NAOPlanningChallenge.py

```
# NAO PLANNING CHALLENGE 2021
# Fundamentals of Artificial Intelligence
# and Knowledge Representation

TEAM_WALL_E = [
    'Vincenzo Collura',
    'Samuele Marino',
]
```

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

algorithm.py

constraints.py

```
# Used Library:
import aima

algorithm = depth_first_graph_search()
programming_languages= 'Python'

MODELING = {
    State : ('CurrentPosition', 'NumberPosition', 'ActualTime',
             'PreviousPosition')
    Action : 'Movement from a position P1 to another position P2'
    Goal : ('FinalPosition', 'X>=5', 'time<=20', 'PreviousPosition')
}
```

algorithm.py

constraints.py

```
CONSTRAINTS = [
    'Mandatory intermediate positions',
    'Iterate over mandatory positions and generate
    intermediate independent sequence and then unify all the
    sequence in a single choreography',
    'At least five positions'
]
Time = 'Choose sequence of positions in order to create
        three minutes time choreography'

# Deleting duplicates through use a list of previous position
# Random shuffle of the possible next moves
```

mandatory_position.py

position.py

```
MANDATORY_POSITION = {
    'StandInit': 0,
    'Hello': 4.639948129653931,
    'Stand': 2.02,
    'Sit': 11.704515933990479,
    'Wipe_Forehead': 5.119374990463257,
    'StandZero': 1.4620330333709717,
    'SitRelax': 14.200019121170044,
    'Crouch': 1.6594460010528564
}

SONG = 'Mille.wav'
```

mandatory_position.py

position.py

```
POSITION = {
    'Arms_opening': 7.761928081512451,
    'Diagonal_left': 3.4190828800201416,
    'Diagonal_right': 3.4149229526519775,
    'Stand_from_sit': 7.957381010055542,
    'Move_backward': 3.8621809482574463,
    'Move_forward': 3.838757038116455,
    'Right_arm': 9.083323955535889,
    'Rotation_foot_LLeg': 9.015203952789307,
    'Rotation_foot_RLeg': 8.62186598777771,
    ...
}
```

```
1
2
3
4
5
6
7  # THANKS FOR LISTENING
8
9
10
11
12
13
14
```