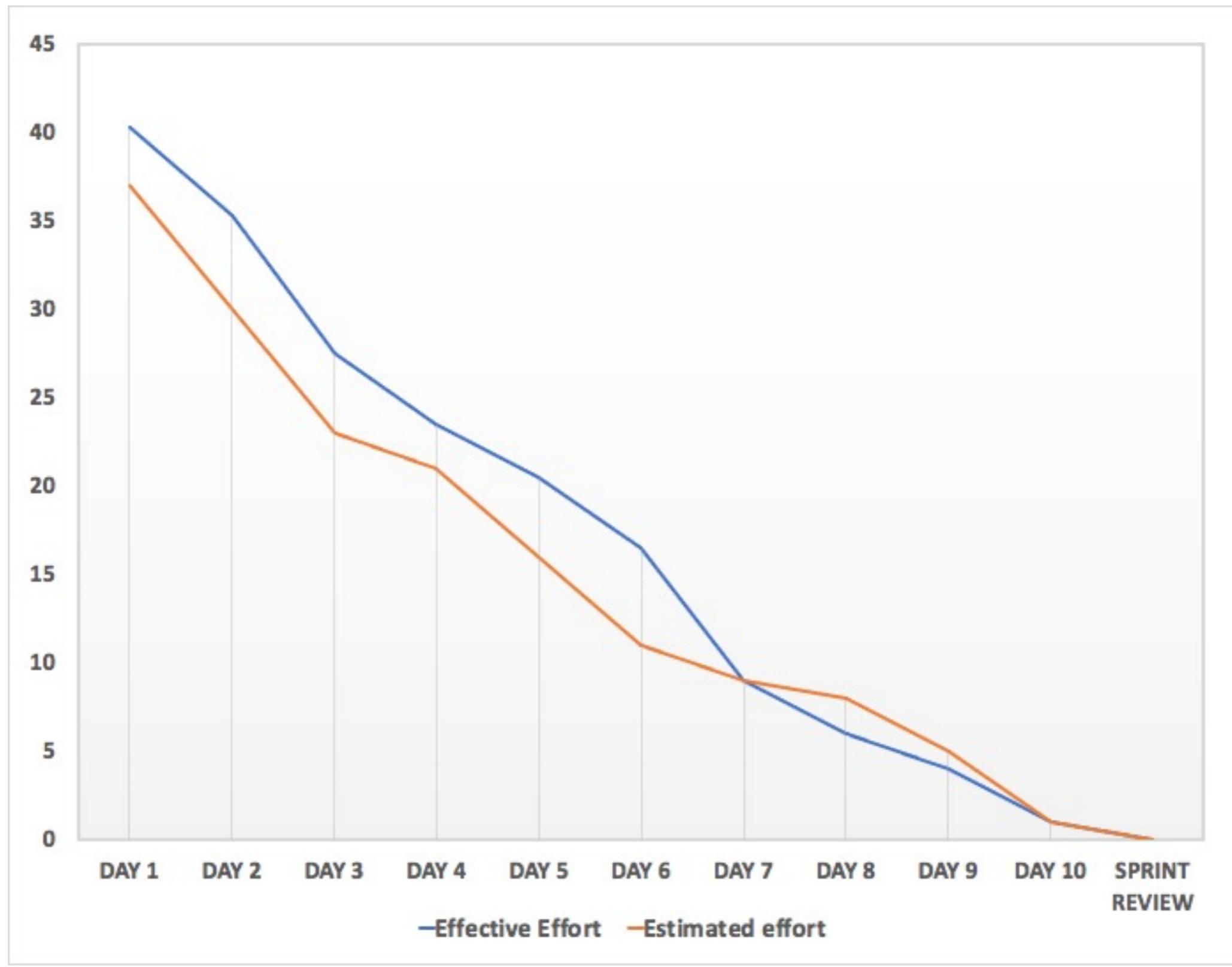
REQUISITO	DESCRIZIONE	RISULTATO
Visualizzazione delle attività di manutenzione ordinate per settimana	Per poter mostrare le attività di manutenzione da svolgere, è necessario prelevare i dati da un database e mostrarli tramite la pagina Web al client. Tramite apposito input, verranno visionate solo le attività della settimana selezionata dall'utente.	Superato
Visualizzazione informazioni specifica attività	In seguito a clic del tasto "Select" riferito a una specifica attività presente in Page1, l'user viene reindirizzato a Page2, dove può visionare le informazioni relative allo specifico intervento.	Superato
Visualizzazione dei diversi tipi di attività	All'interno della page1, l'user può visualizzare il tipo di ogni attività schedulata.	Superato
Download del SMP file in formato PDF	All'interno della page2, l'user, mediante apposito pulsante, può scaricare l'SMP file in formato PDF relativo all'attività selezionata.	Superato
Facoltà di modifica delle Workspace Notes	All'interno della page2, l'user, può modificare le note relative all'attività selezionata, digitando la nuova nota all'interno dell'apposita area di testo, cliccando successivamente il tasto "Edit".	Superato

# AGILE SPRINT BACKLOG

## ESTIMATED TABLE

BACKLOG TASK & ID	STORY POINTS	ASSIGNED TO	STATUS	ORIGINAL EFFECTIVE	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7	DAY 8	DAY 9	DAY 10	SPRINT REVIEW
User Story #7	8	Alessandra, Lorenzo, Sonia, Martina													
Create the DB		Alessandra, Lorenzo, Sonia, Martina		9	5	4	0	0	0	0	0	0	0	0	
Create the table in DB for the activities		Lorenzo, Martina		0,25	0	0,25	0	0	0	0	0	0	0	0	
Create the web page (GUI)		Alessandra, Sonia		3	0	0	3	0	0	0	0	0	0	0	
Implement web page's logic		Lorenzo, Martina		4	0	0	1	3	0	0	0	0	0	0	
Testing phase		Alessandra, Sonia		3	0	0	0	0	0	0	0	0	2	1	0
User Story #16	2	Lorenzo, Martina													
Update the DB associating a specific type to each activity		Lorenzo, Martina		0,5	0	0,5	0	0	0	0	0	0	0	0	
User Story #3	8	Alessandra, Lorenzo, Sonia, Martina													
Update the DB associating the information to each activity		Sonia, Martina		0,5	0	0,5	0	0	0	0	0	0	0	0	
Create the web page (GUI)		Lorenzo, Martina		5	0	0	0	0	4	1	0	0	0	0	
Implement web page's logic		Alessandra, Sonia		3	0	0	0	0	0	3	0	0	0	0	
Testing phase		Lorenzo, Martina		3	0	0	0	0	0	0	0	0	0	2	1
User Story #4	5	Alessandra, Lorenzo, Sonia, Martina													
Update the database inserting the SMP file in PDF format of the selected activity		Alessandra, Martina		2	0	2	0	0	0	0	0	0	0	0	
Implement the logic showing SMP file in PDF format of the selected activity		Sonia, Lorenzo		2	0	0	0	0	0	2	0	0	0	0	
User Story #5	2	Alessandra, Lorenzo, Sonia, Martina													
Update the DB adding for each activity the workspace notes		Lorenzo, Martina		0,5	0	0,5	0	0	0	0	0	0	0	0	
Add a text area to the web page		Alessandra, Lorenzo		0,5	0	0	0	0	0	0,5	0	0	0	0	
Implement text area's logic		Alessandra, Lorenzo, Sonia, Martina		3	0	0	0	0	0	1	2	0	0	0	
Implement the logic showing the current workspace notes of the selected activity		Sonia, Martina		1	0	0	0	0	0	0	1	0	0	0	
ESTIMATED TOTAL				40,25	5	7,75	4	3	4	7,5	3	2	3	1	0
ACTUAL PARTIAL					40,25	35,25	27,5	23,5	20,5	16,5	9	6	4	1	0

# BURNDOWN CHART





Bacheche

Team 2

Visibile al gruppo

Invita

Burndown Chart

Calendario

Butler

Mostra menu

40.25 37

Product Backlog

Sprint Backlog

In progress

Done

Sprint Complete

+ Aggiungi un'altra scheda

+ Aggiungi un'altra scheda

+ Aggiungi un'altra scheda

+ Aggiungi un'altra scheda

Story 1

Story 6

Story 13

Story 14

Story 15

Story 17

Story 2

Story 9

Story 8

Story 10

Story 11

Story 12

Story 7

Story 16

Story 3

Story 4

Story 5

SPRINT 2

SPRINT 1

40.25 37

3 dic 4/4 19.25 16

3 dic 1/1 0.5 2

3 dic 3/3 11.5 13

3 dic 2/2 4 3

3 dic 4/4 5 3

+ Aggiungi una scheda

+ Aggiungi un'altra scheda

+ Aggiungi un'altra scheda

+ Aggiungi un'altra scheda

MacBook Air

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GRAZIE PER  
L'ATTENZIONE



TEAM 2

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