jupyter Mutator_Tests Last Checkpoint: 4 months ago

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Code JupyterLab

[1]:
```
import sys
sys.path.insert(0, '..')

from mutators import *
from random import randrange, choice, random, uniform
from matplotlib import pyplot as plt
from numpy import sign
from cmath import phase
from math import ceil
from gp import GPTreebank
import operators as ops
```

[2]:
```
type(MutatorFactory(int, 0.25))
```

[2]:
```
mutators.IntMutator
```

[3]:
```
type(MutatorFactory(bool, 0.25))
```

[3]:
```
mutators.BoolMutator
```

[4]:
```
type(MutatorFactory(float, 0.25, 1.25))
```

[4]:
```
mutators.FloatMutator
```

[5]:
```
type(MutatorFactory(complex, 0.25, 1.25))
```

[5]:
```
mutators.ComplexMutator
```

[2]:
```
class Counter(dict):
    def inc(self, key):
        self[key] = self.get(key, 0) +1
```

[5]:
```
def test_im(*args):
    fig, axs = plt.subplots(len(args), 2)
    for i, mr in enumerate(args):
        ct_abs = Counter()
        ct_sign = Counter()
        im = MutatorFactory(np.int64, mr)
        for j in range(100000):
            val = randrange(-100, 100)
            delta = im(val) - val
            ct_abs.inc(abs(delta))
            ct_sign.inc(sign(delta))
        if len(args) > 1:
            axs[i, 0].bar(sorted(ct_abs.keys()), [ct_abs[k] for k in sorted(ct_abs
            axs[i, 0].set_title(f'Absolute values, mutation rate = {mr}')
            axs[i, 1].bar(sorted(ct_sign.keys()), [ct_sign[k] for k in sorted(ct_s
            axs[i, 1].set_title(f'Signs, mutation rate = {mr}')
        else:
```