

# Software Project Management - Laboratory

Lecture n° 5  
A.Y. 2020-2021

# Some clarification about Git

Every-time you create a file, and track it, git compresses it and stores it into its own data structure. The compressed object will have a unique name, a hash, and will be stored under the object directory.

When we commit git does:

1. If the file didn't change, git just adds the name of the compressed file (the hash) into the snapshot.
2. If the file has changed, git compresses it, stores the compressed file in the object folder. Finally it adds the name (the hash) of this compressed file into the snapshot.

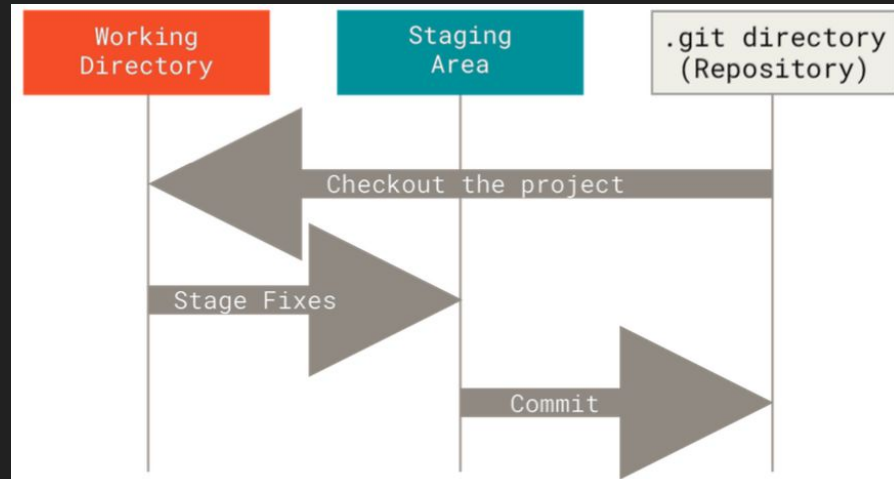


Figure 6. Working tree, staging area, and Git directory

# Git Objects Status before another commit

```
[(base) fabriziunicam:MyFirsrSecondRepo user$ ls -a
.          EightFile.txt  FirstFile.txt  SecondFile.txt
..         EigthFile.txt   NewFile.txt    ThirdFile.txt
.git       FifthFile.txt   README.md
[(base) fabriziunicam:MyFirsrSecondRepo user$ cd .git/
[(base) fabriziunicam:.git user$ ls -a
.          FETCH_HEAD   config          index           objects
..         HEAD           description     info            refs
COMMIT_EDITMSG  ORIG_HEAD     hooks          logs
[(base) fabriziunicam:.git user$ cd objects/
[(base) fabriziunicam:objects user$ ls -a
.          17          45          5a          7c          a0          b0          c9          f6
..         30          49          5f          7f          a2          b9          ce          fb
00        38          4a          67          82          a3          bb          d2          fe
0a        3a          56          75          96          a8          bf          e6          info
12        3f          58          7a          99          aa          c0          f1          pack
```

# Git Objects Status before another commit

```
(base) fabriziunicam:MyFirsrSecondRepo user$ vi NinethFile.txt
(base) fabriziunicam:MyFirsrSecondRepo user$ git add NinethFile.txt
(base) fabriziunicam:MyFirsrSecondRepo user$ git commit -m "I added file number nine"
[master 84c6840] I added file number nine
1 file changed, 1 insertion(+)
create mode 100644 NinethFile.txt
```

# Git Objects Differences

```
[(base) fabriziounicam:MyFirsrSecondRepo user$ ls -a
.          EightFile.txt  FirstFile.txt  SecondFile.txt
..         EighthFile.txt  NewFile.txt    ThirdFile.txt
.git       FifthFile.txt    README.md
[(base) fabriziounicam:MyFirsrSecondRepo user$ cd .git/
[(base) fabriziounicam:.git user$ ls -a
.          FETCH_HEAD  config      index      objects
..         HEAD          description info        refs
COMMIT_EDITMSG  ORIG_HEAD  hooks       logs
[(base) fabriziounicam:.git user$ cd objects/
[(base) fabriziounicam:objects user$ ls -a
.          17      45      5a      7c      a0      b0      c9      fb
..         30      49      5f      7f      a2      b9      ce      fb
00         38      4a      67      82      a3      bb      d2      fe
0a         3a      56      75      96      a8      bf      e6      info
12         3f      58      7a      99      aa      c0      f1      pack
```

```
[(base) fabriziounicam:MyFirsrSecondRepo user$ ls -a
.          EightFile.txt  FirstFile.txt  README.md
..         EighthFile.txt  NewFile.txt    SecondFile.txt
.git       FifthFile.txt  NinthFile.txt  ThirdFile.txt
[(base) fabriziounicam:MyFirsrSecondRepo user$ cd .git/
[(base) fabriziounicam:.git user$ ls -a
.          FETCH_HEAD  config      index      objects
..         HEAD          description info        refs
COMMIT_EDITMSG  ORIG_HEAD  hooks       logs
[(base) fabriziounicam:.git user$ cd objects/
[(base) fabriziounicam:objects user$ ls -a
.          17      38      4a      67      7f      a0      b0      c9      f6
..         1e      3a      56      73      82      a2      b9      ce      fb
00         28      3f      58      75      84      a3      bb      d2      fe
0a         2c      45      5a      7a      96      a8      bf      e6      info
12         30      49      5f      7c      99      aa      c0      f1      pack
```

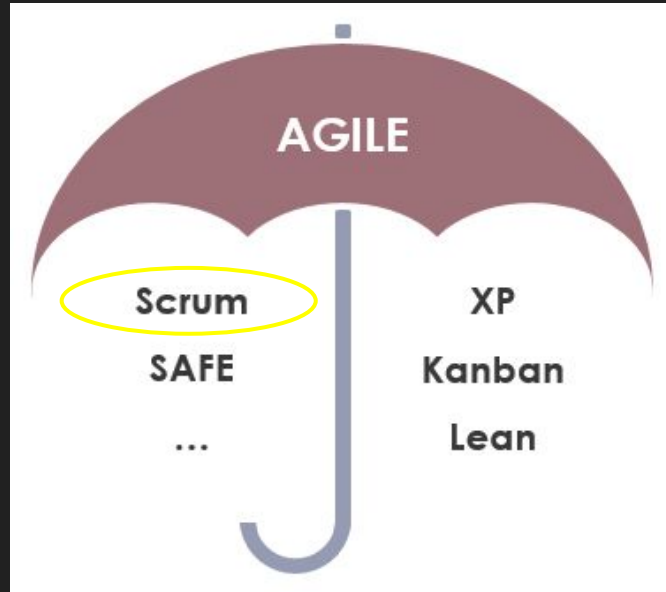
Back to today's lesson...

# Github Repository Setup

1. I will create a repository for each group
2. I will invite you to each repository
3. The Scrum Master will invite the group member as reported in the shared document
4. You will start defining User Stories as Issues

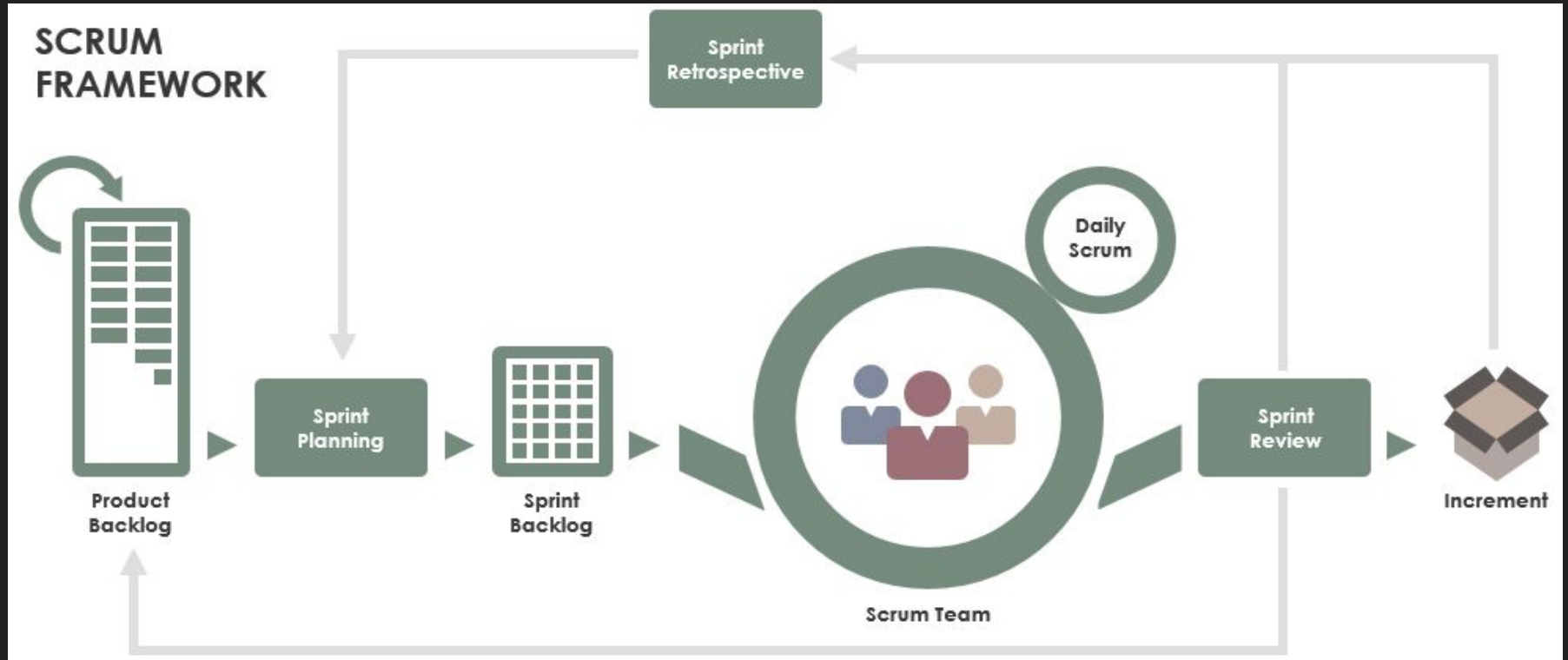
# SCRUM - Recap

**Scrum** is an Agile framework for project management that emphasizes teamwork, accountability and iterative progress toward a well-defined goal.





# SCRUM



# Roles

**Product Owner** - is responsible for working with the user group to determine what features will be in the product release. Some of the responsibilities:

- Develop the direction and strategy for the products and services, including the short and long-time goals;
- Provide or have access to knowledge about the product or the service;
- Understand and explain customer needs for the Development team;

**Scrum Master** - is the facilitator for an agile development team. Some of the responsibilities:

- Act as a coach, helping the team to follow scrum values and practices;
- Help to remove impediments and protect the team from external interferences;
- Promote a good cooperation between the team and stakeholders;

**Scrum Team** - is formed by 3 to 9 people who MUST fulfill all technical needs to deliver the product or the service. They will be guided directly by the Scrum Master, but they will not be directly managed. They must be self-organized, versatile, and responsible enough to complete all required tasks.

# Group Management & Planning

## Groups

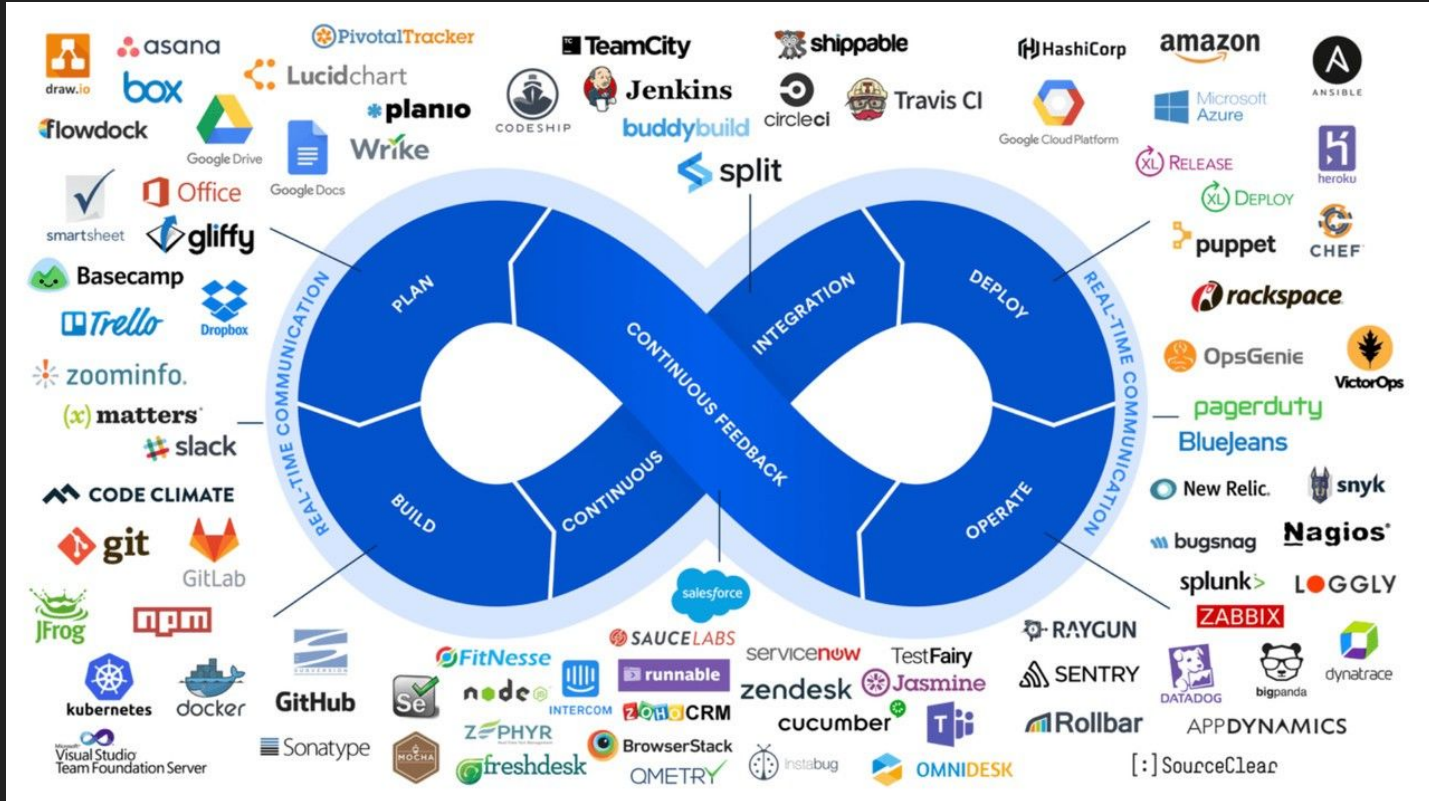
<https://docs.google.com/spreadsheets/d/1tOdMoBKzBjcHGQI3ACmrkkcaFbc2TuPfgmFQM2jL9BU/edit#gid=0>

# Sprint Planning

Every 2 Weeks on Friday a Sprint finishes and a new one Starts.

<b>Friday</b>	<b>Sprint 1</b>
<b>Thursday</b>	
<b>Friday</b>	
<b>Thursday</b>	
<b>Friday</b>	<b>Sprint 2</b>
<b>Thursday</b>	
<b>Friday</b>	
<b>Thursday</b>	
<b>Friday</b>	<b>Sprint 3</b>
<b>Thursday</b>	
<b>Friday</b>	
<b>Thursday</b>	
<b>Friday</b>	<b>Sprint 4</b>
<b>Thursday</b>	
<b>Friday</b>	
<b>Thursday</b>	

# DevOps: Planning



# Inside Team Communication

## Groups

<https://docs.google.com/spreadsheets/d/1tOdMoBKzBjcHGQI3ACmrkkcaFbc2TuPfgmFQM2jL9BU/edit#gid=0>

# Exam Evaluation

## Evaluation Schema

[https://docs.google.com/spreadsheets/d/16D7shtTEO1BNxeauj\\_X5H25wYkG8DQQGYHenOeD1KOM/edit?usp=sharing](https://docs.google.com/spreadsheets/d/16D7shtTEO1BNxeauj_X5H25wYkG8DQQGYHenOeD1KOM/edit?usp=sharing)

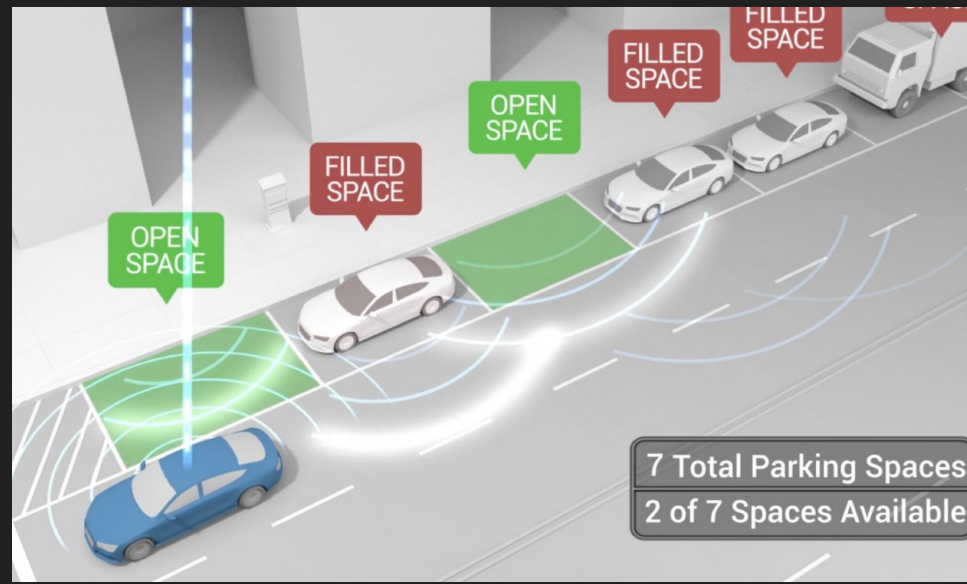
	Failure		Risk	Success					
Git Usage	0	1	2	3	4		4		
Testing	0	1	2	3	4		8		
SCRUM application	0	1	2	3	4		8		
Presentation	0	1	2	3	4		4		
Overall Project	0	1	2	3	4		8		
							32		32
Git Usage	2		Number of Commit	Quality of Commit	General usage (branches, contribution of group members)				
Testing	2		Numebr of Tests	Quality of Tests	Jenkins Usage				
SCRUM application/Sp	2		Capability of planning and fulfilling the planned sprint tasks; Documentation produced: User Stories, Technical Documentation (wiki)						
Presentation	2		Quality of Exam presentation: design, speaking and answers to questions						
Overall Project	2		Number of fulfilled tasks, Quality of fulfilled tasks, Presence/Absence of bugs (not detected by tests)						
	16								

You are not allowed to take a grade less than 2 and all the rest 3 or 4

# Smart Parking

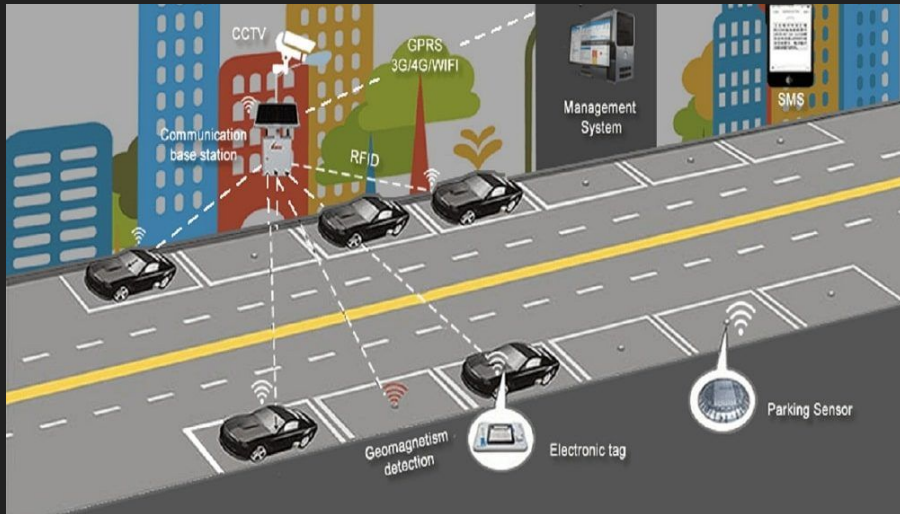
## Actors:

- Driver
- Municipality
- Policeman
- Tow Truck
- ...



## Scenarios:

- Find a Parking Spot
- Drive to the Parking Spot
- Pay the Parking Spot
- Check the Parking Spot has been paid
- Change Parking Spot Status (pay per use vs free parking spot)
- Analyse Parking Status History
- ...





# Smart Parking

[https://scholar.google.com/scholar?hl=en&as\\_sdt=0%2C5&q=smart+parking](https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=smart+parking)

## Some Literature:

- Al-Turjman, F., & Malekloo, A. (2019). *Smart parking in IoT-enabled cities: A survey*. *Sustainable Cities and Society*, 49, 101608.
- Lin, T., Rivano, H., & Le Mouël, F. (2017). *A survey of smart parking solutions*. *IEEE Transactions on Intelligent Transportation Systems*, 18(12), 3229-3253.
- Saleem, Y., Sotres, P., Fricker, S., de la Torre, C. L., Crespi, N., Lee, G. M., ... & Sanchez, L. (2020). *IoTRec: The IoT Recommender for Smart Parking System*. *IEEE Transactions on Emerging Topics in Computing*.
- Lin, T., Rivano, H., & Le Mouël, F. (2017). *A survey of smart parking solutions*. *IEEE Transactions on Intelligent Transportation Systems*, 18(12), 3229-3253.



# Technological Requirements

## Software

- Backend in Java (e.g., Spring boot api rest)
- Git + GitHub as Version Control System

## Hardware

- IoT devices which use different communication protocols (e.g. LoRa, MQTT, HTTP, etc.)
- Deploy on Cloud and/or Edge
- Possibilità di utilizzo di veri device IoT

# Artifacts

The SCRUM artifacts are used to help define the workload coming into the team and currently being worked upon the team.

The main artifacts:

- Product backlog - a collection of user stories which present functionalities required/wanted by the product team. Usually the product owner takes responsible for this list.
- Sprint backlog - a collection of stories which could be included in the current sprint.

# User Stories

A User Story is a simple and quick description of a specific way that the user will use the software. Generally between one and four sentences long.

Can generally follow a template:

*As a <type of user>,  
I want to <specific action I'm taking>  
so that <what I want to happen as a result>.*

e.g. “As a customer, I want to be able to create an account so that I can see the purchases I made in the last year to help me budget for next year.”

Assign a value to estimate the effort needed to elaborate a user story (e.g., 1 to 5).

# User Stories

*As a driver*

*I want to be localized on a map and search a destination  
so that I can see the distance from the destination*

*As Municipality*

*I want to add a new parking space into the system  
so that users can see and interact with the new parking space*

# User Stories

*As a Team member*

*I want to search for an IoT simulator*

*so that I can abstract from the physical world for the initial phases of the project*

*As a Team member*

*I want to study React*

*so that we can use it for the front-end*

# Github Issues

Filters

Labels 13

Milestones 1

New issue

4 Open ✓ 1 Closed

Author ▾

Label ▾



Projects ▾

Milestones ▾

Assignee ▾

Sort ▾

 **Driver Login** points: 2 user story  
#5 opened 6 hours ago by FabrizioFornari  Sprint 1

 **Driver Geolocalization** points: 4 user story  
#4 opened 7 hours ago by FabrizioFornari  Sprint 1

 **User Story 3** points: 2  
#3 opened 20 days ago by FabrizioFornari

 **User Story #1** points: 3 user story  
#1 opened 22 days ago by FabrizioFornari  0 of 2 

 1

# New Issues

FabrizioFornari / SPM2020Template Private


Unwatch 1 Star 0 Fork 0

<> Code Issues 4 Pull requests Actions Projects 1 Security Insights Settings


## Driver Geolocalization #4


Edit New issue


Open FabrizioFornari opened this issue 2 minutes ago · 0 comments


 FabrizioFornari commented 2 minutes ago 😊 ...


As a driver  
I want to be localized on a map and search a destination  
so that I can see the distance from the destination

 FabrizioFornari assigned FabrizioFornari and unassigned FabrizioFornari 2 minutes ago

 FabrizioFornari added this to the **Sprint 1** milestone 2 minutes ago

 FabrizioFornari self-assigned this 1 minute ago

 FabrizioFornari removed their assignment 1 minute ago

 FabrizioFornari added points: 4 user story labels 23 seconds ago

**Assignees** ⚙️  
No one—assign yourself

**Labels** ⚙️  
points: 4 user story

**Projects** ⚙️  
**Sprint #1**  
Awaiting triage ▾

**Milestone** ⚙️  
Sprint 1

**Linked pull requests** ⚙️  
Successfully merging a pull request may close this issue.




# Closing Issues

## User Story #1 #1



Edit New issue



Closed FabrizioFornari opened this issue 22 days ago · 1 comment


---

 FabrizioFornari commented 22 days ago 😊 ...



As a ,  
I want to <specific action I'm taking>  
so that .

  FabrizioFornari added points: 3 user story labels 22 days ago

  FabrizioFornari added this to User Stories in **Sprint #1** 22 days ago

 FabrizioFornari commented now Author 😊 ...

I added this functionality which is available by means of...

  FabrizioFornari closed this now

**Assignees** ⚙️

No one—assign yourself


---

**Labels** ⚙️

points: 3 user story

---

**Projects** ⚙️

 **Sprint #1**  
User Stories ▾

---

**Milestone** ⚙️

No milestone

---

**Linked pull requests** ⚙️

Successfully merging a pull request may close this issue.

None yet

# User Stories Size

## Driver Login #5

 Open FabrizioFornari opened this issue 8 hours ago · 0 comments



FabrizioFornari commented 8 hours ago · edited ▾



As a driver  
I want to login into the system  
so that I can use it

- I want to login using facebook credentials
- I want to login using gmail credentials
- I want to login using unicom credentials