Laporan Praktikum Algoritma dan Struktur Data

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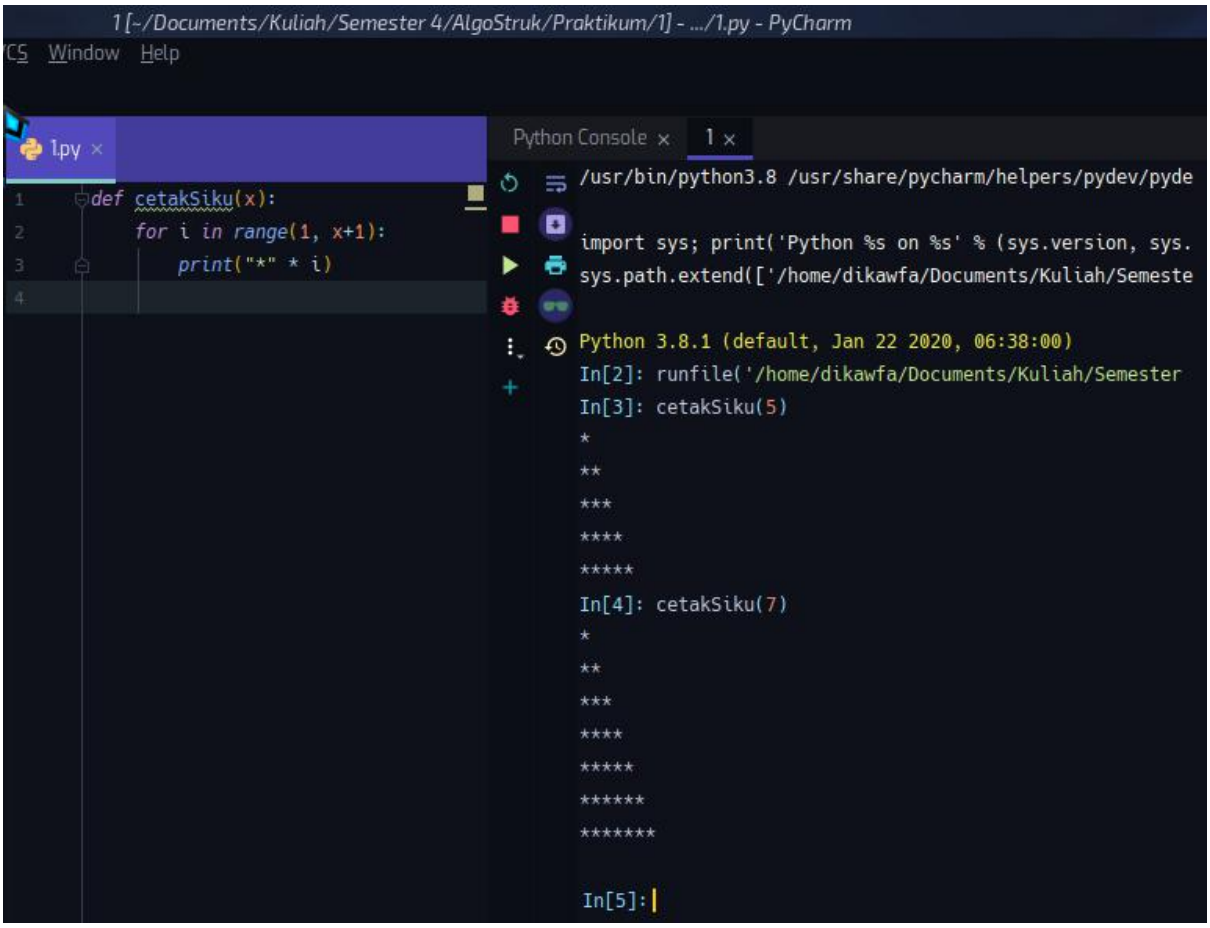
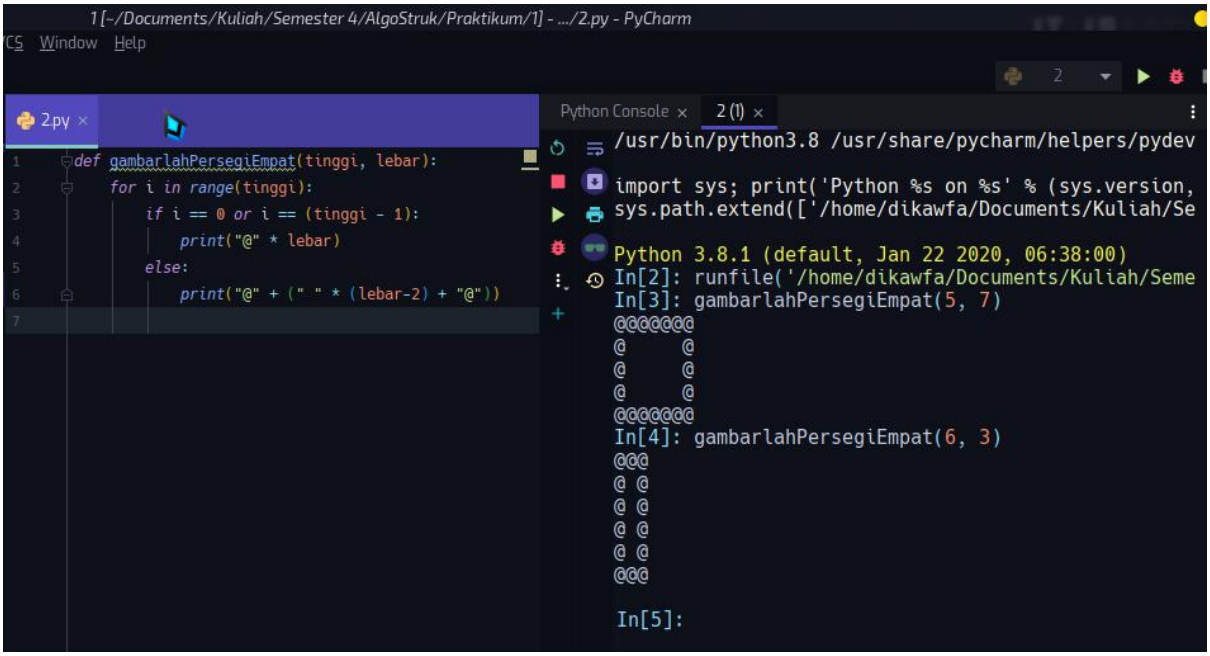
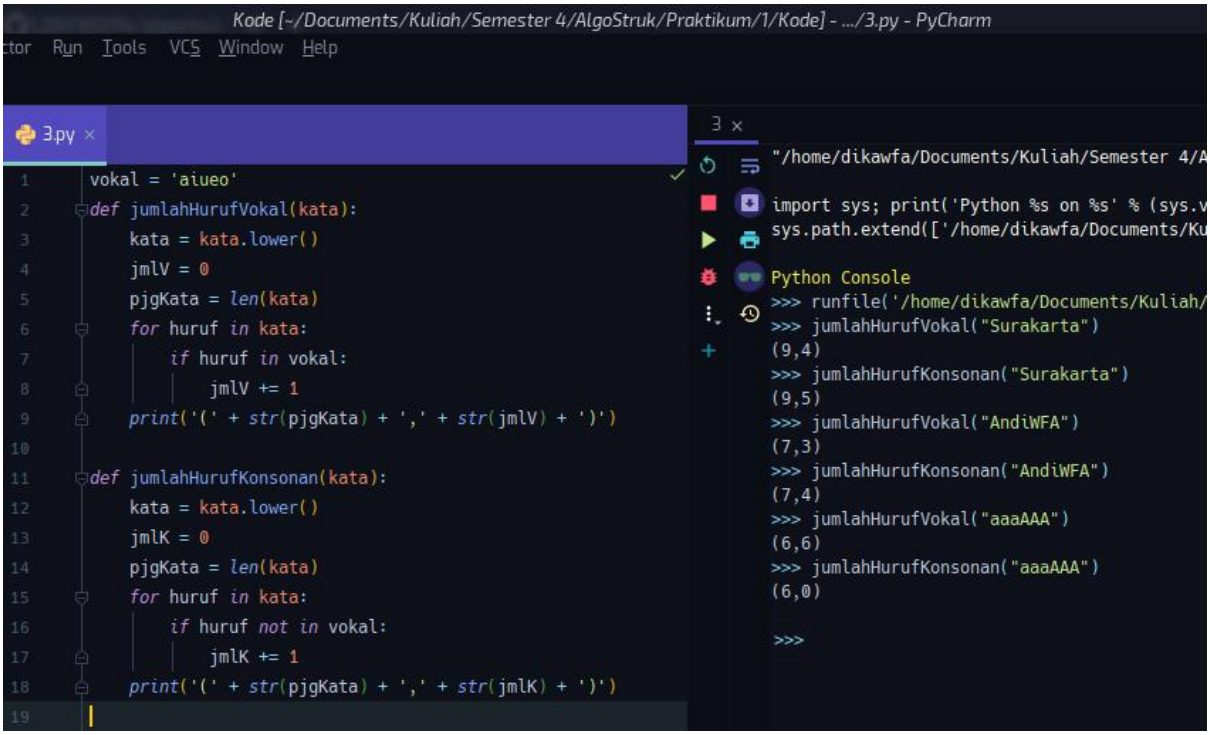
Nama : Andika Wirapala F. A.
Modul : 1

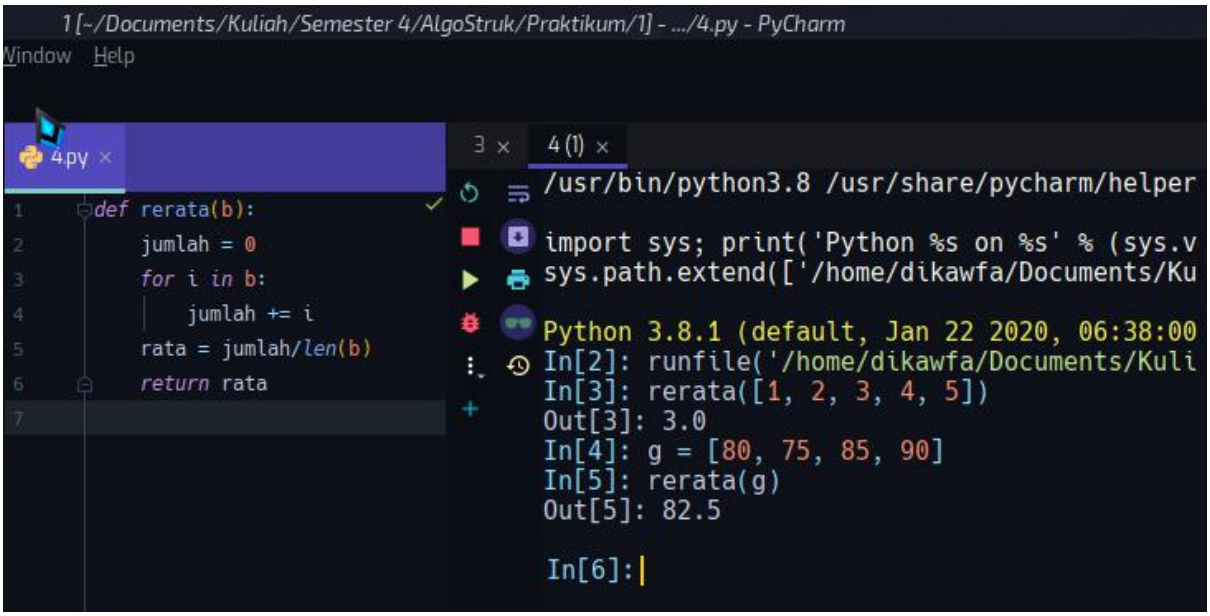
1. 

2. 

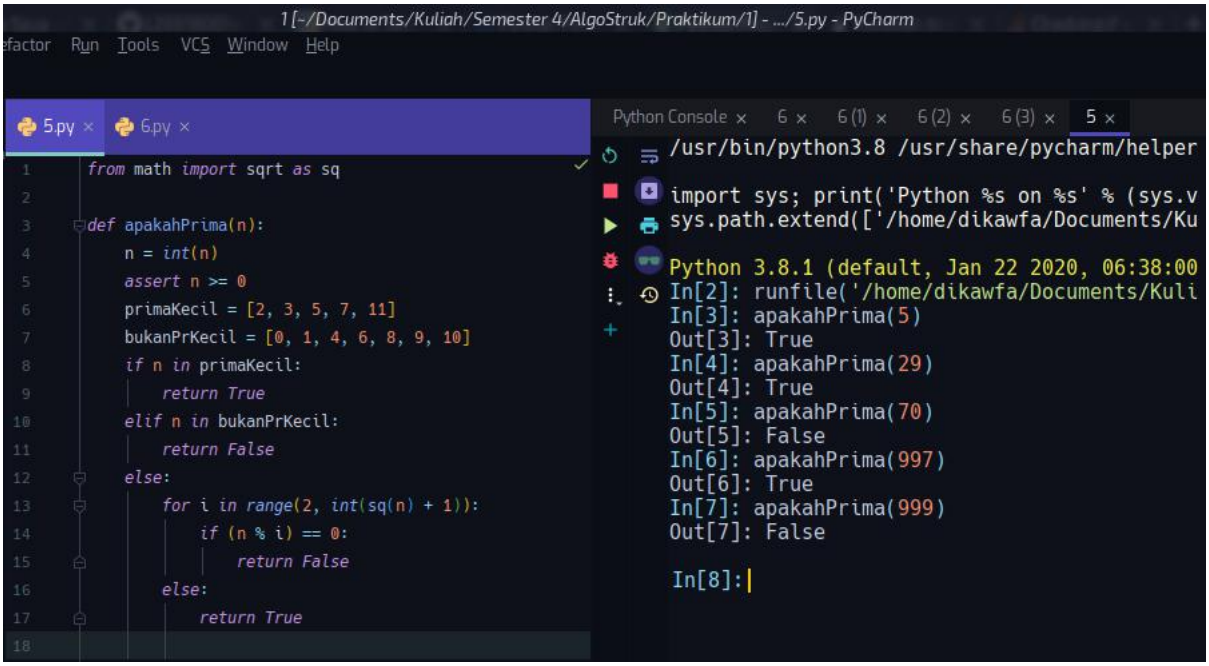
3.


Kode [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1/Kode] - .../3.py - PyCharm
Run Tools VCS Window Help
3.py
vokal = 'aiueo'
def jumlahHurufVokal(kata):
kata = kata.lower()
jmlV = 0
pjgKata = len(kata)
for huruf in kata:
if huruf in vokal:
jmlV += 1
print('(' + str(pjgKata) + ',' + str(jmlV) + ')')
def jumlahHurufKonsonan(kata):
kata = kata.lower()
jmlK = 0
pjgKata = len(kata)
for huruf in kata:
if huruf not in vokal:
jmlK += 1
print('(' + str(pjgKata) + ',' + str(jmlK) + ')')
3 ×
"/home/dikawfa/Documents/Kuliah/Semester 4/A
import sys; print('Python %s on %s' % (sys.v
sys.path.extend(['/home/dikawfa/Documents/Ku
Python Console
>>> runfile('/home/dikawfa/Documents/Kuliah/
>>> jumlahHurufVokal("Surakarta")
(9,4)
>>> jumlahHurufKonsonan("Surakarta")
(9,5)
>>> jumlahHurufVokal("AndiWFA")
(7,3)
>>> jumlahHurufKonsonan("AndiWFA")
(7,4)
>>> jumlahHurufVokal("aaaAAA")
(6,6)
>>> jumlahHurufKonsonan("aaaAAA")
(6,0)
>>>

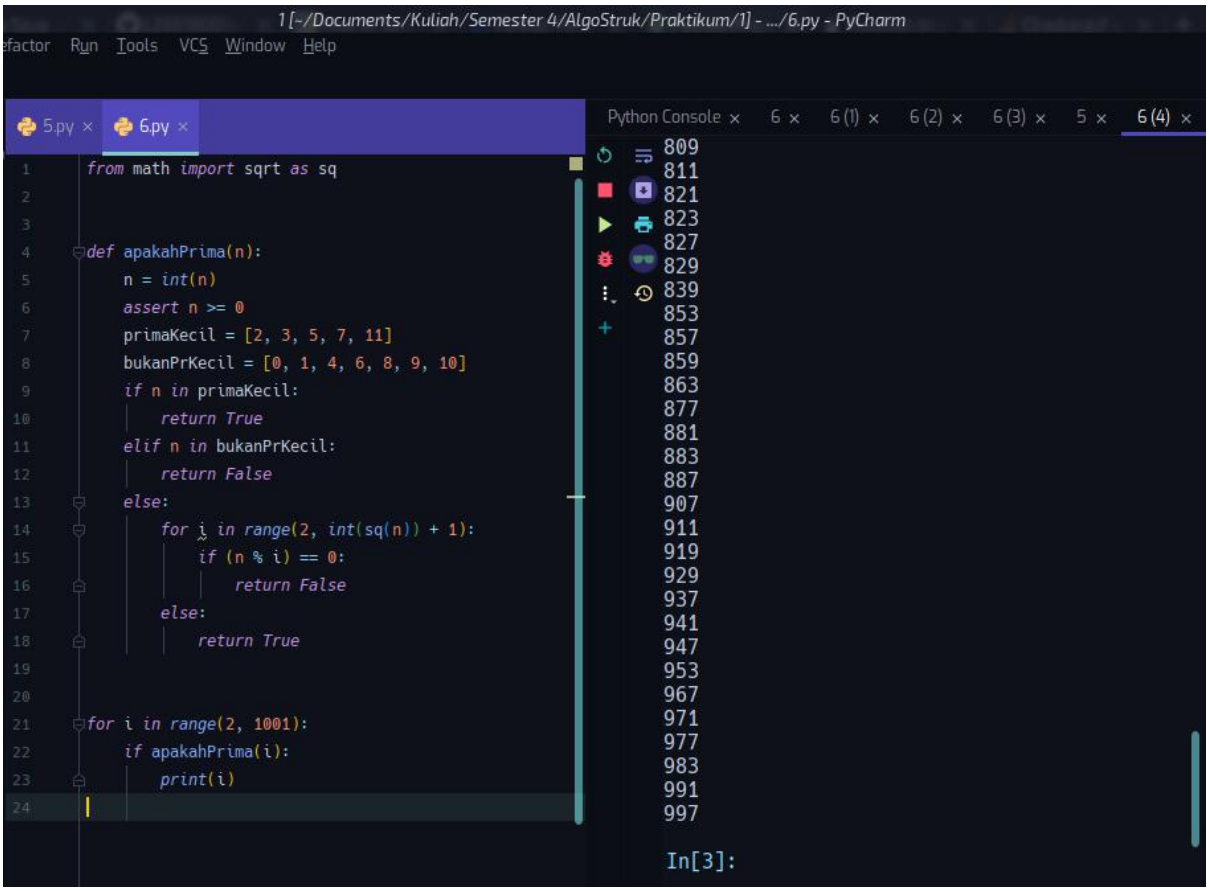
4.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../4.py - PyCharm
Window Help
4.py
def rerata(b):
jumlah = 0
for i in b:
jumlah += i
rata = jumlah/len(b)
return rata
3 × 4 (1) ×
/usr/bin/python3.8 /usr/share/pycharm/helper
import sys; print('Python %s on %s' % (sys.v
sys.path.extend(['/home/dikawfa/Documents/Ku
Python 3.8.1 (default, Jan 22 2020, 06:38:00
In[2]: runfile('/home/dikawfa/Documents/Kuli
In[3]: rerata([1, 2, 3, 4, 5])
Out[3]: 3.0
In[4]: g = [80, 75, 85, 90]
In[5]: rerata(g)
Out[5]: 82.5
In[6]:

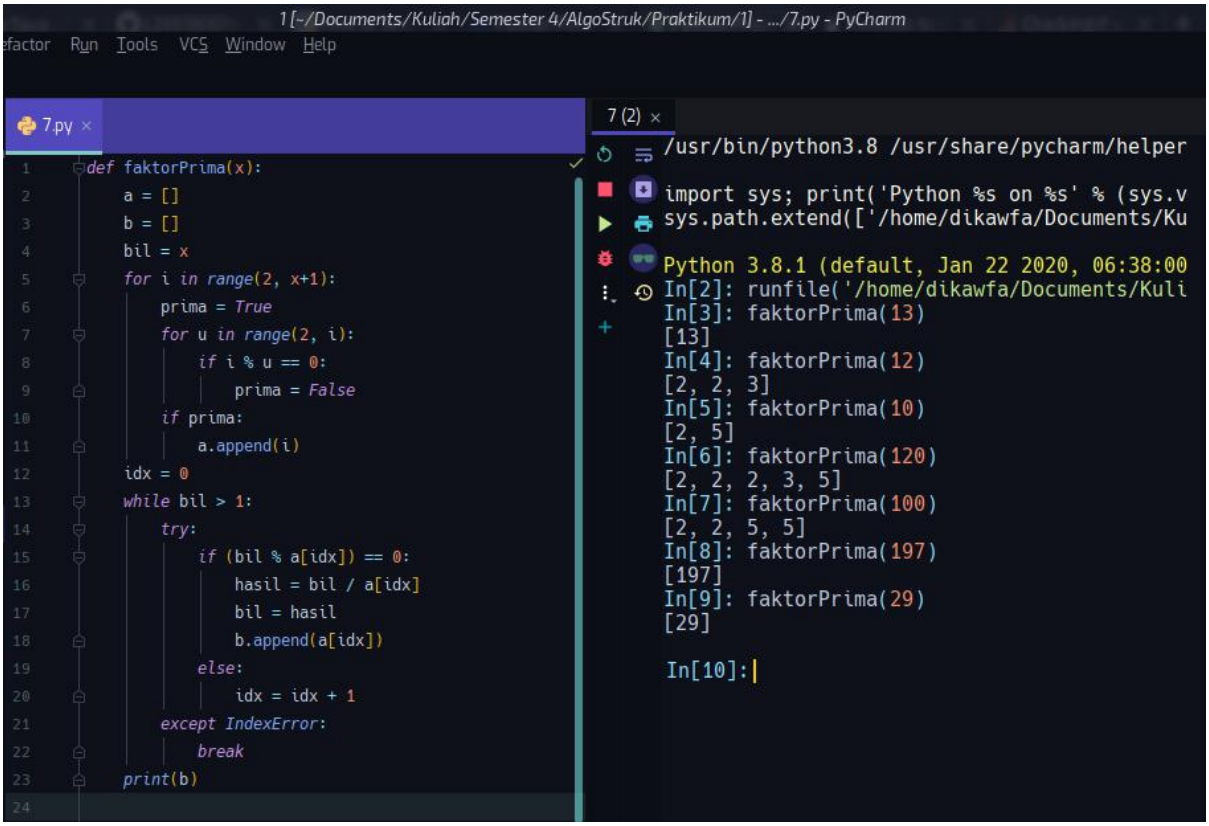
5.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../5.py - PyCharm
efactor Run Tools VCS Window Help
5.py
6.py
from math import sqrt as sq
def apakahPrima(n):
n = int(n)
assert n >= 0
primaKecil = [2, 3, 5, 7, 11]
bukanPrKecil = [0, 1, 4, 6, 8, 9, 10]
if n in primaKecil:
return True
elif n in bukanPrKecil:
return False
else:
for i in range(2, int(sq(n) + 1)):
if (n % i) == 0:
return False
else:
return True
Python Console
6
6 (1)
6 (2)
6 (3)
5
/usr/bin/python3.8 /usr/share/pycharm/helper
import sys; print('Python %s on %s' % (sys.v
sys.path.extend(['/home/dikawfa/Documents/Ku
Python 3.8.1 (default, Jan 22 2020, 06:38:00
In[2]: runfile('/home/dikawfa/Documents/Kuli
In[3]: apakahPrima(5)
Out[3]: True
In[4]: apakahPrima(29)
Out[4]: True
In[5]: apakahPrima(70)
Out[5]: False
In[6]: apakahPrima(997)
Out[6]: True
In[7]: apakahPrima(999)
Out[7]: False
In[8]:

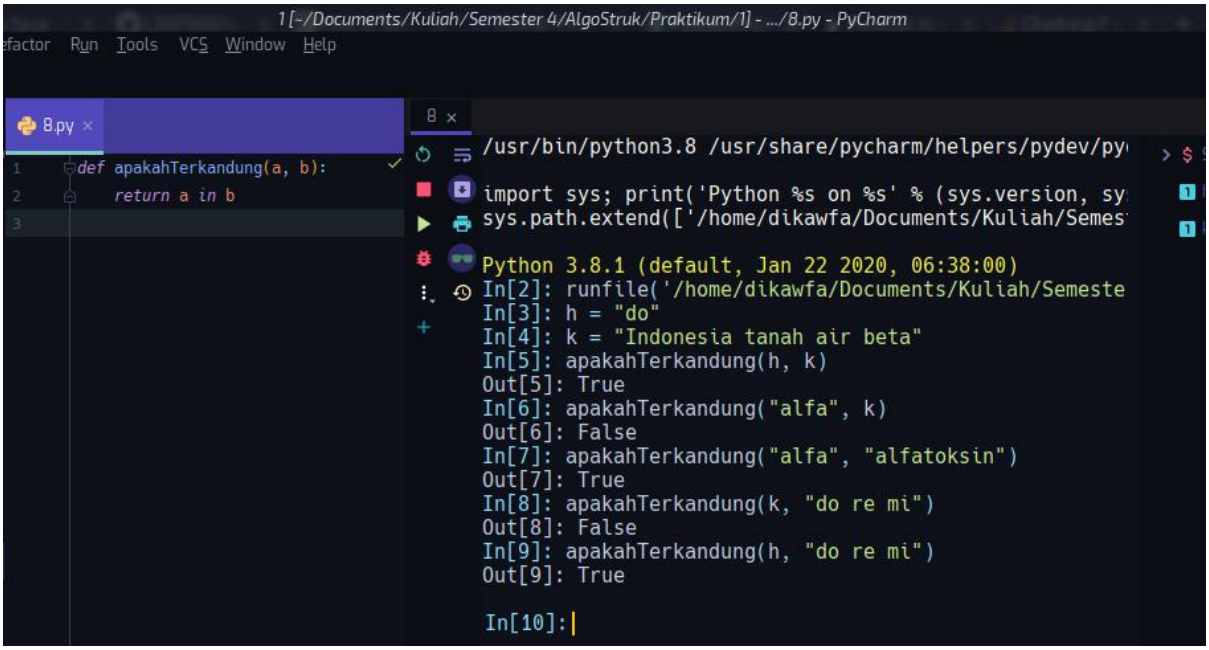
6.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../6.py - PyCharm
efactor Run Tools VCS Window Help
5.py
6.py
from math import sqrt as sq
def apakahPrima(n):
n = int(n)
assert n >= 0
primaKecil = [2, 3, 5, 7, 11]
bukanPrKecil = [0, 1, 4, 6, 8, 9, 10]
if n in primaKecil:
return True
elif n in bukanPrKecil:
return False
else:
for i in range(2, int(sq(n)) + 1):
if (n % i) == 0:
return False
else:
return True
for i in range(2, 1001):
if apakahPrima(i):
print(i)
Python Console
6
6 (1)
6 (2)
6 (3)
5
6 (4)
809
811
821
823
827
829
839
853
857
859
863
877
881
883
887
907
911
919
929
937
941
947
953
967
971
977
983
991
997
In[3]:

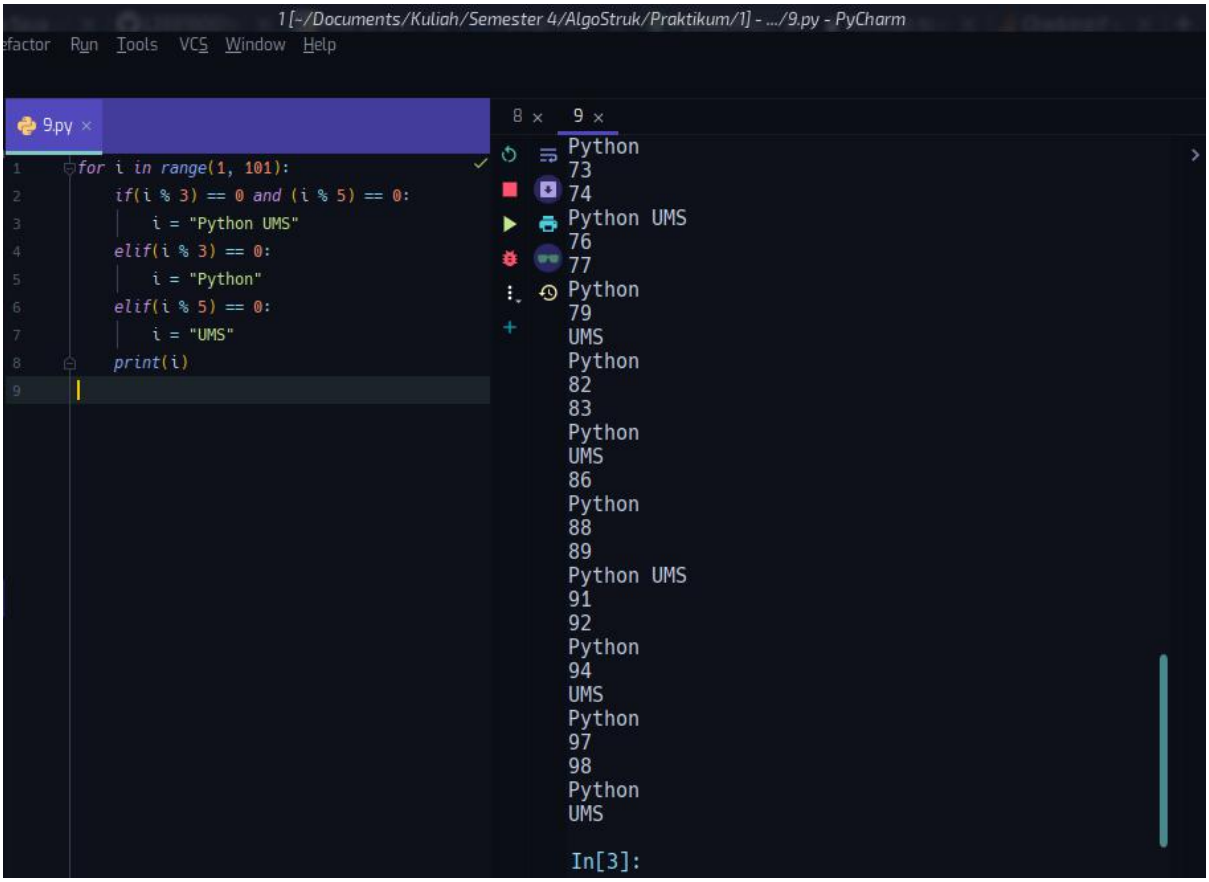
7.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../7.py - PyCharm
efactor Run Tools VCS Window Help
7.py
def faktorPrima(x):
a = []
b = []
bil = x
for i in range(2, x+1):
prima = True
for u in range(2, i):
if i % u == 0:
prima = False
if prima:
a.append(i)
idx = 0
while bil > 1:
try:
if (bil % a[idx]) == 0:
hasil = bil / a[idx]
bil = hasil
b.append(a[idx])
else:
idx = idx + 1
except IndexError:
break
print(b)
7 (2)
/usr/bin/python3.8 /usr/share/pycharm/helper
import sys; print('Python %s on %s' % (sys.v
sys.path.extend(['/home/dikawfa/Documents/Ku
Python 3.8.1 (default, Jan 22 2020, 06:38:00
In[2]: runfile('/home/dikawfa/Documents/Kuli
In[3]: faktorPrima(13)
[13]
In[4]: faktorPrima(12)
[2, 2, 3]
In[5]: faktorPrima(10)
[2, 5]
In[6]: faktorPrima(120)
[2, 2, 2, 3, 5]
In[7]: faktorPrima(100)
[2, 2, 5, 5]
In[8]: faktorPrima(197)
[197]
In[9]: faktorPrima(29)
[29]
In[10]:

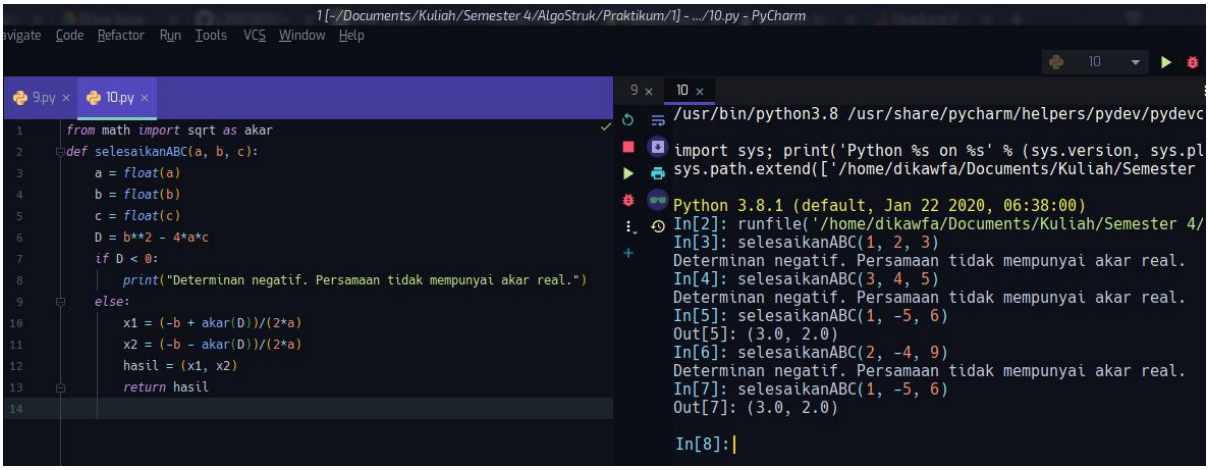
8.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../8.py - PyCharm
efactor Run Tools VCS Window Help
8.py
def apakahTerkandung(a, b):
return a in b
8
/usr/bin/python3.8 /usr/share/pycharm/helpers/pydev/py
import sys; print('Python %s on %s' % (sys.version, sy
sys.path.extend(['/home/dikawfa/Documents/Kuliah/Semes
Python 3.8.1 (default, Jan 22 2020, 06:38:00)
In[2]: runfile('/home/dikawfa/Documents/Kuliah/Semeste
In[3]: h = "do"
In[4]: k = "Indonesia tanah air beta"
In[5]: apakahTerkandung(h, k)
Out[5]: True
In[6]: apakahTerkandung("alfa", k)
Out[6]: False
In[7]: apakahTerkandung("alfa", "alfatoksin")
Out[7]: True
In[8]: apakahTerkandung(k, "do re mi")
Out[8]: False
In[9]: apakahTerkandung(h, "do re mi")
Out[9]: True
In[10]:

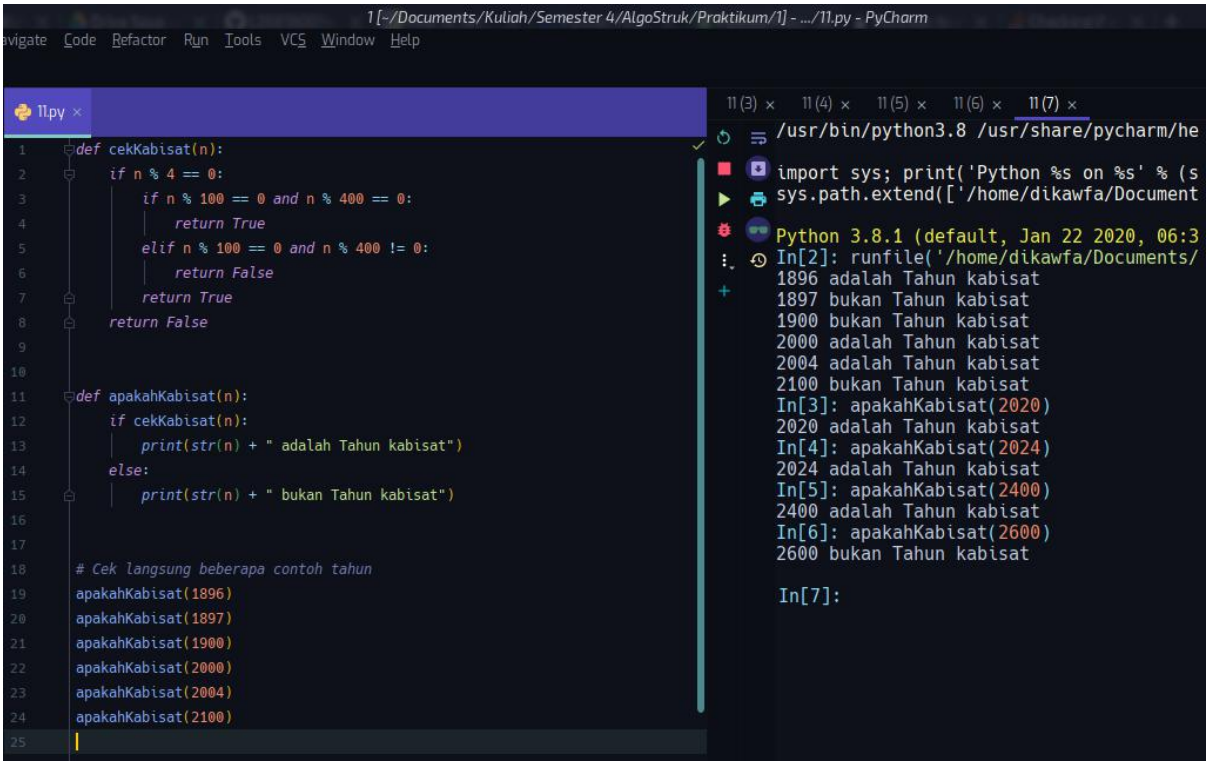
9.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../9.py - PyCharm
efactor Run Tools VCS Window Help
9.py
for i in range(1, 101):
if(i % 3) == 0 and (i % 5) == 0:
i = "Python UMS"
elif(i % 3) == 0:
i = "Python"
elif(i % 5) == 0:
i = "UMS"
print(i)
8 × 9 ×
Python
73
74
Python UMS
76
77
Python
79
UMS
Python
82
83
Python
UMS
86
Python
88
89
Python UMS
91
92
Python
94
UMS
Python
97
98
Python
UMS
In[3]:

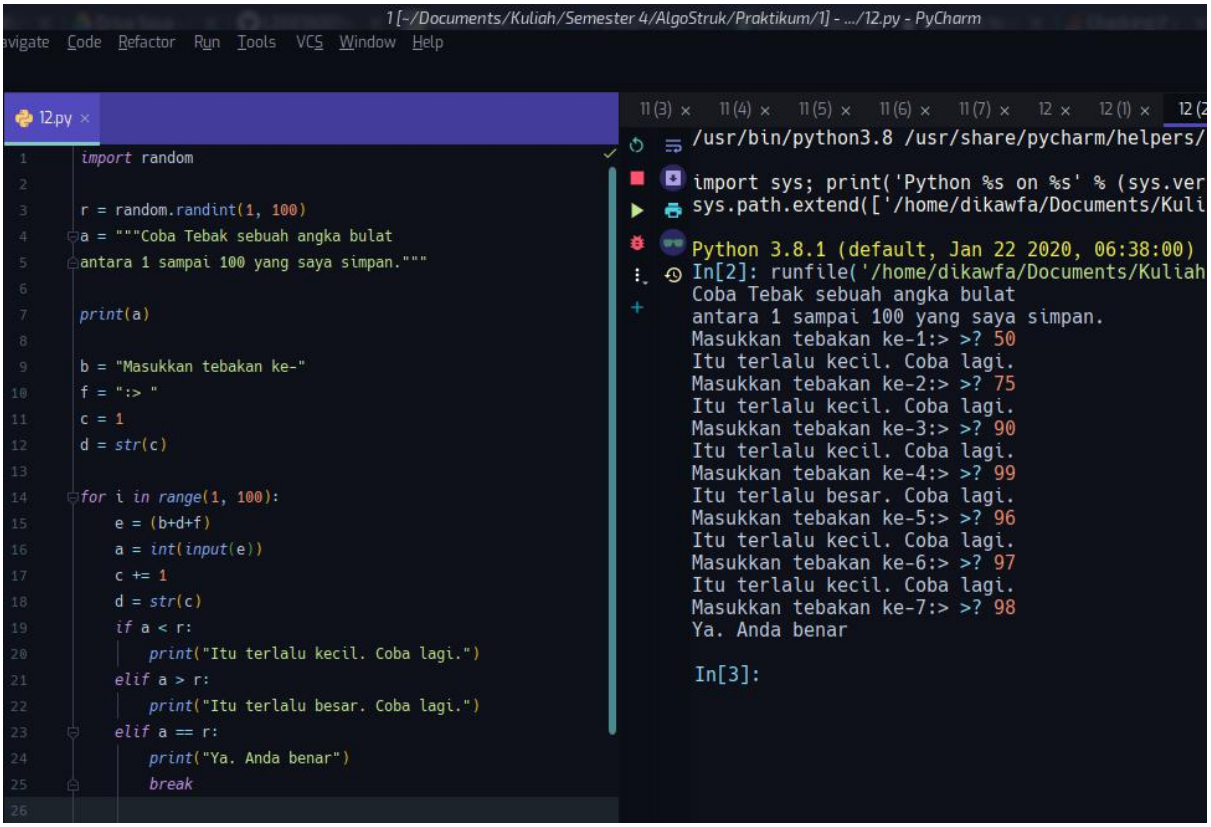
10.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../10.py - PyCharm
vigate Code Refactor Run Tools VCS Window Help
9.py 10.py
from math import sqrt as akar
def selesaikanABC(a, b, c):
a = float(a)
b = float(b)
c = float(c)
D = b**2 - 4*a*c
if D < 0:
print("Determinan negatif. Persamaan tidak mempunyai akar real.")
else:
x1 = (-b + akar(D))/(2*a)
x2 = (-b - akar(D))/(2*a)
hasil = (x1, x2)
return hasil
9 × 10 ×
/usr/bin/python3.8 /usr/share/pycharm/helpers/pydev/pydevc
import sys; print('Python %s on %s' % (sys.version, sys.pl
sys.path.extend(['/home/dikawfa/Documents/Kuliah/Semester
Python 3.8.1 (default, Jan 22 2020, 06:38:00)
In[2]: runfile('/home/dikawfa/Documents/Kuliah/Semester 4/
In[3]: selesaikanABC(1, 2, 3)
Determinan negatif. Persamaan tidak mempunyai akar real.
In[4]: selesaikanABC(3, 4, 5)
Determinan negatif. Persamaan tidak mempunyai akar real.
In[5]: selesaikanABC(1, -5, 6)
Out[5]: (3.0, 2.0)
In[6]: selesaikanABC(2, -4, 9)
Determinan negatif. Persamaan tidak mempunyai akar real.
In[7]: selesaikanABC(1, -5, 6)
Out[7]: (3.0, 2.0)
In[8]:

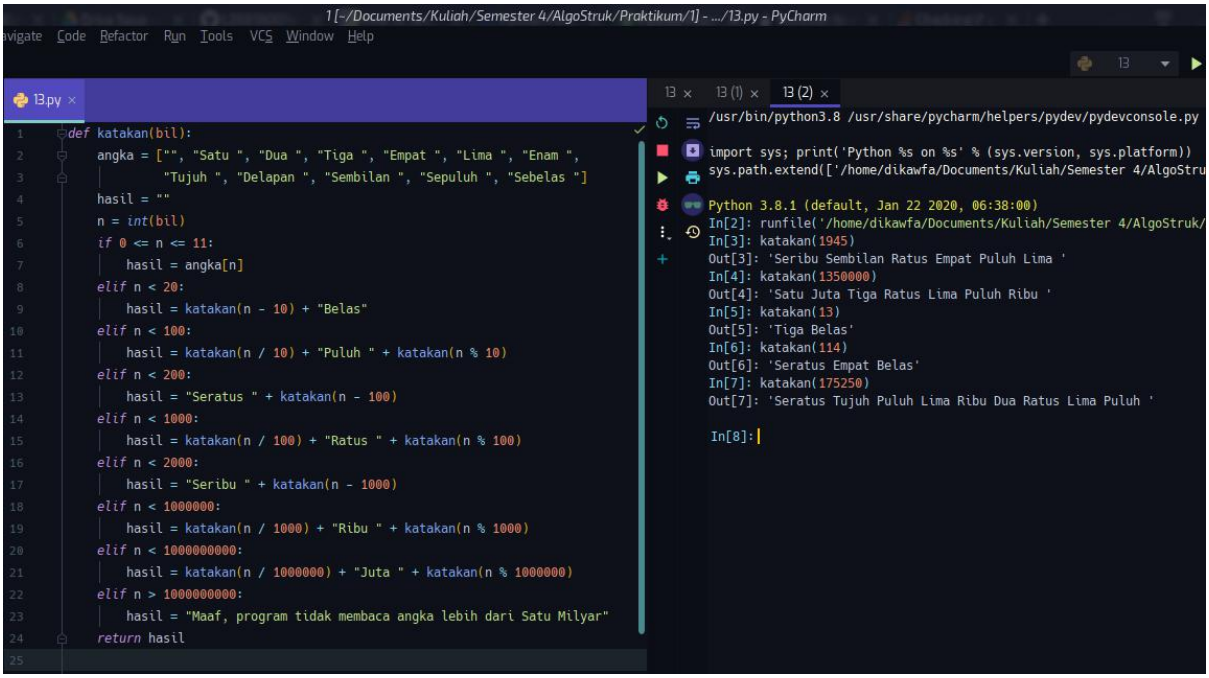
11.


1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../11.py - PyCharm
Navigate Code Refactor Run Tools VCS Window Help
11.py
def cekKabisat(n):
if n % 4 == 0:
if n % 100 == 0 and n % 400 == 0:
return True
elif n % 100 == 0 and n % 400 != 0:
return False
return True
return False
def apakahKabisat(n):
if cekKabisat(n):
print(str(n) + " adalah Tahun kabisat")
else:
print(str(n) + " bukan Tahun kabisat")
# Cek langsung beberapa contoh tahun
apakahKabisat(1896)
apakahKabisat(1897)
apakahKabisat(1900)
apakahKabisat(2000)
apakahKabisat(2004)
apakahKabisat(2100)
11 (3) 11 (4) 11 (5) 11 (6) 11 (7)
/usr/bin/python3.8 /usr/share/pycharm/he
import sys; print('Python %s on %s' % (s
sys.path.extend(['/home/dikawfa/Document
Python 3.8.1 (default, Jan 22 2020, 06:3
In[2]: runfile('/home/dikawfa/Documents/
1896 adalah Tahun kabisat
1897 bukan Tahun kabisat
1900 bukan Tahun kabisat
2000 adalah Tahun kabisat
2004 adalah Tahun kabisat
2100 bukan Tahun kabisat
In[3]: apakahKabisat(2020)
2020 adalah Tahun kabisat
In[4]: apakahKabisat(2024)
2024 adalah Tahun kabisat
In[5]: apakahKabisat(2400)
2400 adalah Tahun kabisat
In[6]: apakahKabisat(2600)
2600 bukan Tahun kabisat
In[7]:

12.

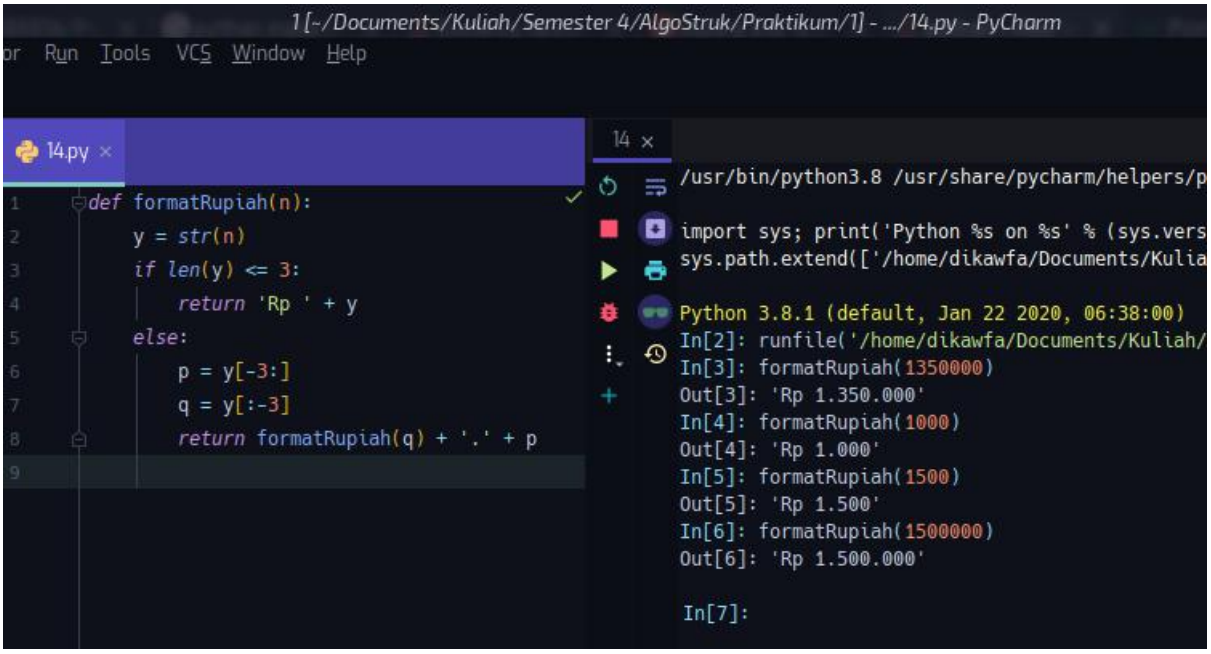

1 [~/Documents/Kuliah/Semester 4/AlgoStruk/Praktikum/1] - .../12.py - PyCharm
Navigate Code Refactor Run Tools VCS Window Help
12.py
import random
r = random.randint(1, 100)
a = """Coba Tebak sebuah angka bulat
antara 1 sampai 100 yang saya simpan."""
print(a)
b = "Masukkan tebakan ke-"
f = ":> "
c = 1
d = str(c)
for i in range(1, 100):
e = (b+d+f)
a = int(input(e))
c += 1
d = str(c)
if a < r:
print("Itu terlalu kecil. Coba lagi.")
elif a > r:
print("Itu terlalu besar. Coba lagi.")
elif a == r:
print("Ya. Anda benar")
break
11 (3) 11 (4) 11 (5) 11 (6) 11 (7) 12 12 (1)
/usr/bin/python3.8 /usr/share/pycharm/helpers/
import sys; print('Python %s on %s' % (sys.ver
sys.path.extend(['/home/dikawfa/Documents/Kuli
Python 3.8.1 (default, Jan 22 2020, 06:38:00)
In[2]: runfile('/home/dikawfa/Documents/Kuliah
Coba Tebak sebuah angka bulat
antara 1 sampai 100 yang saya simpan.
Masukkan tebakan ke-1:> >? 50
Itu terlalu kecil. Coba lagi.
Masukkan tebakan ke-2:> >? 75
Itu terlalu kecil. Coba lagi.
Masukkan tebakan ke-3:> >? 90
Itu terlalu kecil. Coba lagi.
Masukkan tebakan ke-4:> >? 99
Itu terlalu besar. Coba lagi.
Masukkan tebakan ke-5:> >? 96
Itu terlalu kecil. Coba lagi.
Masukkan tebakan ke-6:> >? 97
Itu terlalu kecil. Coba lagi.
Masukkan tebakan ke-7:> >? 98
Ya. Anda benar
In[3]:

13.




```python
def katakan(bil):
    angka = ["", "Satu ", "Dua ", "Tiga ", "Empat ", "Lima ", "Enam ",
             "Tujuh ", "Delapan ", "Sembilan ", "Sepuluh ", "Sebelas "]
    hasil = ""
    n = int(bil)
    if 0 <= n <= 11:
        hasil = angka[n]
    elif n < 20:
        hasil = katakan(n - 10) + "Belas"
    elif n < 100:
        hasil = katakan(n / 10) + "Puluh " + katakan(n % 10)
    elif n < 200:
        hasil = "Seratus " + katakan(n - 100)
    elif n < 1000:
        hasil = katakan(n / 100) + "Ratus " + katakan(n % 100)
    elif n < 2000:
        hasil = "Seribu " + katakan(n - 1000)
    elif n < 1000000:
        hasil = katakan(n / 1000) + "Ribu " + katakan(n % 1000)
    elif n < 1000000000:
        hasil = katakan(n / 1000000) + "Juta " + katakan(n % 1000000)
    elif n > 1000000000:
        hasil = "Maaf, program tidak membaca angka lebih dari Satu Milyar"
    return hasil
```

14.




```python
def formatRupiah(n):
    y = str(n)
    if len(y) <= 3:
        return 'Rp ' + y
    else:
        p = y[-3:]
        q = y[:-3]
        return formatRupiah(q) + '.' + p
```