

```

1  #!/usr/bin/python3.4
2  # -*-coding:Utf-8 -*
3
4  from lib.inherit_docstring import inherit_docstring
5  from random import choice, randint
6
7  from src.meta.ABCInheritableDocstringsMeta import ABCInheritableDocstringsMeta
8  from mario.data.constants import SCREEN_HEIGHT, SCREEN_WIDTH, GROUND_HEIGHT
9  from src.EvolutiveGenerator.GeneticElementFactory import GeneticElementFactory
10 from src.entities.GameEventData import GameEventData
11
12
13 class GameEventDataFactory (GeneticElementFactory, metaclass=ABCInheritableDocstringsMeta):
14     """GameEventData factory"""
15
16     @property
17     @inherit_docstring
18     def genetic_element_class (self):
19         return GameEventData
20
21     GAME_EVENT_NAMES = ('game.block', 'game.enemy', 'game.powerup', 'game.coin')
22
23     MIN_X = -int(SCREEN_WIDTH / 2) # max left
24     MAX_X = SCREEN_WIDTH # max right
25     MIN_Y = -GROUND_HEIGHT # max top
26     MAX_Y = SCREEN_HEIGHT # max bottom
27
28
29     @classmethod
30     @inherit_docstring
31     def create(cls):
32         return GameEventData (cls.createEventName (), cls.createCoor ())
33
34     @classmethod
35     @inherit_docstring
36     def mutate(cls, element):
37         if randint(0, 1):
38             element.event_name = cls.createEventName ()
39         else:
40             element.coor = cls.mutateCoor (element.coor)
41
42
43     @staticmethod
44     def hydrate(data):
45         return GameEventData (**data)
46
47
48     @classmethod
49     def createEventName (cls):
50         if randint(0, 9):
51             return cls.GAME_EVENT_NAMES [0]
52         return choice (cls.GAME_EVENT_NAMES [1:])
53
54     @classmethod
55     def createCoor (cls):
56         return {
57             'x': randint (cls.MIN_X, cls.MAX_X),
58             'y': randint (cls.MIN_Y, cls.MAX_Y)
59         }
60
61     @classmethod
62     def mutateCoor (cls, coor):
63         coor['x'] += randint (-100, 100)
64         coor['y'] += randint (-100, 100)
65
66         if coor['x'] < cls.MIN_X:
67             coor['x'] = cls.MIN_X
68         if coor['x'] > cls.MAX_X:
69             coor['x'] = cls.MAX_X
70         if coor['y'] < cls.MIN_Y:
71             coor['y'] = cls.MIN_Y
72         if coor['y'] > cls.MAX_Y:
73             coor['y'] = cls.MAX_Y
74         return coor

```