```python
1
2   # NAO PLANNING CHALLENGE 2021
3   # Fundamentals of Artificial Intelligence
4   # and Knowledge Representation
5
6
7   TEAM_WALL_E = [
8       'Vincenzo Collura',
9       'Samuele Marino',
10  ]
11
```

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```python
1  # Used Library:
2  import aima
3
4
5  algorithm = depth_first_graph_search ()
6  programming_languages = 'Python'
7
8  MODELING = {
9
10     State : ('CurrentPosition', 'NumberPosition', 'ActualTime',
11              'PreviousPosition')
12     Action : 'Movement from a position P1 to another position P2'
13     Goal : ('FinalPosition', 'X>=5', 'time<=20', 'PreviousPosition')
14  }
```

Fundamentals of Artificial Intelligence and Knowledge Representation

```python
1   CONSTRAINTS = [
2       'Mandatory intermediate positions',
3       'Iterate over mandatory positions and generate
4       intermediate independent sequence and then unify all the
5       sequence in a single choreography',
6
7       'At least five positions'
8   ]
9
10  Time = 'Choose sequence of positions in order to create
11          three minutes time choreography'
12
13  # Deleting duplicates through use a list of previous position
14  # Random shuffle of the possible next moves
```

Fundamentals of Artificial Intelligence and Knowledge Representation

```python
MANDATORY_POSITION = {
    'StandInit': 1.45948129653931,
    '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'
```

```python
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,
    ...
}
```

Fundamentals of Artificial Intelligence and Knowledge Representation

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