<이산수학>_5장_프로그래밍 실습_파이썬 코드

프로그래밍 실습 1

```python
from __future__ import print_function
from sys import stdin

def printf(str, *args):
        print(str % args, end='')


domain = 10

def readfile(fn, adjacency, nocheck, n2):
        adjacencymx = [[0 for j in range(len(adjacency[0]))] for i in range(len(adjacency))]
        fp = open(fn, 'r')
        printf("%5cf%d={"%(' ',nocheck))
        lines = fp.readlines()
        i=0
        for line in lines:
                values = line.strip('\n').split()
                x = int(values[0])
                y = int(values[1])

                adjacencymx[x][y] = 1
                printf("%2c(%2d, %2d)" %(' ',x,y))
                i += 1
                if i>n2:
                        break
        fp.close()
        return adjacencymx

adjacencymx = [[0 for j in range(domain+1)] for i in range(domain+1)]

fn = "pp3-1.dat"
fn2 = "pp3-2.dat"

nocheck = 1
n1 = 10
n2 = 10

adjacencymx = readfile(fn, adjacencymx,nocheck, n1)
printf("}\n\n")

define1=1

for i in range(1, domain+1):
        define2 = 0
        nocol = 0
        for j in range(1, domain+1):
                if adjacencymx[i][j] == 1:
                        define2 = 1
                        nocol += 1

        if define2 == 0:
                define1 = 0
                printf("%5cf%d is not function because" %(' ',nocheck))
                printf(" f(%d) is not defined.\n"%i)
```

```python
        if nocol > 1:
                printf("%5cf%d is not function because" %(' ',nocheck))
                printf(" f(%d) is not unique image.\n"%i)

if define1 == 1:
        printf("%5cf%d is well-defined.\n\n"%(' ',nocheck))
nocheck += 1
printf("\n\n")
for i in range(1,domain+1):
        for j in range(1, domain+1):
                adjacencymx[i][j] = 0
adjacencymx = readfile(fn2, adjacencymx,nocheck, n2)
printf("}\n\n")

define1=1;

for i in range(1, domain+1):
        define2 = 0
        nocol = 0
        for j in range(1, domain+1):
                if adjacencymx[i][j] == 1:
                        define2 = 1
                        nocol += 1

        if define2 == 0:
                define1 = 0
                printf("%5cf%d is not function because" %(' ',nocheck))
                printf(" f(%d) is not defined.\n"%i)

        if nocol > 1:
                printf("%5cf%d is not function because" %(' ',nocheck))
                printf(" f(%d) is not unique image.\n"%i)

if define1 == 1:
        printf("%5cf%d is well-defined.\n\n"%(' ',nocheck))

stdin.readline()
```

----

pp3-1.dat

```
1 1
2 1
3 1
3 4
6 5
6 6
7 2
7 1
9 9
10 10
```

----

pp3-2.dat

```
1 3
2 4
3 1
4 2
5 6
6 7
7 4
8 3
9 1
10 9
```