

Laporan Tugas Kecil 2 Strategi Algoritma IF2211

Pendekatan Algoritma *Decrease and Conquer* pada permasalahan Penyusunan Rencana Kuliah

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I. Pendahuluan

a. *Topological Sorting*

Topological Sorting adalah suatu permasalahan sorting dimana suatu *directed graph* perlu diurutkan pada urutan linier dimana semua arah mengarah pada satu ujung. Salah satu contoh *Topological Sorting* adalah urutan menggunakan pakaian, dan pada tugas ini adalah urutan pengambilan mata kuliah.

Solusi yang saya implementasikan adalah menggunakan algoritma *decrease and conquer* pada permasalahan ini dengan menghilangkan(decrease) mata kuliah yang sudah diambil lalu melakukan lagi program yang sama sampai semua mata kuliah diambil(conquer).

b. Algoritma *Decrease and Conquer*

Decrease and Conquer adalah suatu algoritma yang kerjanya mirip dengan *divide and conquer*, dimana perbedaannya adalah dimana *divide and conquer* mendekomposisi suatu permasalahan menjadi beberapa masalah yang lebih kecil, *Decrease and Conquer* mengurangi masalah menjadi satu masalah yang lebih kecil.

II. Source Code

a. Source Code

```

1  """
2  Nama : Ronggur Mahendra Widya Putra
3  NIM : 13519008
4  """
5  from toromawi_13519008 import *
6  from writefile_13519008 import *
7  from deleteAllElmt_13519008 import *
8  from fileinput_13519008 import *
9  global Result
10
11 filein = input("Masukan Nama File Masukan: ")
12 arr = inputfile(filein) # mengambil masukan file
13 Result = []
14
15 while(len(arr)> 0):
16     i = 0
17     tobeiterated = [] # inialisasi array tobeiterated
18     found = False
19     while(i < len(arr)):
20
21         if(len(arr[i]) == 1): #cari kelas yang semua kelas preqnya sudah terpenuhi
22             tobeiterated.append(arr.pop(i)[0])
23             found = True
24         else:
25             i = i+1
26             if(not(found)): #solusi tidak ada karena ada kasus dimana kelas tidak mungkin diambil
27                 break
28             for j in range(len(tobeiterated)):
29                 arr = deleteAllElmt(arr,tobeiterated[j]) #hilangkan kelas yang sudah diambil
30             Result.append(tobeiterated)
31             #print("tobeiterated = ",tobeiterated)
32             #print("arr = ", arr)
33 #membuat output
34 stringout = ''
35 if(found):
36     for i in range(len(Result)):
37         temp = ''
38         for j in range(len(Result[i])):
39             temp += Result[i][j]
40             if(j != len(Result[i])-1):
41                 temp += ','
42         print("semester",toromawi(i+1), ":",temp)
43         stringout += "semester "
44         stringout += toromawi(i+1)
45         stringout += " : "
46         stringout += temp
47         stringout += '\n'
48 else: #solusi tidak ditemukan
49     stringout += 'solution not found'
50     print(stringout)
51 fileout = input("Masukan Nama File Keluaran: ")
52 writefile(fileout,stringout) #write file
53

```

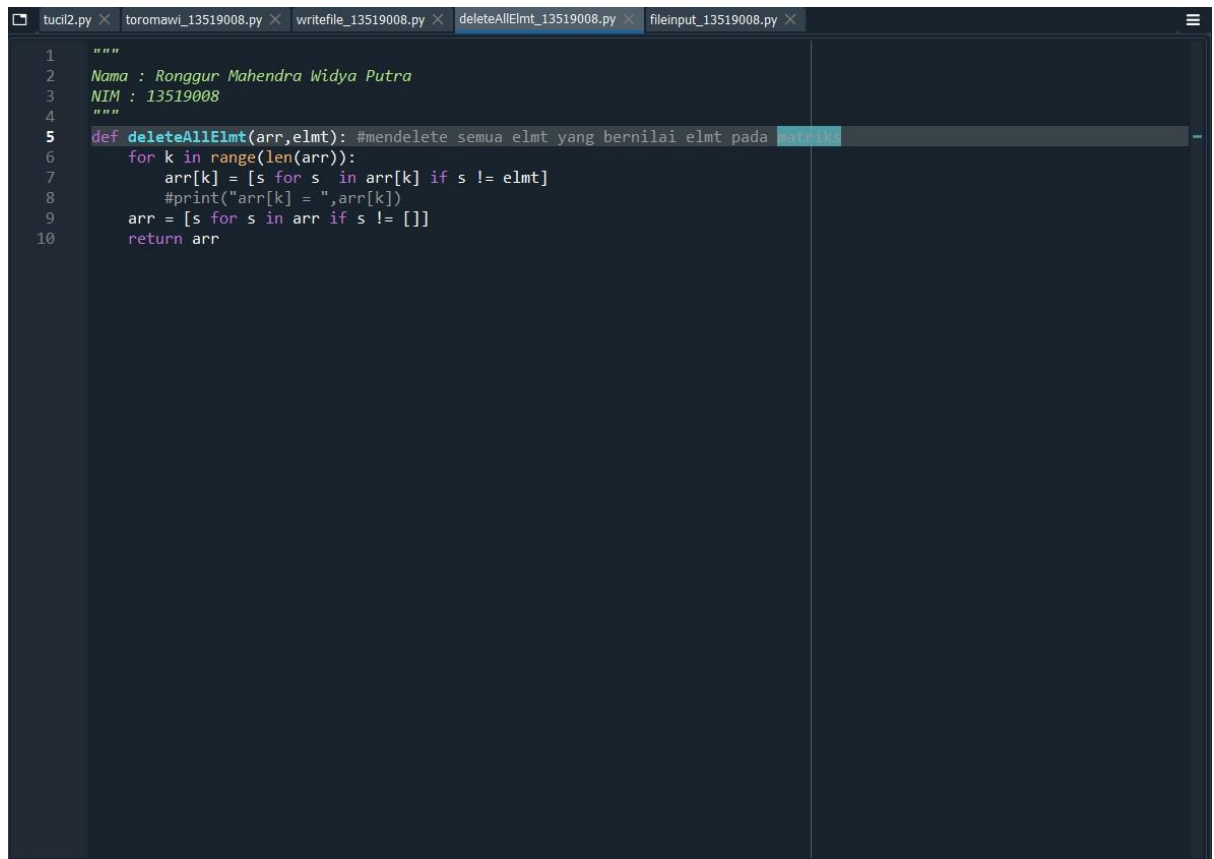
Gambar 2.1 ScreenShot Source Code main_13519008.py

```
tucil2.py x toromawi_13519008.py x writefile_13519008.py x deleteAllElmt_13519008.py x fileinput_13519008.py x
1  """
2  Nama : Ronggur Mahendra Widya Putra
3  NIM : 13519008
4  """
5  def toromawi(decimal):# fungsi untuk konvesrsi int to romawi
6      result = ''
7      arab = [1,4,5,9,10,40,50,90,100,400,500,900,1000]
8      roma = ['I','IV','V','IX','X','XL','L','XC','C','CD','D','CM','M']
9      i = 12 #mulai dari angka paling besar 'M'
10     while (decimal > 0):
11         temp = decimal // arab[i] #div in dengan 1000
12         decimal %= arab[i] #mod dengan 1000
13
14         while(temp > 0):
15             result += roma[i] #tuliskan hasilnya
16             temp = temp -1
17             i = i-1
18     return result
```

Gambar 2.2 ScreenShot Source Code toromawi_13519008.py

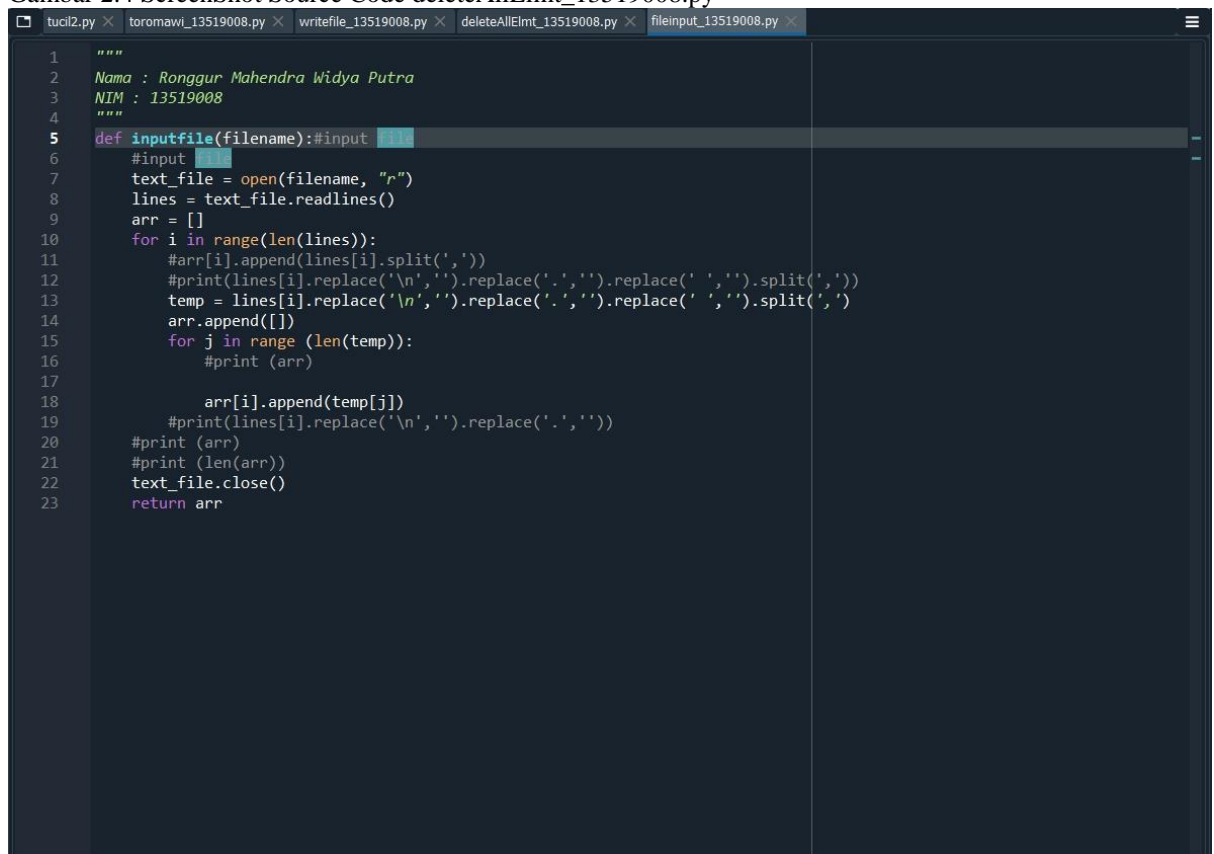
```
tucil2.py x toromawi_13519008.py x writefile_13519008.py x deleteAllElmt_13519008.py x fileinput_13519008.py x
1  """
2  Nama : Ronggur Mahendra Widya Putra
3  NIM : 13519008
4  """
5  def writefile(fileout,stringout): #write file
6      f = open(fileout, "w")
7      f.write(stringout)
8      f.close()
```

Gambar 2.3 ScreenShot Source Code writefile_13519008.py



```
1 """
2 Nama : Ronggur Mahendra Widya Putra
3 NIM : 13519008
4 """
5 def deleteAllElmt(arr,elmt): #mendelete semua elmt yang bernilai elmt pada
6     for k in range(len(arr)):
7         arr[k] = [s for s in arr[k] if s != elmt]
8         #print("arr[k] = ",arr[k])
9     arr = [s for s in arr if s != []]
10    return arr
```

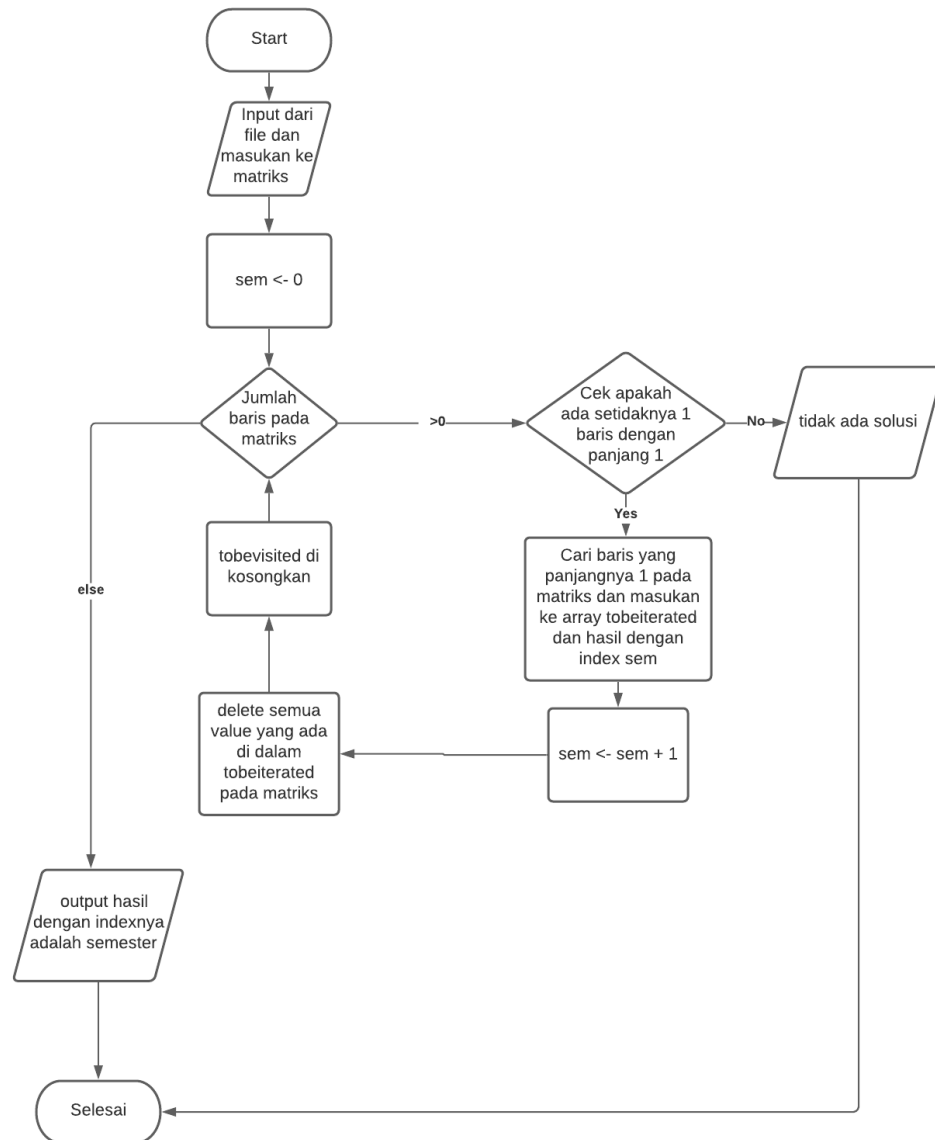
Gambar 2.4 ScreenShot Source Code deleteAllElmt_13519008.py



```
1 """
2 Nama : Ronggur Mahendra Widya Putra
3 NIM : 13519008
4 """
5 def inputfile(filename):#input
6     #input
7     text_file = open(filename, "r")
8     lines = text_file.readlines()
9     arr = []
10    for i in range(len(lines)):
11        #arr[i].append(lines[i].split(','))
12        #print(lines[i].replace('\n','').replace('.', '').replace(' ', '').split(','))
13        temp = lines[i].replace('\n','').replace('.', '').replace(' ', '').split(',')
14        arr.append(temp)
15    for j in range (len(temp)):
16        #print (arr)
17
18        arr[i].append(temp[j])
19        #print(lines[i].replace('\n','').replace('.', ''))
20    #print (arr)
21    #print (len(arr))
22    text_file.close()
23    return arr
```

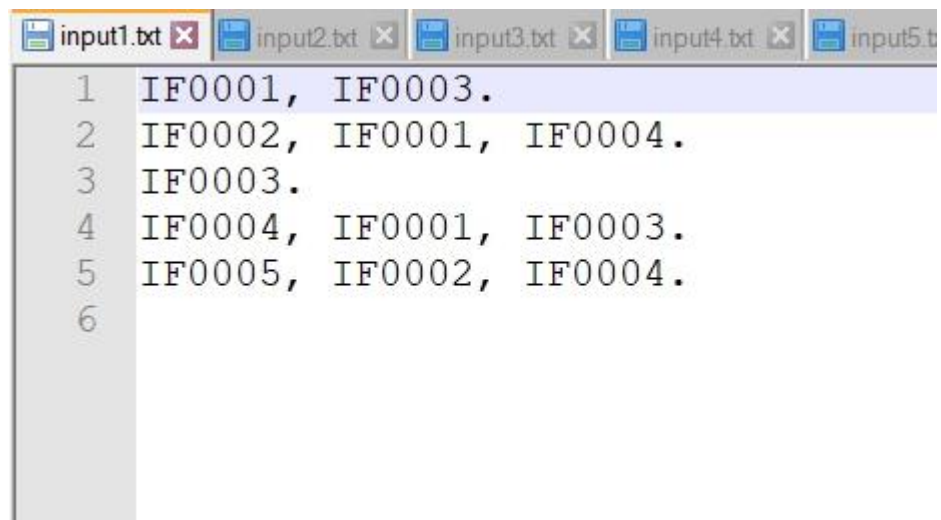
Gambar 2.5 ScreenShot Source Code fileinput_13519008.py

b. Cara Kerja



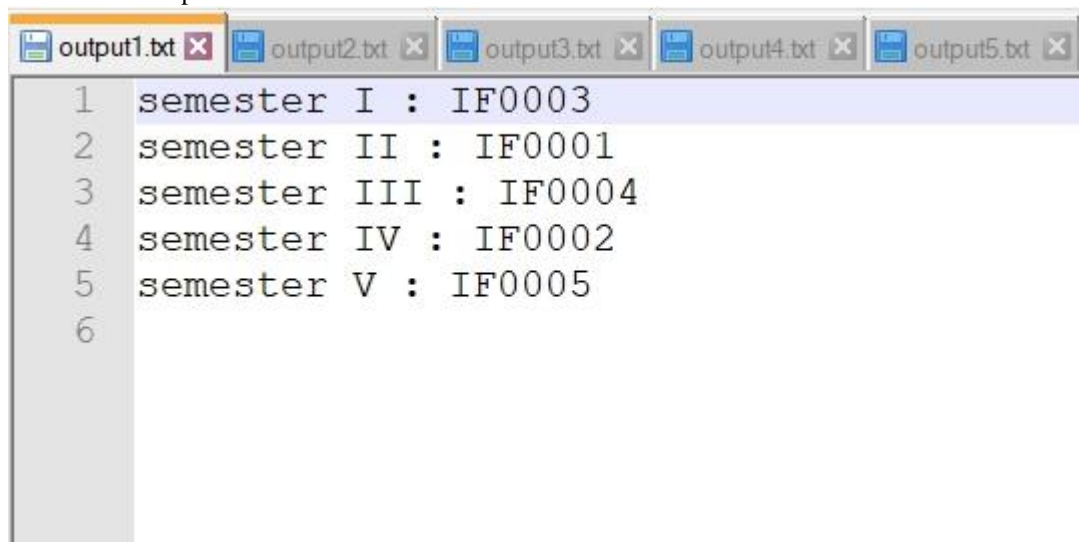
Gambar 2.6 Flowchart cara kerja program

III. Contoh Input dan Output
1. Input 1



```
input1.txt x input2.txt x input3.txt x input4.txt x input5.t
1 IF0001, IF0003.
2 IF0002, IF0001, IF0004.
3 IF0003.
4 IF0004, IF0001, IF0003.
5 IF0005, IF0002, IF0004.
6
```

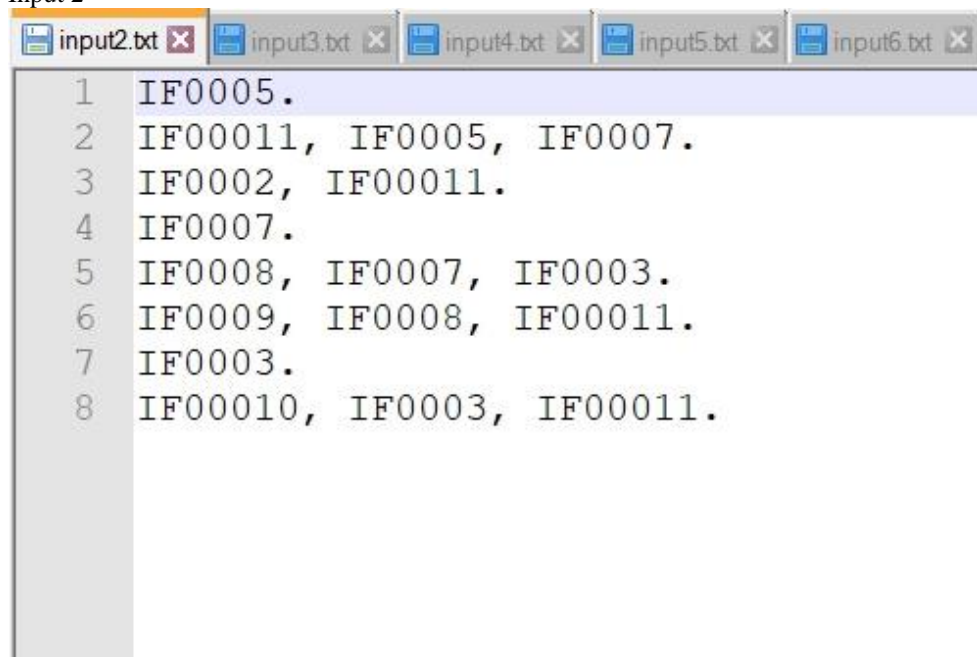
Gambar 3.1.1 input1.txt



```
output1.txt x output2.txt x output3.txt x output4.txt x output5.txt x
1 semester I : IF0003
2 semester II : IF0001
3 semester III : IF0004
4 semester IV : IF0002
5 semester V : IF0005
6
```

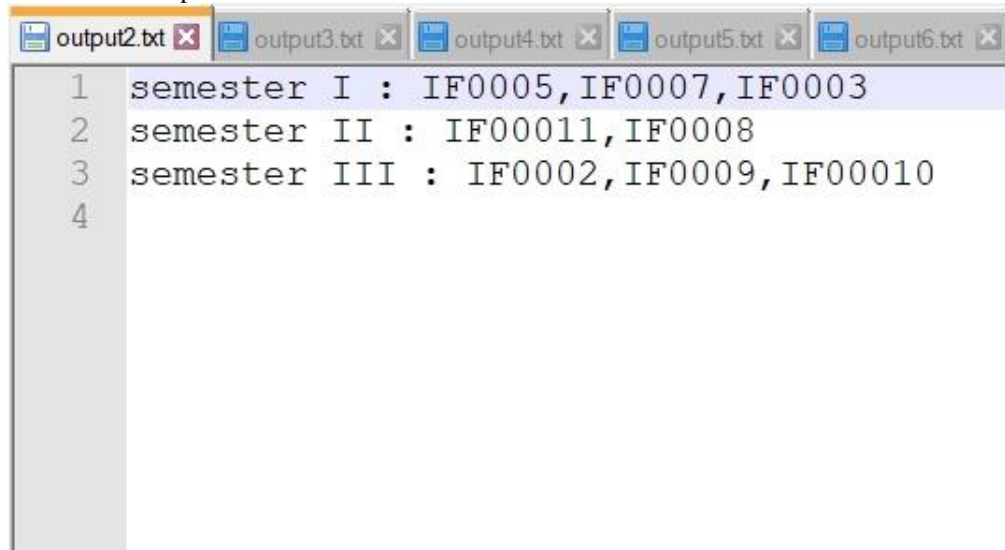
Gambar 3.1.2 output1.txt

2. Input 2



```
input2.txt x input3.txt x input4.txt x input5.txt x input6.txt x
1 IF0005.
2 IF00011, IF0005, IF0007.
3 IF0002, IF00011.
4 IF0007.
5 IF0008, IF0007, IF0003.
6 IF0009, IF0008, IF00011.
7 IF0003.
8 IF00010, IF0003, IF00011.
```

Gambar 3.2.1 input2.txt

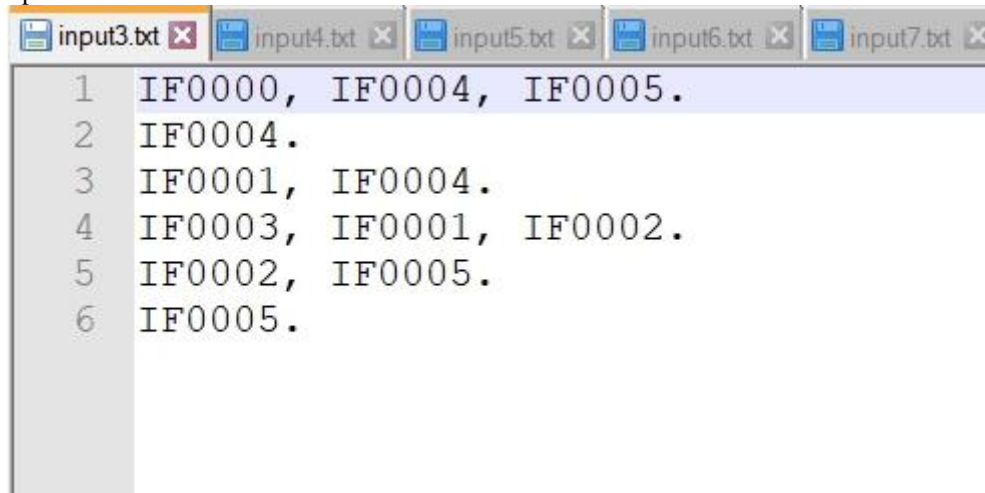


The screenshot shows a text editor window with multiple tabs: output2.txt, output3.txt, output4.txt, output5.txt, and output6.txt. The active tab is output2.txt, which contains the following text:

```
1 semester I : IF0005,IF0007,IF0003
2 semester II : IF00011,IF0008
3 semester III : IF0002,IF0009,IF00010
4
```

Gambar 3.2.2 output2.txt

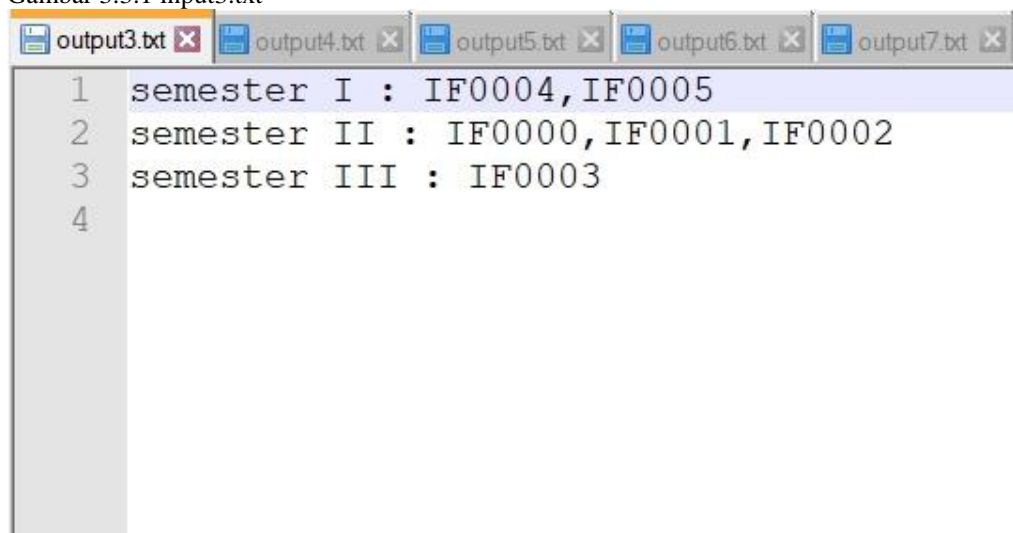
3. Input 3



The screenshot shows a text editor window with multiple tabs: input3.txt, input4.txt, input5.txt, input6.txt, and input7.txt. The active tab is input3.txt, which contains the following text:

```
1 IF0000, IF0004, IF0005.
2 IF0004.
3 IF0001, IF0004.
4 IF0003, IF0001, IF0002.
5 IF0002, IF0005.
6 IF0005.
```

Gambar 3.3.1 input3.txt

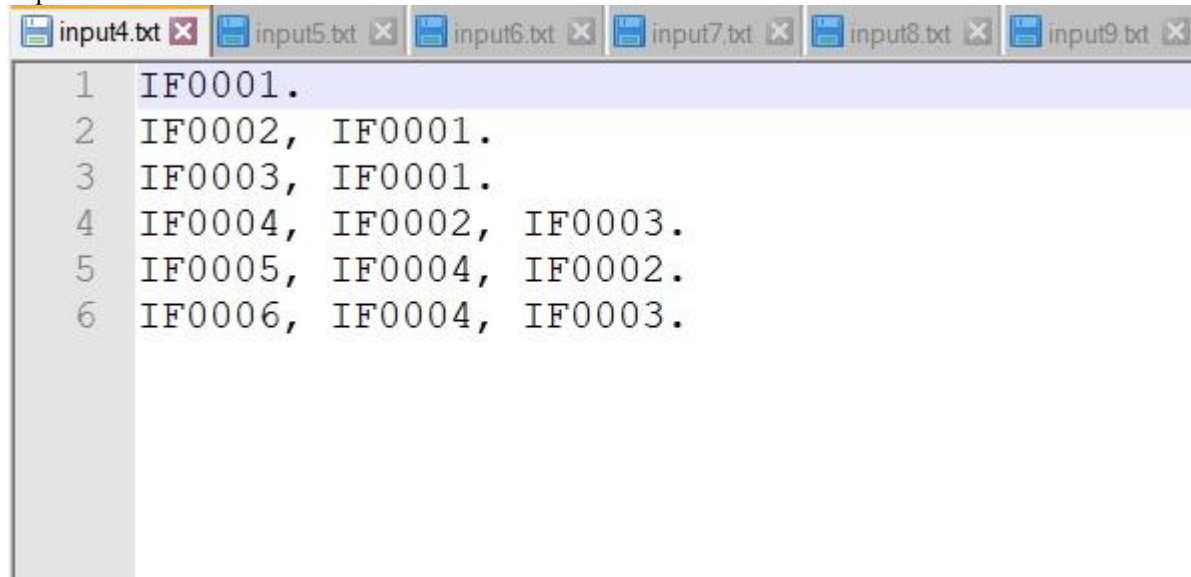


The screenshot shows a text editor window with multiple tabs: output3.txt, output4.txt, output5.txt, output6.txt, and output7.txt. The active tab is output3.txt, which contains the following text:

```
1 semester I : IF0004,IF0005
2 semester II : IF0000,IF0001,IF0002
3 semester III : IF0003
4
```

Gambar 3.3.2 output3.txt

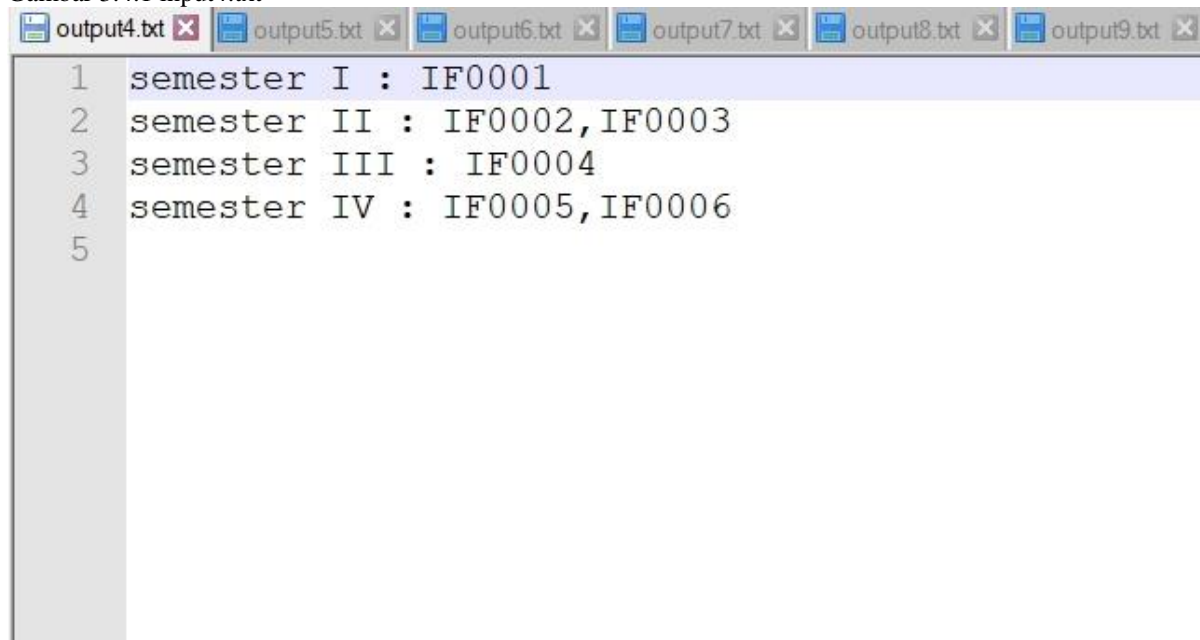
4. Input 4



```

input4.txt x input5.txt x input6.txt x input7.txt x input8.txt x input9.txt x
1 IF0001.
2 IF0002, IF0001.
3 IF0003, IF0001.
4 IF0004, IF0002, IF0003.
5 IF0005, IF0004, IF0002.
6 IF0006, IF0004, IF0003.
  
```

Gambar 3.4.1 input4.txt

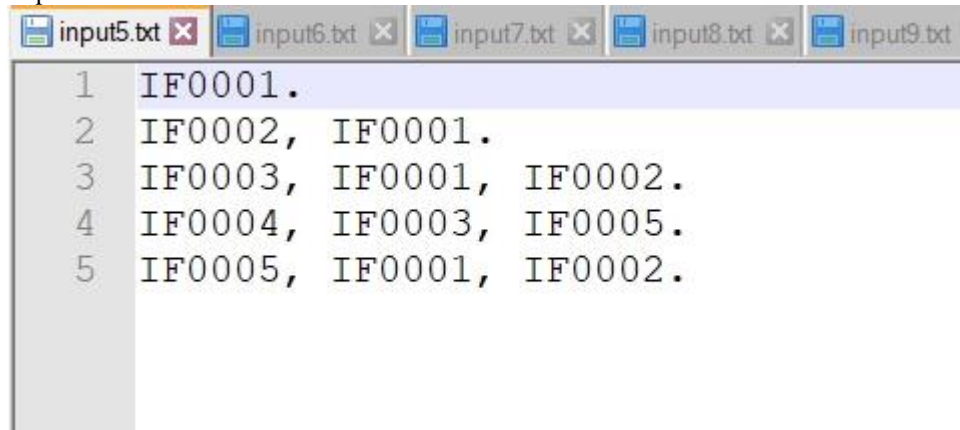


```

output4.txt x output5.txt x output6.txt x output7.txt x output8.txt x output9.txt x
1 semester I : IF0001
2 semester II : IF0002,IF0003
3 semester III : IF0004
4 semester IV : IF0005,IF0006
5
  
```

Gambar 3.4.2 output4.txt

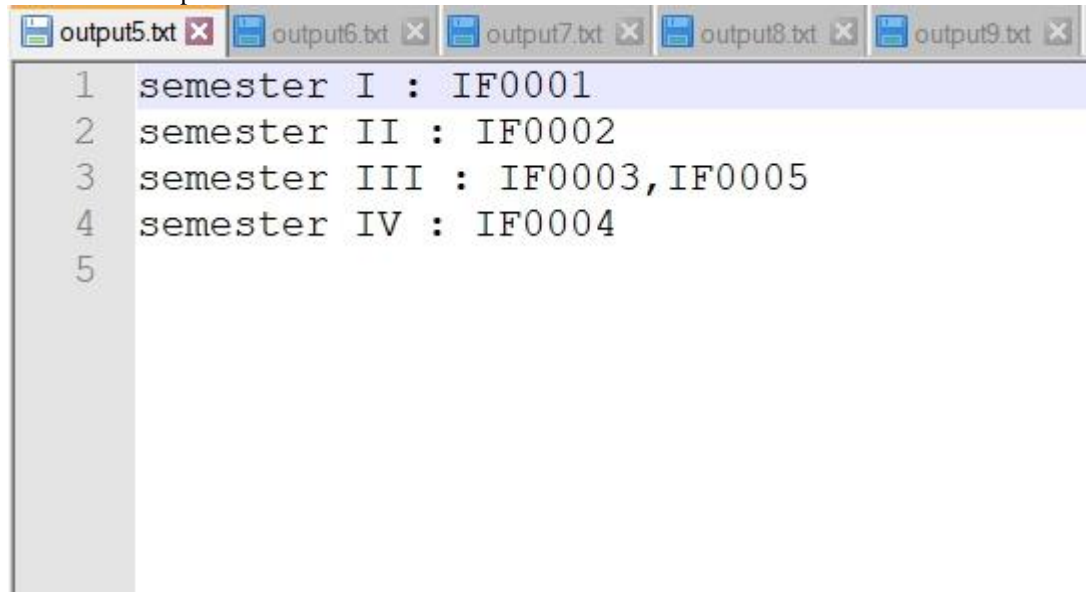
5. Input 5



```

input5.txt x input6.txt x input7.txt x input8.txt x input9.txt
1 IF0001.
2 IF0002, IF0001.
3 IF0003, IF0001, IF0002.
4 IF0004, IF0003, IF0005.
5 IF0005, IF0001, IF0002.
  
```


Gambar 3.5.1 input5.txt

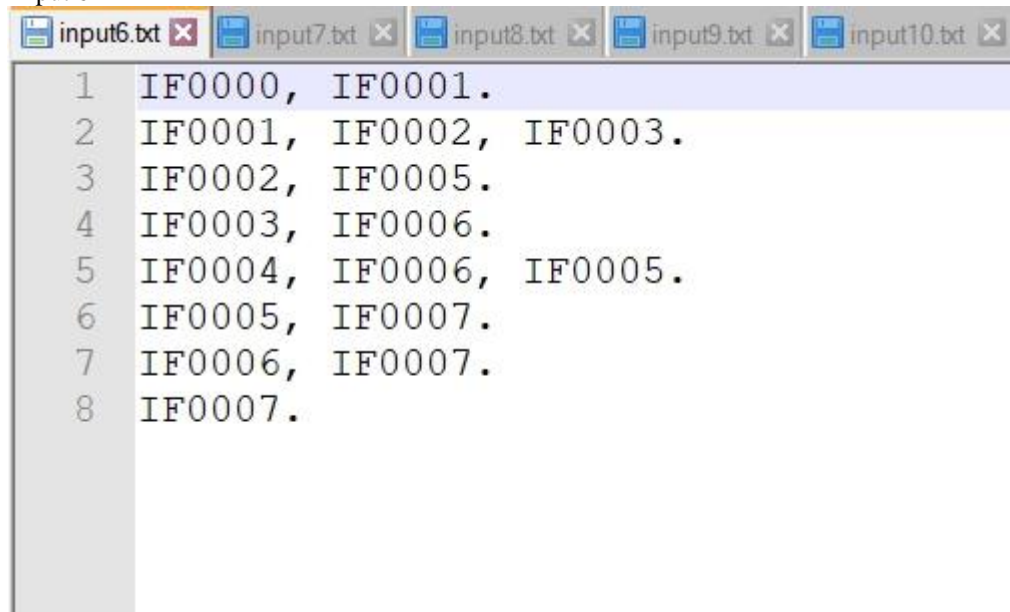


The screenshot shows a text editor window with five tabs: output5.txt, output6.txt, output7.txt, output8.txt, and output9.txt. The active tab is output5.txt, which contains the following text:

```
1 semester I : IF0001
2 semester II : IF0002
3 semester III : IF0003,IF0005
4 semester IV : IF0004
5
```

Gambar 3.5.2 output5.txt

6. Input 6



The screenshot shows a text editor window with five tabs: input6.txt, input7.txt, input8.txt, input9.txt, and input10.txt. The active tab is input6.txt, which contains the following text:

```
1 IF0000, IF0001.
2 IF0001, IF0002, IF0003.
3 IF0002, IF0005.
4 IF0003, IF0006.
5 IF0004, IF0006, IF0005.
6 IF0005, IF0007.
7 IF0006, IF0007.
8 IF0007.
```

Gambar 3.6.1 input6.txt

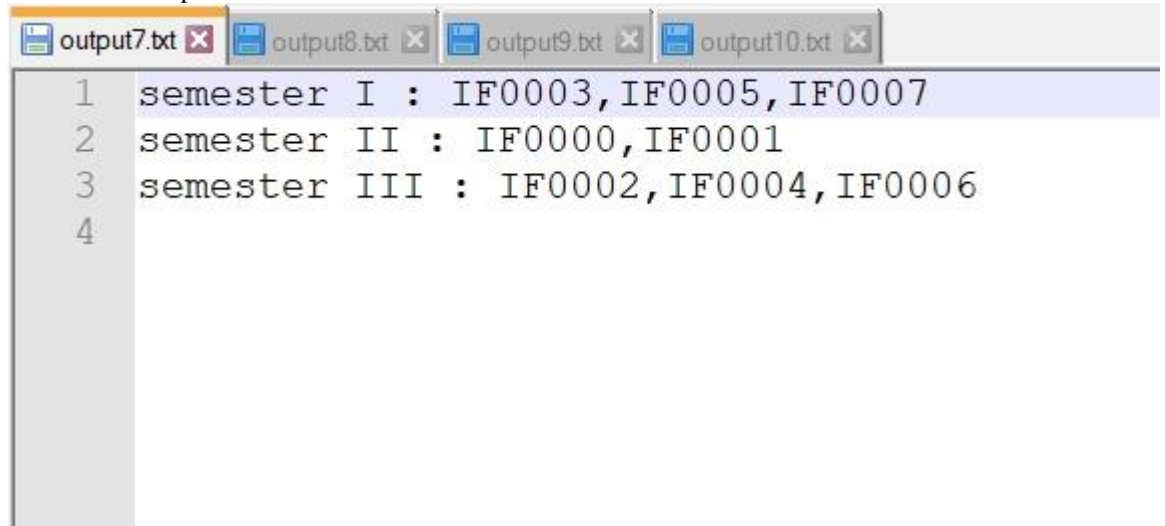
```
1 semester I : IF0007
2 semester II : IF0005,IF0006
3 semester III : IF0002,IF0003,IF0004
4 semester IV : IF0001
5 semester V : IF0000
6
```

Gambar 3.6.2 output6.txt

7. Input 7

```
1 IF0000, IF0007, IF0003.
2 IF0001, IF0005, IF0007.
3 IF0002, IF0001.
4 IF0003.
5 IF0004, IF0003, IF0001.
6 IF0005.
7 IF0006, IF0000, IF0001.
8 IF0007.
```

Gambar 3.7.1 input7.txt

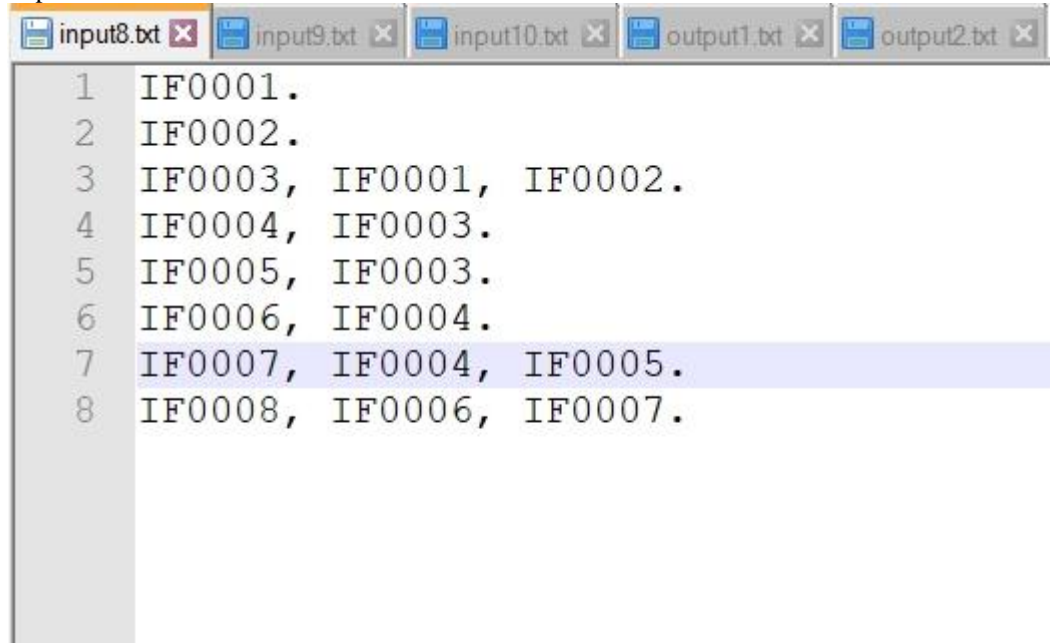


The screenshot shows a text editor window with four tabs: output7.txt, output8.txt, output9.txt, and output10.txt. The active tab is output7.txt, which contains the following text:

```
1 semester I : IF0003,IF0005,IF0007
2 semester II : IF0000,IF0001
3 semester III : IF0002,IF0004,IF0006
4
```

Gambar 3.7.2 output7.txt

8. Input 8



The screenshot shows a text editor window with five tabs: input8.txt, input9.txt, input10.txt, output1.txt, and output2.txt. The active tab is input8.txt, which contains the following text:

```
1 IF0001.
2 IF0002.
3 IF0003, IF0001, IF0002.
4 IF0004, IF0003.
5 IF0005, IF0003.
6 IF0006, IF0004.
7 IF0007, IF0004, IF0005.
8 IF0008, IF0006, IF0007.
```

Gambar 3.8.1 input8.txt

```

1 semester I : IF0001,IF0002
2 semester II : IF0003
3 semester III : IF0004,IF0005
4 semester IV : IF0006,IF0007
5 semester V : IF0008
6

```

Gambar 3.8.2 output8.txt

9. Input 9

```

1 KU0010, KU2863, KU1401, KU5670, KU9939, KU4208, KU8477, KU2746, KU1284, KU5553, KU4091, KU6898, KU5436, KU3974, KU2
2 KU0011, KU4325, KU2863, KU1401, KU9939, KU4208, KU8477, KU7015, KU1284, KU5553, KU9822, KU6898, KU3974, KU8243, KU2
3 KU0012, KU8594, KU2863, KU5670, KU4208, KU8477, KU2746, KU1284, KU9822, KU4091, KU8360, KU2629, KU1167, KU2512, KU6
4 KU0013, KU7132, KU9939, KU8477, KU2746, KU9822, KU2629, KU6898, KU5436, KU9705, KU8243, KU2512, KU5319, KU9588, KU3
5 KU0014, KU8594, KU2863, KU7132, KU5670, KU4208, KU2746, KU5553, KU8360, KU2629, KU5436, KU9705, KU8243, KU6781, KU9
6 KU0015, KU8594, KU2863, KU7132, KU1401, KU5670, KU9939, KU4208, KU8477, KU5553, KU4091, KU8360, KU6898, KU1167, KU9
7 KU0016, KU7132, KU1401, KU5670, KU4208, KU2746, KU1284, KU1167, KU9705, KU3974, KU2512, KU6781, KU1050, KU5319, KU9
8 KU0017, KU4325, KU7132, KU1401, KU5670, KU9939, KU4208, KU2746, KU4091, KU2629, KU6898, KU3974, KU8243, KU2512, KU5
9 KU0018, KU2863, KU5670, KU8477, KU7015, KU9822, KU8360, KU2629, KU6898, KU1167, KU5436, KU3974, KU8243, KU2512, KU1
10 KU0019, KU8594, KU7132, KU1401, KU5670, KU4208, KU7015, KU9822, KU4091, KU8360, KU2629, KU6898, KU9705, KU3974, KU1
11 KU0020, KU4325, KU8594, KU7132, KU5670, KU9939, KU8477, KU2746, KU1284, KU9822, KU6898, KU3974, KU8243, KU1050, KU5
12 KU0021, KU8594, KU7132, KU1401, KU9939, KU4208, KU8477, KU7015, KU1284, KU9822, KU8360, KU2629, KU9705, KU8243, KU2
13 KU0022, KU8594, KU7132, KU1401, KU5670, KU4208, KU4091, KU6898, KU5436, KU9705, KU6781, KU1050, KU5319, KU9588, KU3
14 KU0023, KU4325, KU8594, KU2863, KU7132, KU1401, KU9939, KU4208, KU2746, KU7015, KU1284, KU9822, KU4091, KU8360, KU6
15 KU0024, KU8594, KU7132, KU1401, KU9939, KU8477, KU7015, KU8360, KU2629, KU6898, KU5436, KU9705, KU8243, KU2512, KU5
16 KU0025, KU5670, KU4208, KU8477, KU2746, KU7015, KU5553, KU4091, KU2629, KU1167, KU8243, KU2512, KU6781, KU1050, KU9
17 KU0026, KU2863, KU7132, KU9939, KU8477, KU4091, KU2629, KU6898, KU9705, KU8243, KU1050, KU9588, KU3857, KU2395, KU6
18 KU0027, KU4325, KU7132, KU1401, KU9939, KU8477, KU7015, KU5553, KU8360, KU9705, KU3974, KU8243, KU2512, KU1050, KU5
19 KU0028, KU8594, KU2863, KU7132, KU5670, KU2746, KU7015, KU8360, KU6898, KU1167, KU5436, KU9705, KU5319, KU6664, KU0
20 KU0029, KU4325, KU8594, KU1401, KU5670, KU9939, KU8477, KU2746, KU7015, KU1284, KU9822, KU4091, KU2629, KU1167, KU9
21 KU0030, KU4325, KU8594, KU2863, KU7132, KU9939, KU8477, KU2746, KU7015, KU1284, KU5553, KU4091, KU2629, KU6898, KU1
22 KU0031, KU4325, KU4208, KU8477, KU2746, KU1284, KU5553, KU9822, KU8360, KU5436, KU9705, KU6781, KU1050, KU3857, KU8
23 KU0032, KU4325, KU8594, KU2863, KU5670, KU9939, KU4208, KU8477, KU2746, KU7015, KU4091, KU8360, KU9705, KU3974, KU8
24 KU0033, KU4325, KU8594, KU2863, KU7132, KU4208, KU8477, KU2746, KU7015, KU4091, KU8360, KU6898, KU5436, KU3974, KU5
25 KU0034, KU5670, KU4208, KU8477, KU2746, KU1284, KU9822, KU6898, KU9705, KU2512, KU5319, KU9588, KU3857, KU6664, KU3
26 KU0035, KU4325, KU2863, KU7132, KU1401, KU5670, KU4208, KU8477, KU7015, KU1284, KU5553, KU4091, KU2629, KU3974, KU6
27 KU0036, KU4325, KU2863, KU5670, KU9939, KU4208, KU8477, KU1284, KU9822, KU4091, KU2629, KU1167, KU5436, KU9705, KU8
28 KU0037, KU4325, KU8594, KU2863, KU7132, KU1401, KU8477, KU2746, KU1284, KU4091, KU1167, KU5436, KU9705, KU2512, KU6
29 KU0038, KU4325, KU2863, KU7132, KU4208, KU8477, KU7015, KU1284, KU5553, KU4091, KU8360, KU2629, KU6898, KU9705, KU3
30 KU0039, KU4325, KU2863, KU7132, KU1401, KU5670, KU9939, KU4208, KU2746, KU1284, KU8360, KU2629, KU1167, KU5436, KU9
31 KU0040, KU2863, KU7132, KU4208, KU2746, KU7015, KU9822, KU4091, KU8360, KU2629, KU6898, KU1167, KU9705, KU3974, KU6
32 KU0041, KU4325, KU2863, KU7132, KU1401, KU9939, KU4208, KU8477, KU2746, KU7015, KU9822, KU8360, KU2629, KU6898, KU1
33 KU0042, KU2863, KU1401, KU5670, KU9939, KU4208, KU1284, KU5553, KU9822, KU4091, KU5436, KU9705, KU3974, KU6781, KU1
34 KU0043, KU8594, KU7132, KU9939, KU4208, KU8477, KU7015, KU5553, KU4091, KU2629, KU6898, KU1167, KU5436, KU9705, KU2
35 KU0044, KU4325, KU1401, KU5670, KU9939, KU8477, KU7015, KU5553, KU9822, KU8360, KU6898, KU1167, KU3974, KU5319, KU9
36 KU0045, KU8594, KU7132, KU1401, KU9939, KU4208, KU8477, KU7015, KU1284, KU5553, KU9822, KU4091, KU8360, KU2629, KU6
37 KU0046, KU2863, KU1401, KU5670, KU2746, KU9822, KU4091, KU8360, KU8243, KU6781, KU9588, KU0933, KU3740, KU6547, KU0

```

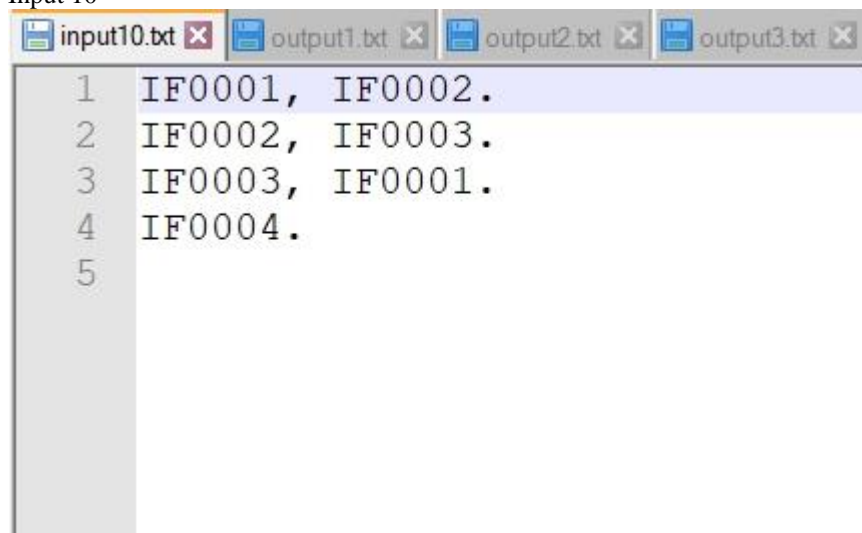
Gambar 3.9.1 input9.txt



```
1 ,KU2976,KU2977,KU2978,KU2979,KU3033,KU3034,KU3035,KU3036,KU3037,KU3038,KU3091,KU3092,KU3093,KU3094,KU3095,KU3096,K
2 7,KU2148,KU2149,KU2150,KU2151,KU2152,KU2153,KU2154,KU2155,KU2206,KU2207,KU2208,KU2209,KU2210,KU2211,KU2212,KU2213,
3 27,KU1328,KU1374,KU1375,KU1376,KU1377,KU1378,KU1379,KU1380,KU1381,KU1382,KU1383,KU1384,KU1385,KU1386,KU1432,KU1433
4 8,KU9209,KU9267,KU9268,KU9325,KU9326,KU9384,KU9385,KU9442,KU9443,KU9501,KU9502,KU9559,KU9560,KU9618,KU9619,KU9676,
5 ,KU3476,KU3531,KU3532,KU3533,KU3534,KU3535,KU3589,KU3590,KU3591,KU3592,KU3593,KU3648,KU3649,KU3650,KU3651,KU3652,K
6
7 40,KU1589,KU1590,KU1591,KU1592,KU1593,KU1594,KU1595,KU1596,KU1597,KU1598,KU1599,KU1647,KU1648,KU1649,KU1650,KU1651
8
```

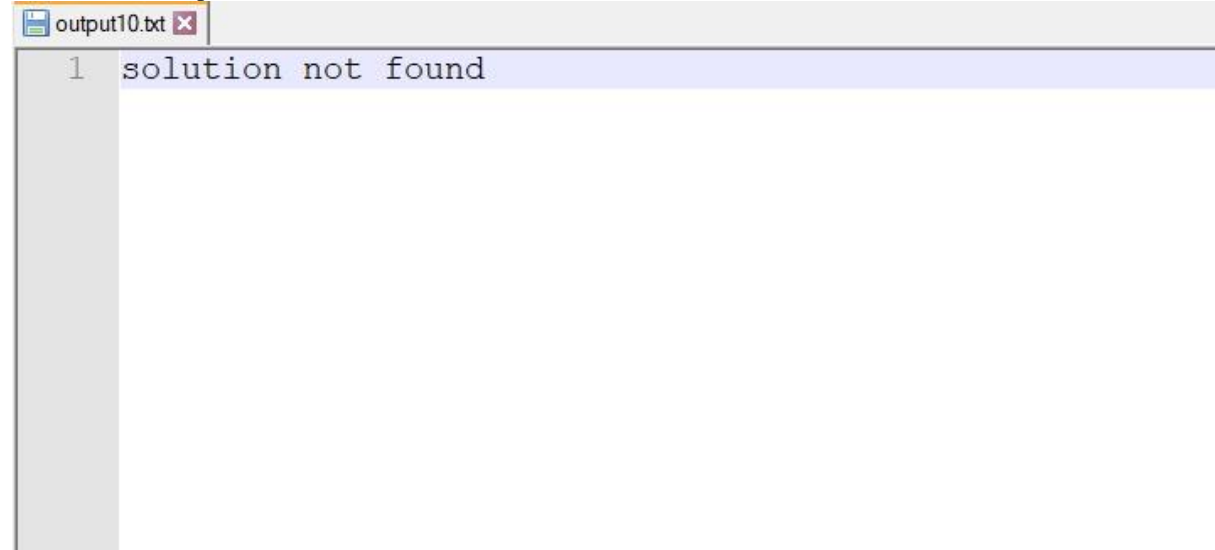
Gambar 3.9.2 output9.txt

10. Input 10



```
1 IF0001, IF0002.
2 IF0002, IF0003.
3 IF0003, IF0001.
4 IF0004.
5
```


Gambar 3.10.1 input10.txt



Gambar 3.10.2 output10.txt

IV. Alamat Source Code

a. GitHub

HTTPS : https://github.com/ronggurmahendra/13519008_TugasKecil2_StrategiAlgoritma.git

SSH : git@github.com:ronggurmahendra/13519008_TugasKecil2_StrategiAlgoritma.git

b. Google Drive

https://drive.google.com/drive/folders/1yYDzAVU0-LzXoDGy0JX8-nokyT60_yw?usp=sharing

V. Checklist

Tabel 5.1 Checklist laporan

Poin	Ya	Tidak
1. Program berhasil dikompilasi	√	
2. Program berhasil running	√	
3. Program dapat menerima berkas file dan menuliskan output.	√	
4. Luaran sudah benar untuk semua kasus input.	√	

VI. Screen Shot

1. input1.txt

```
In [12]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2')

Masukan Nama File Masukan: input1.txt
semester I : IF0003
semester II : IF0001
semester III : IF0004
semester IV : IF0002
semester V : IF0005

Masukan Nama File Keluaran: output1.txt
```

Gambar 6.1 hasil eksekusi dari file input1

2. input2.txt

```
In [13]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/
tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi
algoritma/tucil2')

Masukan Nama File Masukan: input2.txt
semester I : IF0005,IF0007,IF0003
semester II : IF00011,IF0008
semester III : IF0002,IF0009,IF00010

Masukan Nama File Keluaran: output2.txt
```

Gambar 6.2 hasil eksekusi dari file input2

3. input3.txt

```
In [14]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/
tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi
algoritma/tucil2')

Masukan Nama File Masukan: input3.txt
semester I : IF0004,IF0005
semester II : IF0000,IF0001,IF0002
semester III : IF0003

Masukan Nama File Keluaran: output3.txt
```

Gambar 6.3 hasil eksekusi dari file input3

4. input4.txt

```
In [15]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/
tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi
algoritma/tucil2')

Masukan Nama File Masukan: input4.txt
semester I : IF0001
semester II : IF0002,IF0003
semester III : IF0004
semester IV : IF0005,IF0006

Masukan Nama File Keluaran: output4.txt
```

Gambar 6.4 hasil eksekusi dari file input4

5. input5.txt

```
In [16]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/
tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi
algoritma/tucil2')

Masukan Nama File Masukan: input5.txt
semester I : IF0001
semester II : IF0002
semester III : IF0003,IF0005
semester IV : IF0004

Masukan Nama File Keluaran: output5.txt
```

Gambar 6.5 hasil eksekusi dari file input5

6. input6.txt

```
In [17]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2')

Masukan Nama File Masukan: input6.txt
semester I : IF0007
semester II : IF0005,IF0006
semester III : IF0002,IF0003,IF0004
semester IV : IF0001
semester V : IF0000

Masukan Nama File Keluaran: output6.txt
```

Gambar 6.6 hasil eksekusi dari file input6

7. input7.txt

```
In [18]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2')

Masukan Nama File Masukan: input7.txt
semester I : IF0003,IF0005,IF0007
semester II : IF0000,IF0001
semester III : IF0002,IF0004,IF0006

Masukan Nama File Keluaran: output7.txt
```

Gambar 6.7 hasil eksekusi dari file input7

8. input8.txt

```
In [19]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/tucil2')

Masukan Nama File Masukan: input8.txt
semester I : IF0001,IF0002
semester II : IF0003
semester III : IF0004,IF0005
semester IV : IF0006,IF0007
semester V : IF0008

Masukan Nama File Keluaran: output8.txt
```

Gambar 6.8 hasil eksekusi dari file input8

9. input9.txt


```
Masukan Nama File Masukan: input9.txt
semester I :
KU0050,KU0051,KU0052,KU0053,KU0054,KU0055,KU0109,KU0110,KU0111,KU0112,KU0113,KU0114,KU0167,KU0168,KU0169,KU0170,KU0171,KU0172,KU0226,KU0227,KU0228,K
U0229,KU0230,KU0231,KU0284,KU0285,KU0286,KU0287,KU0288,KU0289,KU0343,KU0344,KU0345,KU0346,KU0347,KU0348,KU0401,KU0402,KU0403,KU0404,KU0405,KU0406,KU
0460,KU0461,KU0462,KU0463,KU0464,KU0465,KU0518,KU0519,KU0520,KU0521,KU0522,KU0523,KU0577,KU0578,KU0579,KU0580,KU0581,KU0582,KU0635,KU0636,KU0637,KU0
638,KU0639,KU0640,KU0694,KU0695,KU0696,KU0697,KU0698,KU0699,KU0752,KU0753,KU0754,KU0755,KU0756,KU0757,KU0811,KU0812,KU0813,KU0814,KU0815,KU0816,KU08
69,KU0870,KU0871,KU0872,KU0873,KU0874,KU0928,KU0929,KU0930,KU0931,KU0932,KU0933,KU0986,KU0987,KU0988,KU0989,KU0990,KU0991,KU1045,KU1046,KU1047,KU104
8,KU1049,KU1050,KU1103,KU1104,KU1105,KU1106,KU1107,KU1108,KU1162,KU1163,KU1164,KU1165,KU1166,KU1167,KU1220,KU1221,KU1222,KU1223,KU1224,KU1225,KU1279
,KU1280,KU1281,KU1282,KU1283,KU1284,KU1337,KU1338,KU1339,KU1340,KU1341,KU1342,KU1396,KU1397,KU1398,KU1399,KU1400,KU1401,KU1454,KU1455,KU1456,KU1457,
KU1458,KU1459,KU1512,KU1513,KU1514,KU1515,KU1516,KU1517,KU1571,KU1572,KU1573,KU1574,KU1575,KU1576,KU1577,KU1629,KU1630,KU1631,KU1632,KU1633,KU1634,KU1688,K
U1689,KU1690,KU1691,KU1692,KU1693,KU1746,KU1747,KU1748,KU1749,KU1750,KU1751,KU1805,KU1806,KU1807,KU1808,KU1809,KU1810,KU1863,KU1864,KU1865,KU1866,KU1867,KU1868,KU1922,KU1923,KU1924,KU1925,KU1926,KU1927,KU1980,KU1981,KU1982,KU1983,KU1984,KU1985,KU2039,KU2040,KU2041,KU2042,KU2043,KU2044,KU2097,KU2
098,KU2099,KU2100,KU2101,KU2102,KU2156,KU2157,KU2158,KU2159,KU2160,KU2161,KU2214,KU2215,KU2216,KU2217,KU2218,KU2219,KU2273,KU2274,KU2275,KU2276,KU22
77,KU2278,KU2331,KU2332,KU2333,KU2334,KU2335,KU2336,KU2390,KU2391,KU2392,KU2393,KU2394,KU2395,KU2448,KU2449,KU2450,KU2451,KU2452,KU2453,KU2507,KU250
8,KU2509,KU2510,KU2511,KU2512,KU2565,KU2566,KU2567,KU2568,KU2569,KU2570,KU2624,KU2625,KU2626,KU2627,KU2628,KU2629,KU2682,KU2683,KU2684,KU2685,KU2686,KU2687,KU2741,KU2742,KU2743,KU2744,KU2745,KU2746,KU2799,KU2800,KU2801,KU2802,KU2803,KU2804,KU2858,KU2859,KU2860,KU2861,KU2862,KU2863,KU2916,KU2917,
KU2918,KU2919,KU2920,KU2921,KU2974,KU2975,KU2976,KU2977,KU2978,KU2979,KU3033,KU3034,KU3035,KU3036,KU3037,KU3038,KU3091,KU3092,KU3093,KU3094,KU3095,K
U3096,KU3150,KU3151,KU3152,KU3153,KU3154,KU3155,KU3208,KU3209,KU3210,KU3211,KU3212,KU3213,KU3267,KU3268,KU3269,KU3270,KU3271,KU3272,KU3325,KU3326,KU
3327,KU3328,KU3329,KU3330,KU3384,KU3385,KU3386,KU3387,KU3388,KU3389,KU3442,KU3443,KU3444,KU3445,KU3446,KU3447,KU3501,KU3502,KU3503,KU3504,KU3505,KU3
506,KU3559,KU3560,KU3561,KU3562,KU3563,KU3564,KU3618,KU3619,KU3620,KU3621,KU3622,KU3623,KU3676,KU3677,KU3678,KU3679,KU3680,KU3681,KU3735,KU3736,KU37
37,KU3738,KU3739,KU3740,KU3793,KU3794,KU3795,KU3796,KU3797,KU3798,KU3852,KU3853,KU3854,KU3855,KU3856,KU3857,KU3910,KU3911,KU3912,KU3913,KU3914,KU391
5,KU3969,KU3970,KU3971,KU3972,KU3973,KU3974,KU4027,KU4028,KU4029,KU4030,KU4031,KU4032,KU4086,KU4087,KU4088,KU4089,KU4090,KU4091,KU4144,KU4145,KU4146
,KU4147,KU4148,KU4149,KU4203,KU4204,KU4205,KU4206,KU4207,KU4208,KU4261,KU4262,KU4263,KU4264,KU4265,KU4266,KU4319,KU4320,KU4321,KU4322,KU4323,KU4324,
KU4325,KU4378,KU4379,KU4380,KU4381,KU4382,KU4383,KU4436,KU4437,KU4438,KU4439,KU4440,KU4441,KU4495,KU4496,KU4497,KU4498,KU4499,KU4500,KU4553,KU4554,K
U4555,KU4556,KU4557,KU4558,KU4612,KU4613,KU4614,KU4615,KU4616,KU4617,KU4670,KU4671,KU4672,KU4673,KU4674,KU4675,KU4729,KU4730,KU4731,KU4732,KU4733,K
U4734,KU4787,KU4788,KU4789,KU4790,KU4791,KU4792,KU4846,KU4847,KU4848,KU4849,KU4850,KU4851,KU4904,KU4905,KU4906,KU4907,KU4908,KU4909,KU4963,KU4964,KU4
965,KU4966,KU4967,KU4968,KU5021,KU5022,KU5023,KU5024,KU5025,KU5026,KU5080,KU5081,KU5082,KU5083,KU5084,KU5085,KU5138,KU5139,KU5140,KU5141,KU5142,KU51
43,KU5197,KU5198,KU5199,KU5200,KU5201,KU5202,KU5255,KU5256,KU5257,KU5258,KU5259,KU5260,KU5314,KU5315,KU5316,KU5317,KU5318,KU5319,KU5372,KU5373,KU537
4,KU5375,KU5376,KU5377,KU5431,KU5432,KU5433,KU5434,KU5435,KU5436,KU5489,KU5490,KU5491,KU5492,KU5493,KU5494,KU5548,KU5549,KU5550,KU5551,KU5552,KU5553
,KU5606,KU5607,KU5608,KU5609,KU5610,KU5611,KU5665,KU5666,KU5667,KU5668,KU5669,KU5670,KU5723,KU5724,KU5725,KU5726,KU5727,KU5728,KU5781,KU5782,KU5783,
KU5784,KU5785,KU5786,KU5840,KU5841,KU5842,KU5843,KU5844,KU5845,KU5898,KU5899,KU5900,KU5901,KU5902,KU5903,KU5957,KU5958,KU5959,KU5960,KU5961,KU5962,K
U6015,KU6016,KU6017,KU6018,KU6019,KU6020,KU6074,KU6075,KU6076,KU6077,KU6078,KU6079,KU6132,KU6133,KU6134,KU6135,KU6136,KU6137,KU6191,KU6192,KU6193,KU6
194,KU6195,KU6196,KU6249,KU6250,KU6251,KU6252,KU6253,KU6254,KU6308,KU6309,KU6310,KU6311,KU6312,KU6313,KU6366,KU6367,KU6368,KU6369,KU6370,KU6371,KU6
425,KU6426,KU6427,KU6428,KU6429,KU6430,KU6483,KU6484,KU6485,KU6486,KU6487,KU6488,KU6542,KU6543,KU6544,KU6545,KU6546,KU6547,KU6600,KU6601,KU6602,KU66
```

Gambar 6.9 hasil eksekusi dari file input9

10. input10.txt

```
In [6]: runfile('C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi algoritma/
tucil2/tucil2.py', wdir='C:/Users/ZEPHYRUS GU502GU/Desktop/Kuliah/Semester 4/strategi
algoritma/tucil2')

Masukan Nama File Masukan: input10.txt
solution not found

Masukan Nama File Keluaran: output10.txt
```

Gambar 6.10 hasil eksekusi dari file input10