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Slot : Sabtu 07.30

POST TEST 1 PRAKTIKUM KECERDASAN BUATAN

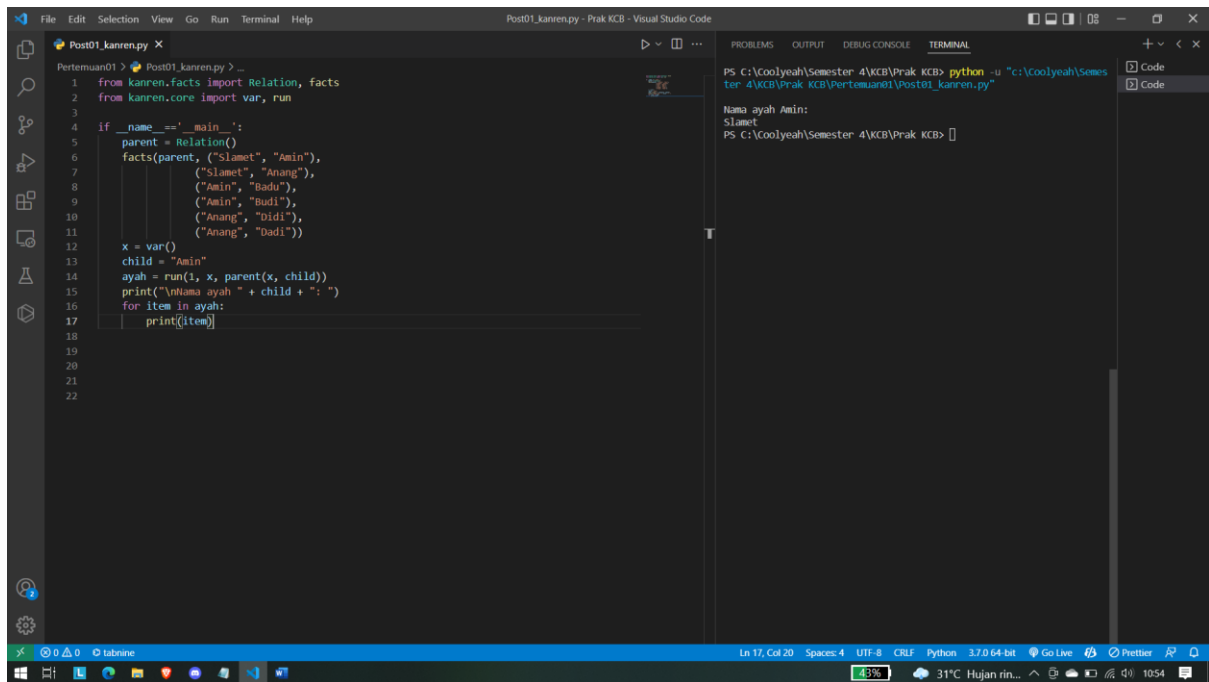
Listing program 1.5

```
from kanren.facts import Relation, facts
from kanren.core import var, run

if __name__=='__main__':
    parent = Relation()
    facts(parent, ("Slamet", "Amin"),
            ("Slamet", "Anang"),
            ("Amin", "Badu"),
            ("Amin", "Budi"),
            ("Anang", "Didi"),
            ("Anang", "Dadi"))

    x = var()
    child = "Amin"
    ayah = run(1, x, parent(x, child))
    print("\nNama ayah " + child + ": ")
    for item in ayah:
        print(item)
```

Hasil run program

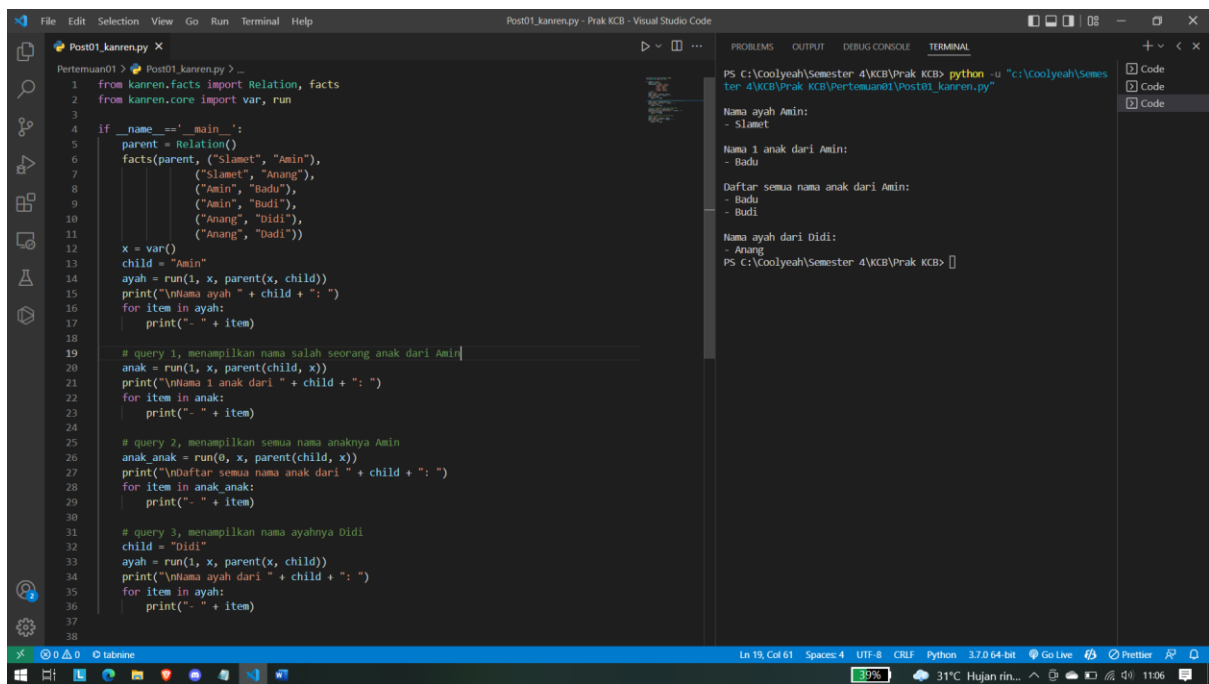


```
1 from kanren.facts import Relation, facts
2 from kanren.core import var, run
3
4 if __name__ == '__main__':
5     parent = Relation()
6     facts(parent, ("Slamet", "Amin"),
7                 ("Slamet", "Anang"),
8                 ("Amin", "Badu"),
9                 ("Amin", "Budi"),
10                ("Anang", "Didi"),
11                ("Anang", "Dadi"))
12
13     x = var()
14     child = "Amin"
15     ayah = run(1, x, parent(x, child))
16     print("\nNama ayah " + child + ": ")
17     for item in ayah:
18         print(item)
```

PS C:\Coolyeh\Semester 4\KCB\Prak KCB> python -u "c:\Coolyeh\Semester 4\KCB\Prak KCB\Pertemuan01\Post01_kanren.py"

Nama ayah Amin:
Slamet

Cobalah minimal 3 query



```
19 # query 1, menampilkan nama salah seorang anak dari Amin
20 anak = run(1, x, parent(child, x))
21 print("\nNama 1 anak dari " + child + ": ")
22 for item in anak:
23     print(item)
24
25 # query 2, menampilkan semua nama anaknya Amin
26 anak_anak = run(0, x, parent(child, x))
27 print("\nDaftar semua nama anak dari " + child + ": ")
28 for item in anak_anak:
29     print(item)
30
31 # query 3, menampilkan nama ayahnya Didi
32 child = "Didi"
33 ayah = run(1, x, parent(x, child))
34 print("\nNama ayah dari " + child + ": ")
35 for item in ayah:
36     print(item)
```

PS C:\Coolyeh\Semester 4\KCB\Prak KCB> python -u "c:\Coolyeh\Semester 4\KCB\Prak KCB\Pertemuan01\Post01_kanren.py"

Nama ayah Amin:
- Slamet

Nama 1 anak dari Amin:
- Badu

Daftar semua nama anak dari Amin:
- Badu
- Budi

Nama ayah dari Didi:
- Anang

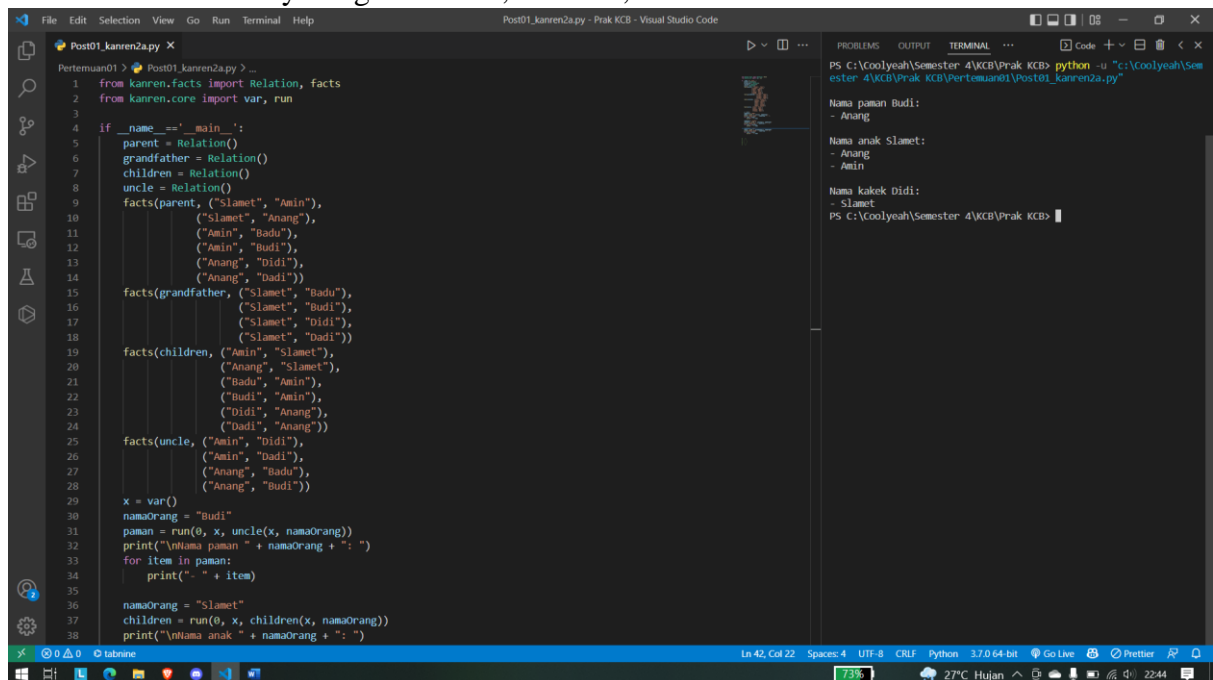
query 1, menampilkan nama salah seorang anak dari Amin

query 2, menampilkan semua nama anaknya Amin

query 3, menampilkan nama ayahnya Didi

Berdasarkan listing 1.5 cobalah kembangkan programnya, bila ditambahkan fakta kakek, anak atau paman dengan dua cara:

- a. Membuat relasi baru yaitu grandfather, children, dan uncle



```
1 from kanren.facts import Relation, facts
2 from kanren.core import var, run
3
4 if __name__ == '__main__':
5     parent = Relation()
6     grandfather = Relation()
7     children = Relation()
8     uncle = Relation()
9     facts(parent, ("Slamet", "Amin"),
10             ("Slamet", "Anang"),
11             ("Amin", "Badu"),
12             ("Amin", "Budi"),
13             ("Anang", "Didi"),
14             ("Anang", "Dadi"))
15     facts(grandfather, ("Slamet", "Badu"),
16            ("Slamet", "Budi"),
17            ("Slamet", "Didi"),
18            ("Slamet", "Dadi"))
19     facts(children, ("Amin", "Slamet"),
20                ("Anang", "Slamet"),
21                ("Badu", "Amin"),
22                ("Budi", "Amin"),
23                ("Didi", "Anang"),
24                ("Dadi", "Anang"))
25     facts(uncle, ("Amin", "Didi"),
26              ("Amin", "Dadi"),
27              ("Anang", "Badu"),
28              ("Anang", "Budi"))
29
30     x = var()
31     namaOrang = "Budi"
32     paman = run(0, x, uncle(x, namaOrang))
33     print("\nNama paman " + namaOrang + ": ")
34     for item in paman:
35         print("- " + item)
36
37     namaOrang = "Slamet"
38     children = run(0, x, children(x, namaOrang))
39     print("\nNama anak " + namaOrang + ": ")
40     for item in children:
41         print("- " + item)
```

PROBLEMS OUTPUT TERMINAL

PS C:\Coolyeah\Semester 4\KCB\Prak KCB> python -u "c:\Coolyeah\Semester 4\KCB\Prak KCB\Pertemuan01\Post01_kanren2a.py"

Nama paman Budi:

- Anang

Nama anak Slamet:

- Anang
- Amin

Nama kakek Didi:

- Slamet

PS C:\Coolyeah\Semester 4\KCB\Prak KCB>

- b. Tanpa membuat relasi baru hanya gunakan relasi parent untuk membentuk relasi lain.
Hint: lihat kembali contoh pada Listing 1.4

Post01_kanren2b.py - Prak KCB - Visual Studio Code

Post01_kanren2b.py

hellooo.py

Post01_kanren2b.py

coba.py

Ln 13, Col 14

Spaces: 4

UTF-8

CRLF

Python

3.7.0 64-bit

Go Live

Prettier

48%

26°C Berawan

23:58

PERTEMUAN01 > Post01_kanren2b.py > get_uncle

1 from kanren.facts import Relation, facts
2 from kanren.core import var, run, conde
3
4 def get_grandfather(gfather, child):
5 x = var()
6 return conde((parent(gfather, x), parent(x, child)))
7
8 def get_children(child, father):
9 return conde([parent(father, child)])
10
11 def get_uncle(uncle, child):
12 x = var()
13 y = var()
14 return conde((parent(y, uncle), parent(y, x), parent(x, child)))
15
16 if __name__ == '__main__':
17 parent = Relation()
18 facts(parent, ("Slamet", "Amin"),
19 ("Slamet", "Anang"),
20 ("Amin", "Badu"),
21 ("Amin", "Budi"),
22 ("Anang", "Didi"),
23 ("Anang", "Dadi"))
24
25 x = var()
26 y = var()
27 z = var()
28 namaOrang = "Dadi"
29 paman = run(0, x, get_uncle(x, namaOrang))
30 paman = [i for i in paman if i != ''].join(run(1,x,parent(x, namaOrang)))
31
32 print("\nNama paman " + namaOrang + ": ")
33 for item in paman:
34 print("- " + item)
35
36 namaOrang = "Anang"
37 anak = run(0, x, get_children(x, namaOrang))
38 print("\nNama anak " + namaOrang + ": ")
39 for item in anak:
40 print("- " + item)
41
42 namaOrang = "Budi"
43 kakek = run(0, x, get_grandfather(x, namaOrang))
44 print("\nNama kakek " + namaOrang + ": ")
45 for item in kakek:
46 print("- " + item)
47
48

PROBLEMS

OUTPUT

TERMINAL

Code

python -u "c:\Cooly\ah\Semester 4\KCB\Prak KCB\Pertemuan01\Post01_kanren2b.py"

Nama paman Dadi:
- Amin

Nama anak Anang:
- Dadi

Nama kakek Budi:
- Slamet
PS C:\Cooly\ah\Semester 4\KCB\Prak KCB>

Post01_kanren2b.py

hellooo.py

Post01_kanren2b.py

coba.py

Ln 23, Col 35

Spaces: 4

UTF-8

CRLF

Python

3.7.0 64-bit

Go Live

Prettier

48%

26°C Berawan

23:58

PERTEMUAN01 > Post01_kanren2b.py > ...

11 def get_uncle(uncle, child):
12 x = var()
13 y = var()
14 return conde((parent(y, uncle), parent(y, x), parent(x, child)))
15
16 if __name__ == '__main__':
17 parent = Relation()
18 facts(parent, ("Slamet", "Amin"),
19 ("Slamet", "Anang"),
20 ("Amin", "Badu"),
21 ("Amin", "Budi"),
22 ("Anang", "Didi"),
23 ("Anang", "Dadi"))
24
25 x = var()
26 y = var()
27 z = var()
28 namaOrang = "Dadi"
29 paman = run(0, x, get_uncle(x, namaOrang))
30 paman = [i for i in paman if i != ''].join(run(1,x,parent(x, namaOrang)))
31
32 print("\nNama paman " + namaOrang + ": ")
33 for item in paman:
34 print("- " + item)
35
36 namaOrang = "Anang"
37 anak = run(0, x, get_children(x, namaOrang))
38 print("\nNama anak " + namaOrang + ": ")
39 for item in anak:
40 print("- " + item)
41
42 namaOrang = "Budi"
43 kakek = run(0, x, get_grandfather(x, namaOrang))
44 print("\nNama kakek " + namaOrang + ": ")
45 for item in kakek:
46 print("- " + item)
47
48

PROBLEMS

OUTPUT

TERMINAL

Code

python -u "c:\Cooly\ah\Semester 4\KCB\Prak KCB\Pertemuan01\Post01_kanren2b.py"

Nama paman Dadi:
- Amin

Nama anak Anang:
- Dadi
- Didi

Nama kakek Budi:
- Slamet
PS C:\Cooly\ah\Semester 4\KCB\Prak KCB>