

프로그래밍 실습 1

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

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

```
MAXITEM = 10
m = [[0 for col in range(MAXITEM)] for row in range(MAXITEM)]
```

```
printf("입력으로 넣을 관계 행렬의 행의 크기는?\n")
maxvalue = input_enter(1)
printf("\n")
printf("1과 0으로 데이터를 입력하세요?\n")
```

```
list = []
while len(list) < maxvalue*maxvalue:
    list += stdin.readline().split()
```

```
for i in range(1, maxvalue+1):
    for j in range(1, maxvalue+1):
        m[i][j] = int(list[(i-1)*maxvalue + (j-1)])
printf("\n")
```

```
for i in range(1, maxvalue+1):
    for j in range(1, maxvalue+1):
        if m[i][j] == 1:
            for x in range(1, maxvalue+1):
                if m[j][x] == 1:
                    for y in range(1, maxvalue+1):
                        if m[x][y] == 1:
                            printf("(%2d%2d%2d%2d) => (%d..%d)\n" %(i,j,x,y,i,y))
```

```
stdin.readline()
```

프로그래밍 실습 2

```
from __future__ import print_function
from sys import stdin

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

domain = 20

def readfile(fn, adjacency):
    adjacencymx = [[0 for j in range(len(adjacency[0])) for i in range(len(adjacency))]
    fp = open(fn, 'r')
    lines = fp.readlines()
    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)\t\t" %(' ',x,y))
    fp.close()
    return adjacencymx

fn = "pp2-1.dat"
adjacencymx = [[0 for j in range(domain+1)] for i in range(domain+1)]

adjacencymx = readfile(fn, adjacencymx)

printf("\n*****\n\n")

reflexivity = 1

for i in range(1, domain+1):
    if adjacencymx[i][i] == 0:
        reflexivity = 0
        break

if reflexivity == 1:
    printf("%5cR is reflexive relation\n%" ' ')
else:
    printf("%5cR is not reflexive relation\n%" ' ');

symmetry = 1
test = 1

for i in range(1, domain+1):
    for j in range(1, domain+1):
        if adjacencymx[i][j] == 1 and adjacencymx[j][i] == 0:
            symmetry = 0
            test = 0
            break
    if test == 0:
        break

if symmetry ==1:
    printf("%5cR is symmetric relation\n%" ' ')
else:
```

```

printf("%5cR is not symmetric relation\n"%' ')

transitivity = 1
test = 1
for i in range(1, domain+1):
    for j in range(1, domain+1):
        if adjacencymx[i][j] == 1:
            for k in range(1,6):
                if adjacencymx[j][k] == 1 and adjacencymx[i][k] == 0:
                    transitivity = 0
                    test = 0
                    break
            if test == 0:
                break
    if test == 0:
        break

if transitivity == 1:
    printf("%5cR is transitive relation\n"%' ')
else:
    printf("%5cR is not transitive relation\n"%' ')

stdin.readline()

```

pp2-1.dat

1 1
1 3
2 2
2 4
2 5
3 1
3 3
3 5
4 2
4 4
4 7
5 2
5 3
5 5
5 9
6 6
6 15
7 4
7 7
7 20
8 8
8 9
9 5
9 8
9 9
10 10
10 11
11 10
11 11
12 12
12 17
13 13
13 15
14 14
15 6
15 13
15 15
16 16
17 12
17 17
18 18
19 19
20 7
20 20

```
# C 언어 코드에서는 Press Any Key였던 것이 Python의 구현 문제로 Press Enter Key로 변경
from __future__ import print_function
from sys import stdin
```

```
def printf(str, *args):
    print(str % args, end='')
printf("\n          ### How many domain : ")
domain = int(stdin.readline())
Mrs = [[0 for j in range(0, domain)] for i in range(0, domain)]
printf("\n## Input Relation R(1..n) ##\n")
printf("ex) 1 2 (to end : -1 -1)\n")
```

```
while True:
    values = stdin.readline().strip('\n').split()
    i = int(values[0])
    j = int(values[1])
    if i == -1:
        break
    else:
        Mrs[i-1][j-1] = 1
```

```
printf("\n#### Relation Mr ####\n")
for i in range(0, domain):
    for j in range(0, domain):
        printf("%d  %Mrs[i][j]\n")
    printf("\n")
```

```
printf("WtWtWt<<Press Enter Key>>");
stdin.readline()
printf("\n")
```

```

for i in range(0, domain):
    for j in range(i+1, i+domain):
        for k in range(i+1, i+domain):
            m = j%domain
            n = k%domain
            if Mrs[i][n] == 1 and Mrs[m][i] == 1:
                Mrs[m][n] = 1

```

```
printf("#### W%d #### Wn"%(i+1))
for s in range(0, domain):
    for t in range(0, domain):
        printf("%d "%Mrs[s][t])
    printf("Wn")
printf("Wn")
for s in range(0, domain):
    for t in range(0, domain):
        if Mrs[s][t] == 1:
            printf("(%d, %d) " %(s+1,t+1))
printf("Wn")
printf("WtWtWt<<Press Enter Key>>")
stdin.readline()
printf("WnWn")
```

- 5 -