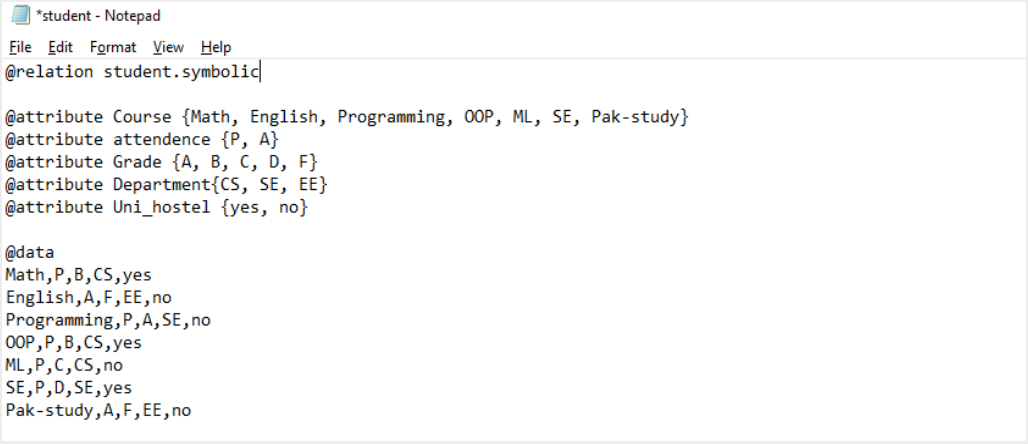
Applied Machine learning

Assginment#01

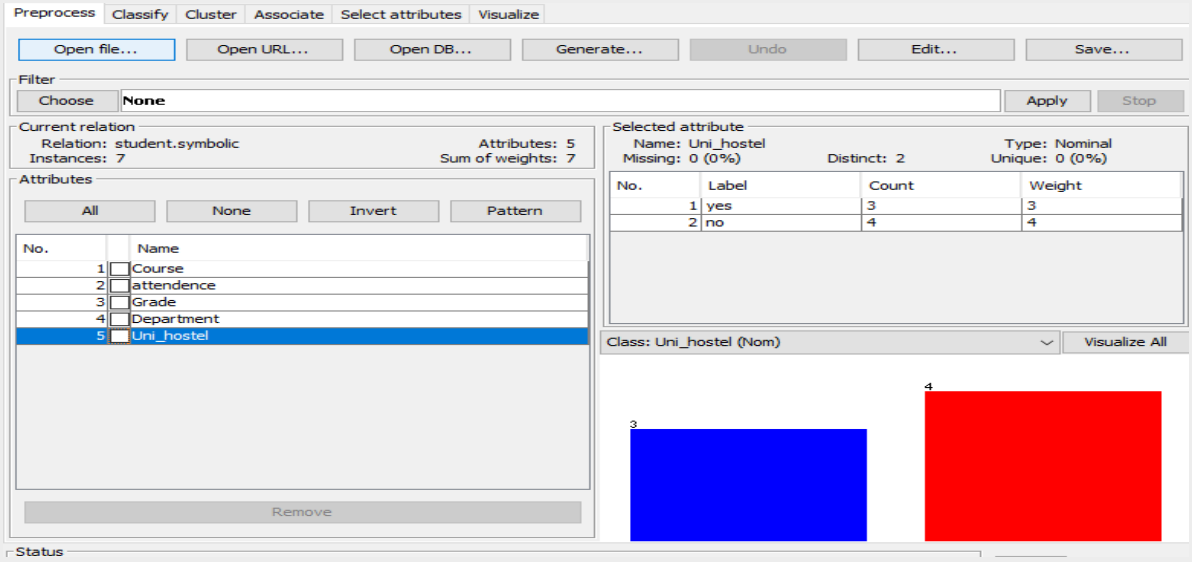
Name: Muhammad Ali P180089 Section 7A.

1) Dataset name Student.arff.

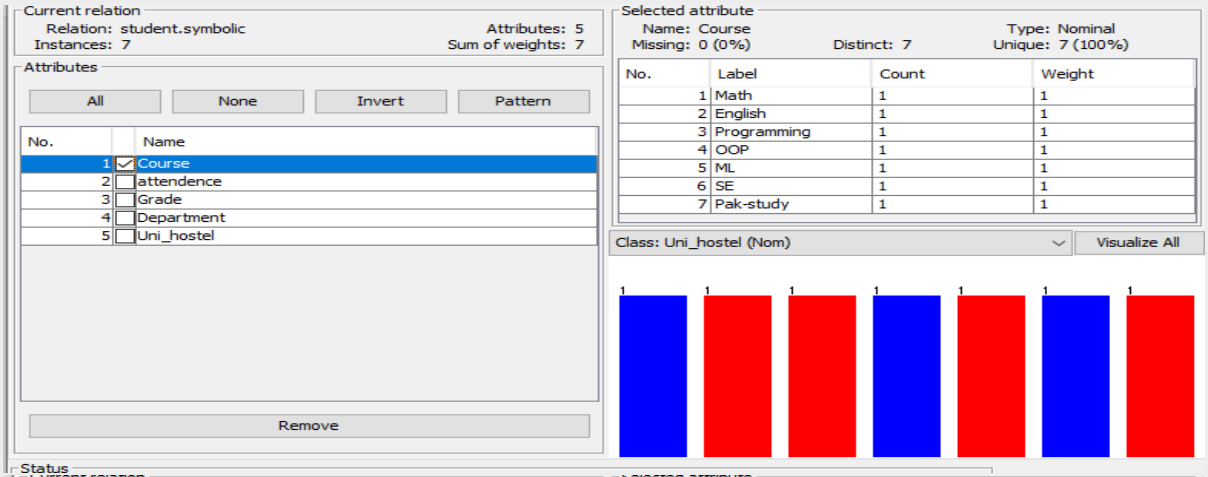
1.1) Create data set. (Screenshot)

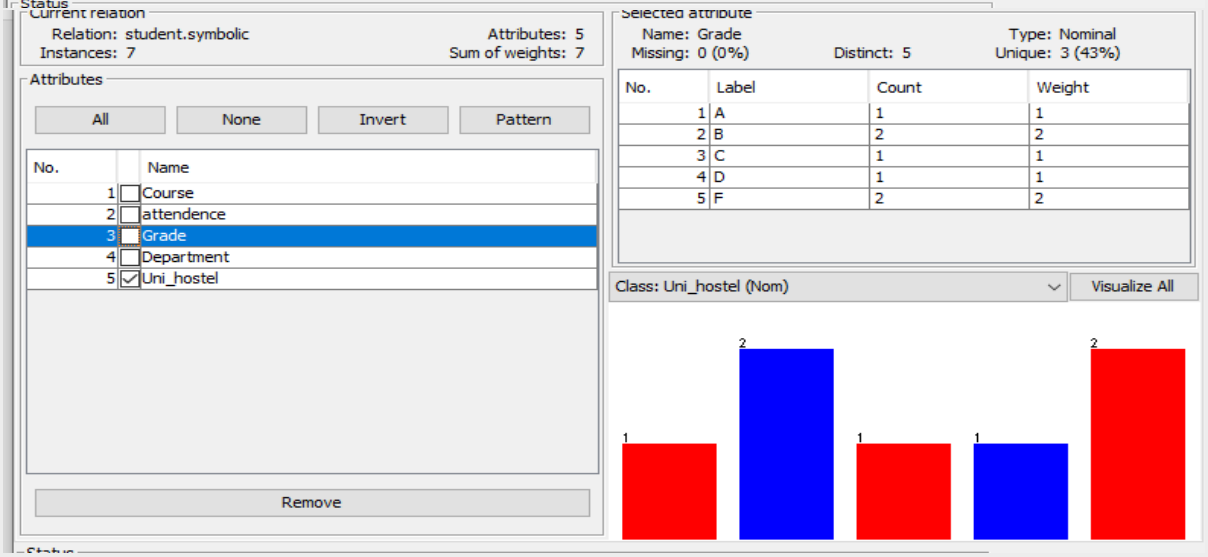


1.2) Preprocess.



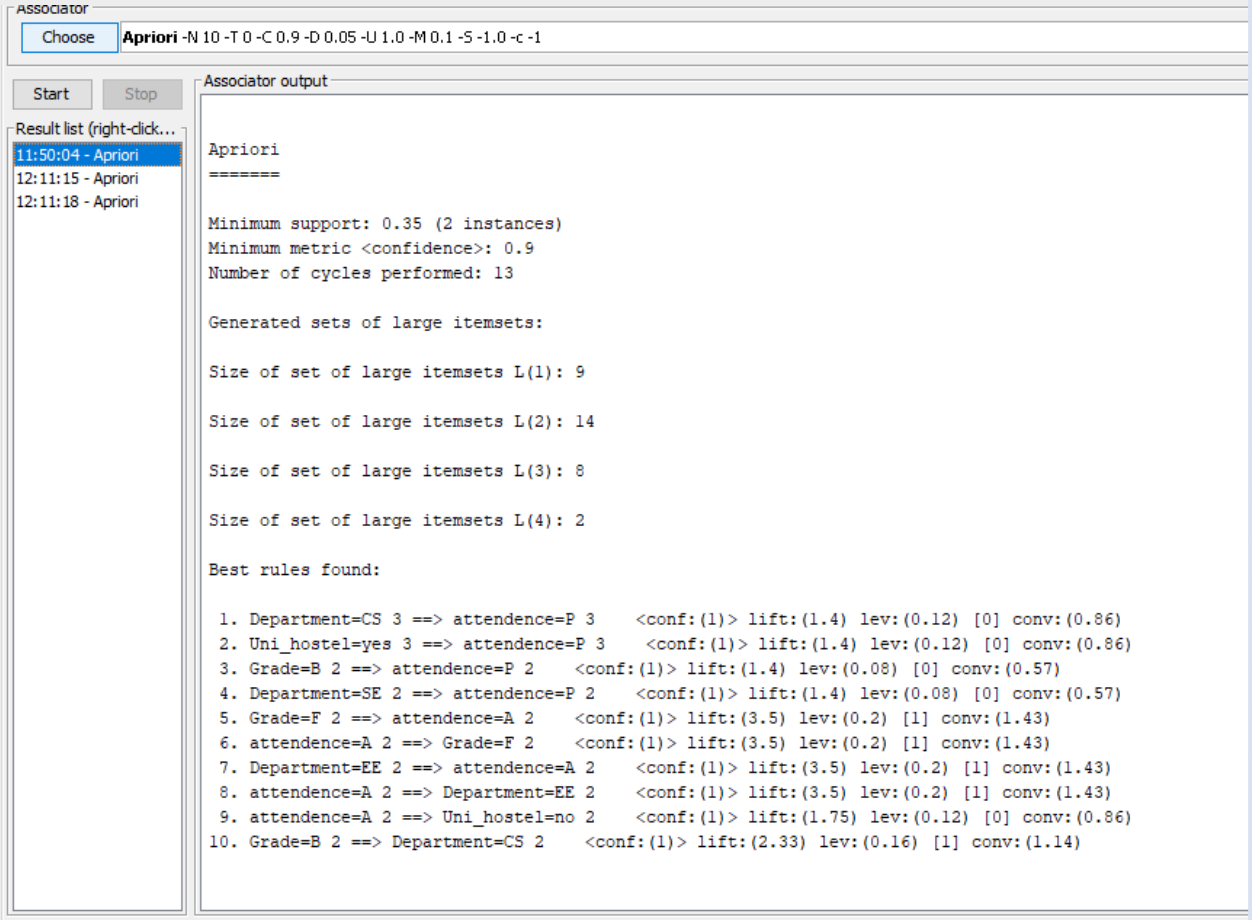
1.3) Accuracy.


Current relation
Relation: student.symbolic
Instances: 7
Attributes: 5
Sum of weights: 7
Attributes
All
None
Invert
Pattern
No.
Name
1 Course
2 attendence
3 Grade
4 Department
5 Uni_hostel
Remove
Selected attribute
Name: Course
Missing: 0 (0%)
Distinct: 7
Type: Nominal
Unique: 7 (100%)
No.
Label
Count
Weight
1 Math 1 1
2 English 1 1
3 Programming 1 1
4 OOP 1 1
5 ML 1 1
6 SE 1 1
7 Pak-study 1 1
Class: Uni_hostel (Nom)
Visualize All


Status
Current relation
Relation: student.symbolic
Instances: 7
Attributes: 5
Sum of weights: 7
Attributes
All
None
Invert
Pattern
No.
Name
1 Course
2 attendence
3 Grade
4 Department
5 Uni_hostel
Remove
Selected attribute
Name: Grade
Missing: 0 (0%)
Distinct: 5
Type: Nominal
Unique: 3 (43%)
No.
Label
Count
Weight
1 A 1 1
2 B 2 2
3 C 1 1
4 D 1 1
5 F 2 2
Class: Uni_hostel (Nom)
Visualize All


Relation: student.symbolic
Instances: 7
Attributes: 5
Sum of weights: 7
Attributes
All
None
Invert
Pattern
No.
Name
1 Course
2 attendence
3 Grade
4 Department
5 Uni_hostel
Remove
Name: Department
Missing: 0 (0%)
Distinct: 3
Type: Nominal
Unique: 0 (0%)
No.
Label
Count
Weight
1 CS 3 3
2 SE 2 2
3 EE 2 2
Class: Uni_hostel (Nom)
Visualize All

2) Association rule…



3) Code part here.

In [44]:

```
from scipy.io import arff
import pandas as pd
import numpy as np

data = arff.loadarff('student.arff')
print(data[1])
df = pd.DataFrame(data[0])

df.head()
```

```
Dataset: student
        Course's type is nominal, range is ('Math', 'English', 'Programming', 'OOP', 'ML', 'SE1', 'Pak-study')
        attendence's type is nominal, range is ('P', 'A')
        Grade's type is nominal, range is ('A', 'B', 'C', 'D', 'F')
        Department's type is nominal, range is ('CS', 'SE', 'EE')
        Uni_hostel's type is nominal, range is ('yes', 'no')
```

Out[44]:

	Course	attendence	Grade	Department	Uni_hostel
0	b'Math'	b'P'	b'B'	b'CS'	b'yes'
1	b'English'	b'A'	b'F'	b'EE'	b'no'
2	b'Programming'	b'P'	b'A'	b'SE'	b'no'
3	b'OOP'	b'P'	b'B'	b'CS'	b'yes'
4	b'ML'	b'P'	b'C'	b'CS'	b'no'

3.1) outputs here:

```
    print(choose[5])
if num==7:
    print(choose[6])
elif(num==8):
    print(choose[7])
elif num==9:
    print(choose[8])
elif(num==10):
    print(choose[9])
else:
    print("please enter correct option")
```

```
Enter number 1  B/W 10: 1
1. Department=CS 3 ==> attendence=P 3    <conf:(1)> lift:(1.4) lev:(0.12) [0] conv:(0.86)
please enter correct option
```

```
elif num==9:
    print(choose[8])
elif(num==10):
    print(choose[9])
else:
    print("please enter correct option")
```

```
Enter number 1  B/W 10: 3
 3. Grade=B 2 ==> attendence=P 2    <conf:(1)> lift:(1.4) lev:(0.08) [0] conv:(0.57)
please enter correct option
```

```
    print(choose[8])
elif(num==10):
    print(choose[9])
else:
    print("please enter correct option")
```

```
Enter number 1  B/W 10: 223
please enter correct option
```

```
elif num==9:
    print(choose[8])
elif(num==10):
    print(choose[9])
else:
    print("please enter correct option")
```

```
Enter number 1  B/W 10: 5
5. Grade=F 2 ==> attendence=A 2    <conf:(1)> lift:(3.5) lev:(0.2) [1] conv:(1.43)
please enter correct option
```

```
    print(choose[8])
elif(num==10):
    print(choose[9])
else:
    print("please enter correct option")
```

```
Enter number 1  B/W 10: 7
 7. Department=EE 2 ==> attendence=A 2    <conf:(1)> lift:(3.5) lev:(0.2) [1] conv:(1.43)
```