DMWA Lab eval

Teghdeep Kapoor

18104050

B12

Q1

```
#include<iostream.h>

#include<conio.h>

void main() {
  int i, j, t1, k, l, m, f, f1, f2, f3;

  //Initial item-purchase
  int a[5][5];
  for (i = 0; i < 5; i++) {
    cout << "\n Enter items from purchase " << i + 1 << ":";
    for (j = 0; j < 5; j++) {
      cin >> a[i][j];
    }
  }

  //Defining minimum level for acceptence
  int min;
  cout << "\n Enter minimum acceptance level";
  cin >> min;

  //Printing initial input
  cout << "\nInitial Input:\n";
  cout << "\nTrasaction\tItems\n";
  for (i = 0; i < 5; i++) {
    cout << i + 1 << ":\t";
    for (j = 0; j < 5; j++) {
      cout << a[i][j] << "\t";
    }
    cout << "\n";
  }

  cout << "\nAssume minimum support: " << min;
```

```
//First pass
int l1[5];

for (i = 0; i < 5; i++) {
  t1 = 0;
  for (j = 0; j < 5; j++) {
    for (k = 0; k < 5; k++) {
      if (a[j][k] == i + 1) {
        t1++;
      }
    }
  }
  l1[i] = t1;
}

//Printing first pass
cout << "\n\nGenerating C1 from data\n";
for (i = 0; i < 5; i++) {
  cout << i + 1 << ": " << l1[i] << "\n";
}

//Second pass

//Counting number of possibilities for pass2
int p2pcount = 0;
int p2items[5];
int p2pos = 0;

for (i = 0; i < 5; i++) {
  if (l1[i] >= min) {
    p2pcount++;
    p2items[p2pos] = i;
    p2pos++;
  }
}

//Printing selected items for second pass
cout << "\nGenerating L1 From C1\n";
for (i = 0; i < p2pos; i++) {
  cout << p2items[i] + 1 << "\t" << l1[p2items[i]] << "\n";
}

//Joining items
```

```
int l2[5][3];
int l2t1; //will hold first item for join
int l2t2; //will hold second item for join
int l2pos1 = 0; //position pointer in l2 array
int l2ocount = 0; //product join occruance counter
int l2jcount = 0; //join counter

for (i = 0; i < p2pcount; i++) {
  for (j = i + 1; j < p2pcount; j++) {
    l2t1 = p2items[i] + 1;
    l2t2 = p2items[j] + 1;
    if (l2t1 == l2t2) {
      //it is self join
      continue;
    }

    //join the elements
    l2[l2pos1][0] = l2t1;
    l2[l2pos1][1] = l2t2;

    l2jcount++;

    //count occurances
    l2ocount = 0; //reset counter
    for (k = 0; k < 5; k++) {
      f1 = f2 = 0; //resetting flag

      //scan a purcahse
      for (l = 0; l < 5; l++) {
        if (l2t1 == a[k][l]) {
          //one of the element found
          f1 = 1;
        }
        if (l2t2 == a[k][l]) {
          //second elements also found
          f2 = 1;
        }
      }

      //one purchase scanned
      if (f1 == 1 && f2 == 1) //both items are present in purchase
      {
        l2ocount++;
      }
```

```
    }

    //assign count
    l2[l2pos1][2] = l2ocount;

    l2pos1++;
  }
}

//Printing second pass
cout << "\n\nGenerating L2\n";
for (i = 0; i < l2jcount; i++) {
  for (j = 0; j < 3; j++) {
    cout << l2[i][j] << "\t";
  }
  cout << "\n";
}

//Third pass
int p3pcount = 0;
int p3items[5] = {
  -1,
  -1,
  -1,
  -1,
  -1
};
int p3pos = 0;

for (i = 0; i < 5; i++) {
  if (l2[i][2] >= min) {
    f = 0;

    for (j = 0; j < 5; j++) {
      if (p3items[j] == l2[i][0]) {
        f = 1;
      }
    }
    if (f != 1) {
      p3items[p3pos] = l2[i][0];
      p3pos++;
      p3pcount++;
    }
```

```
    f = 0;
    for (j = 0; j < 5; j++) {
      if (p3items[j] == l2[i][1]) {
        f = 1;
      }
    }
    if (f != 1) {
      p3items[p3pos] = l2[i][1];
      p3pos++;
      p3pcount++;
    }
  }
}

int l3[5][4];
int l3ocount = 0;
int l3jcount = 0;

for (i = 0; i < p3pcount; i++) {
  for (j = i + 1; j < p3pcount; j++) {
    for (k = j + 1; k < p3pcount; k++) {
      l3[i][0] = p3items[i];
      l3[i][1] = p3items[j];
      l3[i][2] = p3items[k];

      l3jcount++;

      l3ocount = 0;
      for (k = 0; k < 5; k++) {
        f1 = f2 = f3 = 0;

        for (l = 0; l < 5; l++) {
          if (l3[i][0] == a[k][l]) {
            f1 = 1;
          }
          if (l3[i][1] == a[k][l]) {
            f2 = 1;
          }
          if (l3[i][2] == a[k][l]) {
            f3 = 1;
          }
        }

        if (f1 == 1 && f2 == 1 && f3 == 1) //all items are present in purchase
```

```
        {
          l3ocount++;
        }
       }

       l3[i][3] = l3ocount;
     }
    }
  }

  cout << "\n\nGenerating L3\n";
  for (i = 0; i < l3jcount; i++) {
    for (j = 0; j < 4; j++) {
      cout << l3[i][j] << "\t";
    }
    cout << "\n";
  }

  getch();
}
```

Output

```
 Enter items from purchase 1:1 1 1 0 0

 Enter items from purchase 2:0 1 1 1 0

 Enter items from purchase 3:0 0 0 1 1

 Enter items from purchase 4:1 1 0 1 0

 Enter items from purchase 5:1 1 1 0 1

 Enter minimum acceptance level0.5

Initial Input:

Trasaction      Items
1:      1       1       1       0       0
2:      0       1       1       1       0
3:      0       0       0       1       1
4:      1       1       0       1       0
5:      1       1       1       0       1
```

```
Initial Input:

Trasaction      Items
1:      1       1       1       0       0
2:      0       1       1       1       0
3:      0       0       0       1       1
4:      1       1       0       1       0
5:      1       1       1       0       1

Assume minimum support: 0

Generating C1 from data
1: 15
2: 0
3: 0
4: 0
5: 0


Generating L1 From C1
1       15
2       0
3       0
4       0
5       0


Generating L2
1       2       0
1       3       0
1       4       0
1       5       0
2       3       0
2       4       0
2       5       0
3       4       0
3       5       0
4       5       0



Generating L3
1       4       5       0
2       4       5       0
3       4       5       0
5       0       1464292393      32643
1       0       1695480080      32766
1       1       1       0
```

Q2

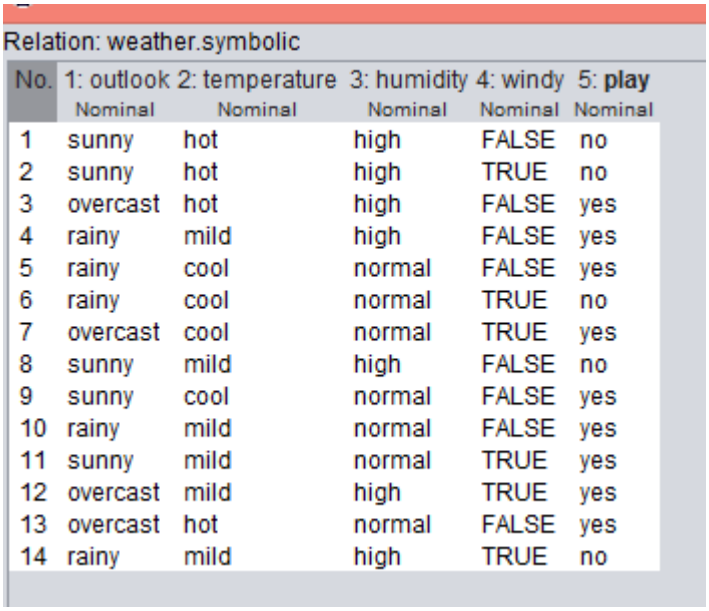
A.

Step-1. Make a File Weather-nominal.arff and save it.

Step-2. Open the arff file on weka explorer.

Step-3. Click on Edit and View the File.

Weather-nominal.arff



Relation: weather.symbolic

No.	1: outlook	2: temperature	3: humidity	4: windy	5: **play**
	Nominal	Nominal	Nominal	Nominal	Nominal
1	sunny	hot	high	FALSE	no
2	sunny	hot	high	TRUE	no
3	overcast	hot	high	FALSE	yes
4	rainy	mild	high	FALSE	yes
5	rainy	cool	normal	FALSE	yes
6	rainy	cool	normal	TRUE	no
7	overcast	cool	normal	TRUE	yes
8	sunny	mild	high	FALSE	no
9	sunny	cool	normal	FALSE	yes
10	rainy	mild	normal	FALSE	yes
11	sunny	mild	normal	TRUE	yes
12	overcast	mild	high	TRUE	yes
13	overcast	hot	normal	FALSE	yes
14	rainy	mild	high	TRUE	no

Step-4. Click on Choose Filters Button

Step-5.Under Unsupervised>Instances>RemoveWithValues

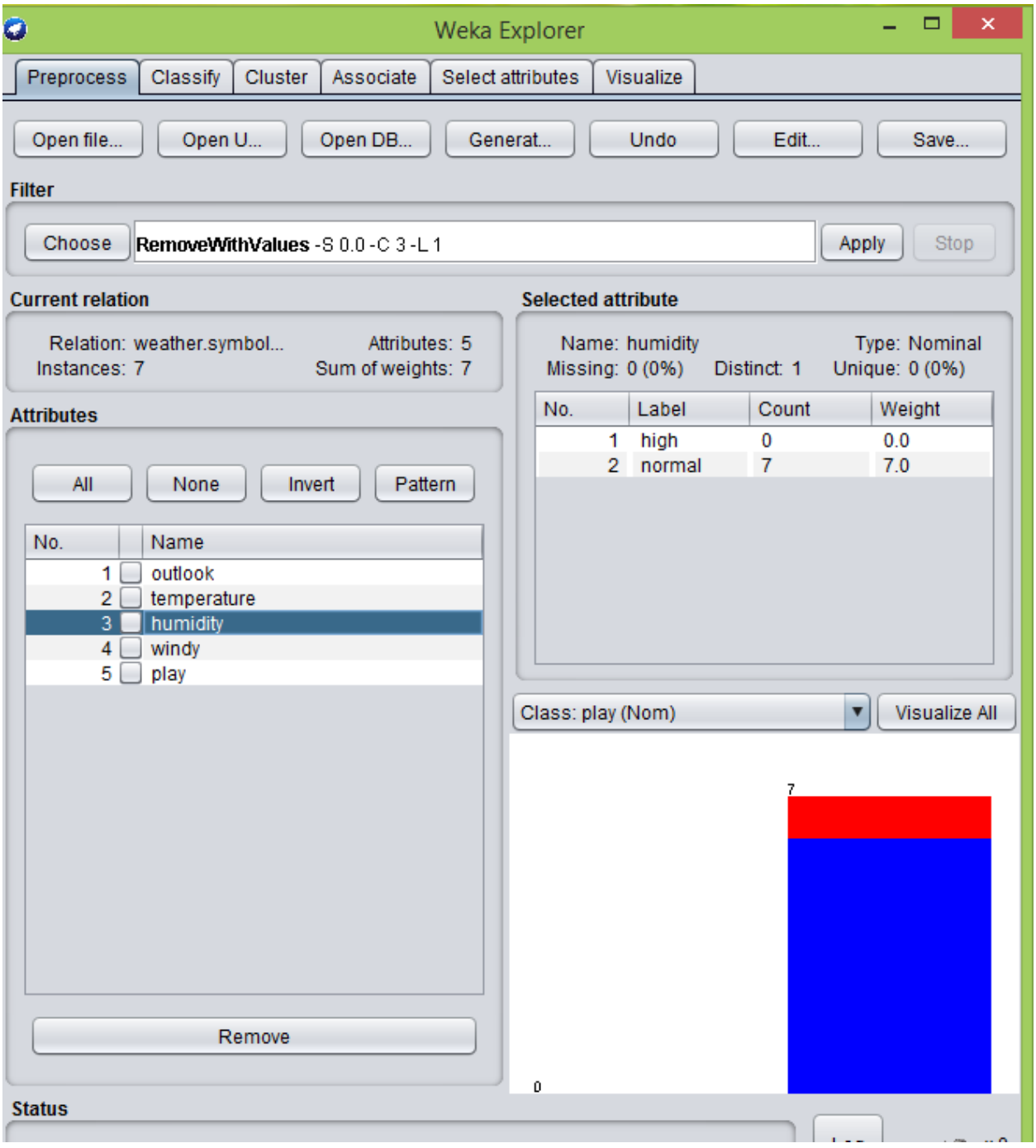
Step-6. After selecting Click on it and a dialog box appears

Step-7. Set Attributeindices as 3(humidity index)

Step-8. Set The nominal index as 1.

Step-9. Click on Ok. And then Apply.

Step-10. Click on Visualize all see the result.

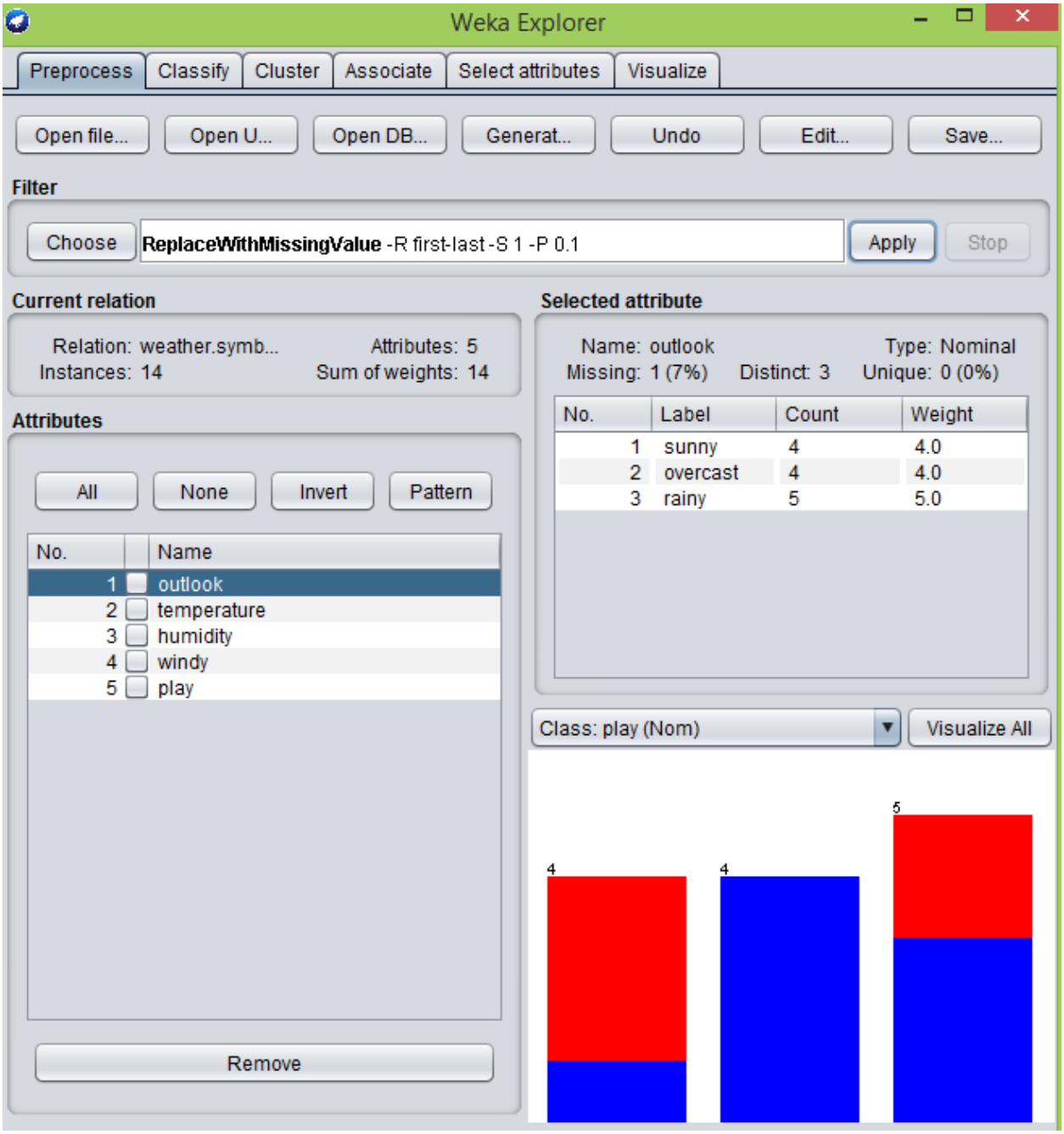


B.

Step-1. Open File WeatherNominal.arff on Weka

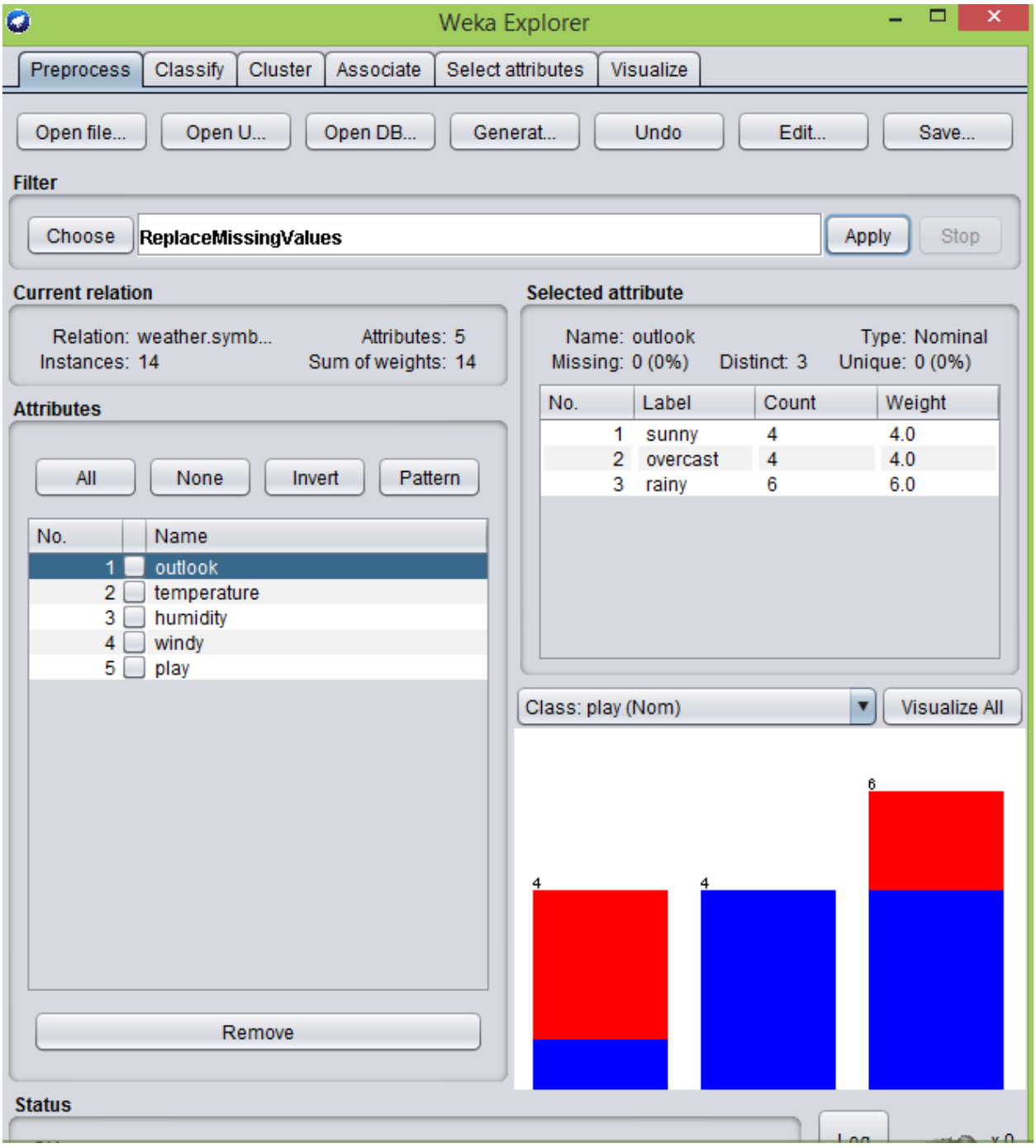
Step-2. choose > unsupervised > attributes > ReplaceWithMissingValues

Step-3. Under default setting click Apply.



Step-4 choose > unsupervised > attributes > ReplaceMissingValues

Step-5 Under default settings click Apply.



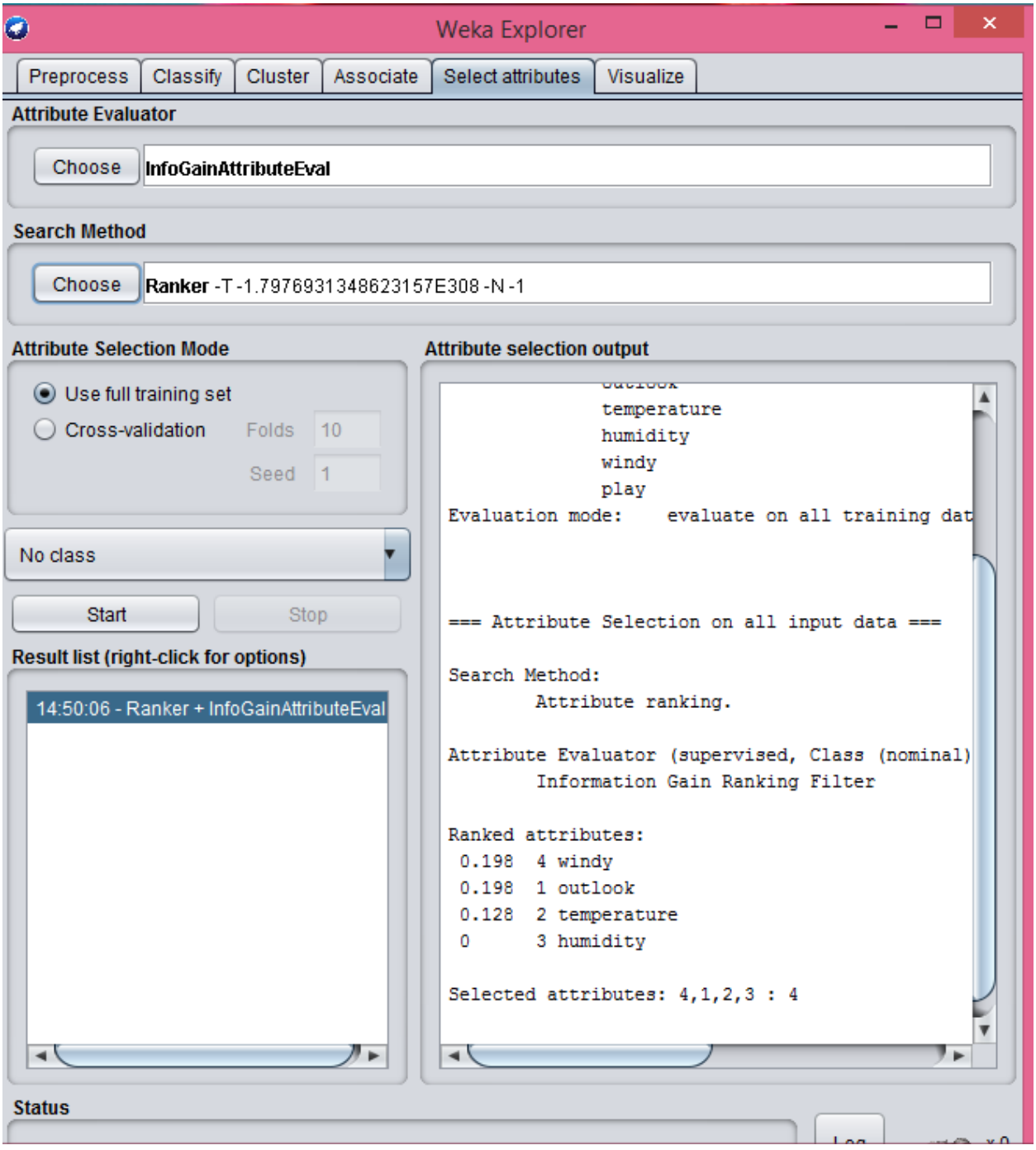
Step-6. Click on Visualize all see the result.

C.

Step-1. Go under Select Attribute Tab on Weka

Step2. Click on choose and select InfoGainAttributeEval

Step-3. Click on Yes on dialog box (Ranker Dailog box_)



Step-4 Click on Start

Attribute selection output

```
               outlook
               temperature
               humidity
               windy
               play
Evaluation mode:    evaluate on all training data



=== Attribute Selection on all input data ===

Search Method:
        Attribute ranking.

Attribute Evaluator (supervised, Class (nominal): 5 play):
        Information Gain Ranking Filter

Ranked attributes:
 0.198   4 windy
 0.198   1 outlook
 0.128   2 temperature
 0       3 humidity

Selected attributes: 4,1,2,3 : 4
```