

# Workflow

**22.11.2021**

# Discussion : Two Model Frameworks

- User wants to know **what** to plant
- User wants to know **when** to plant
- Back and Forth Models !
  - One model for each loop (Survival Analysis for one and ML for other)
  - ML Model for both
  - Survival Analysis for both

# 1st Situation : user wants **WHAT** to plant

- User :
  - Available space in the garden
  - When she/he wants to start planting
  - When she/he plants to harvest
  - *Location :*
    - Climate Classification based on Map (requires simplification)

space

start\_plant

harvest

climate

# 1st Situation : user wants **WHAT** to plant

## ML Model:

- Add grow\_time information

space	start_plant	harvest	grow_time	climate
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```
> predict(space, start_plant, harvest, grow_time, climate)
```

- Outcome = **name**

name



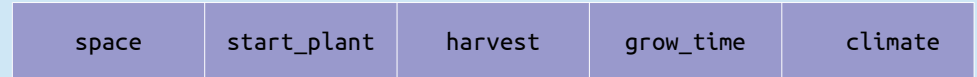
space	start_plant	harvest	grow_time	climate
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- It must be stochastic at some point (Naive Bayes ?, maybe...)

# 1st Situation : user wants **WHAT** to plant

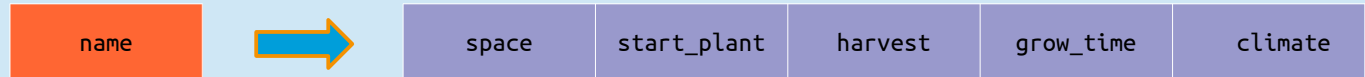
## Survival Analysis Framework :

- Add grow\_time information
- This is SA's main output
- ML to pass «survival prob» (  $P(s)$  ) to every plant



```
> predict(space, start_plant, harvest, grow_time, climate)
```

- Outcome = **name**
  - It is already stochastic. We will have the  $P(s)$  for every vegetable. Then a single filter should be good to pass names to user.
  - $P(s > .7)$



## 2nd Situation : user wants **WHEN** to plant

- User :
  - Vegetable she/he wants to plant
  - Available space in the garden
  - *Location* :
    - Climate Classification based on Map (requires simplification)

name

space

climate

## 2nd Situation : user wants **WHEN** to plant

### ML Model :

- Reduced information

```
> predict(name, space, climate)
```

- Outcome = **start\_to\_plant** and **harvest** time
  - Is it even a model or just a filter ?

name	space	start_plant	harvest	climate
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## 2nd Situation : user wants **WHEN** to plant

### Survival Analysis (Not a Framework anymore) :

- Reduced information

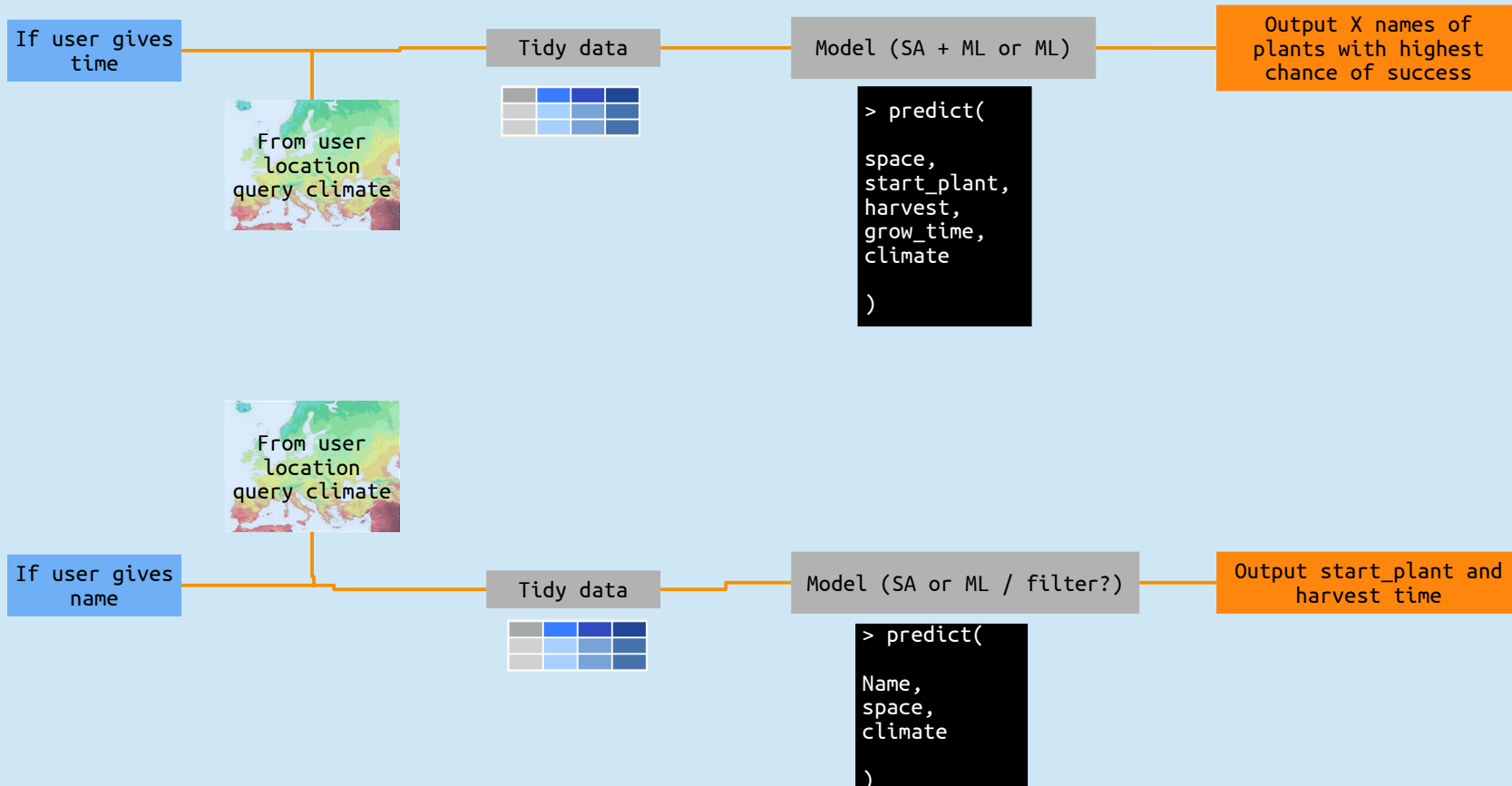
```
> predict(name, space, climate)
```

- Outcome = **start\_to\_plant** and **harvest** time (simple result of SA)
  - Is it even a model or just a filter ? (Same problem)





# The Workflow



# TODO

- 1 .Find useful Europe Climate Map**
- 2. Simplify Cimate information**
- 3. Complete climate information in dataset**
- 4. Train and Validate both approaches to check for best option**
- 5. COLLECT MORE DATA !**