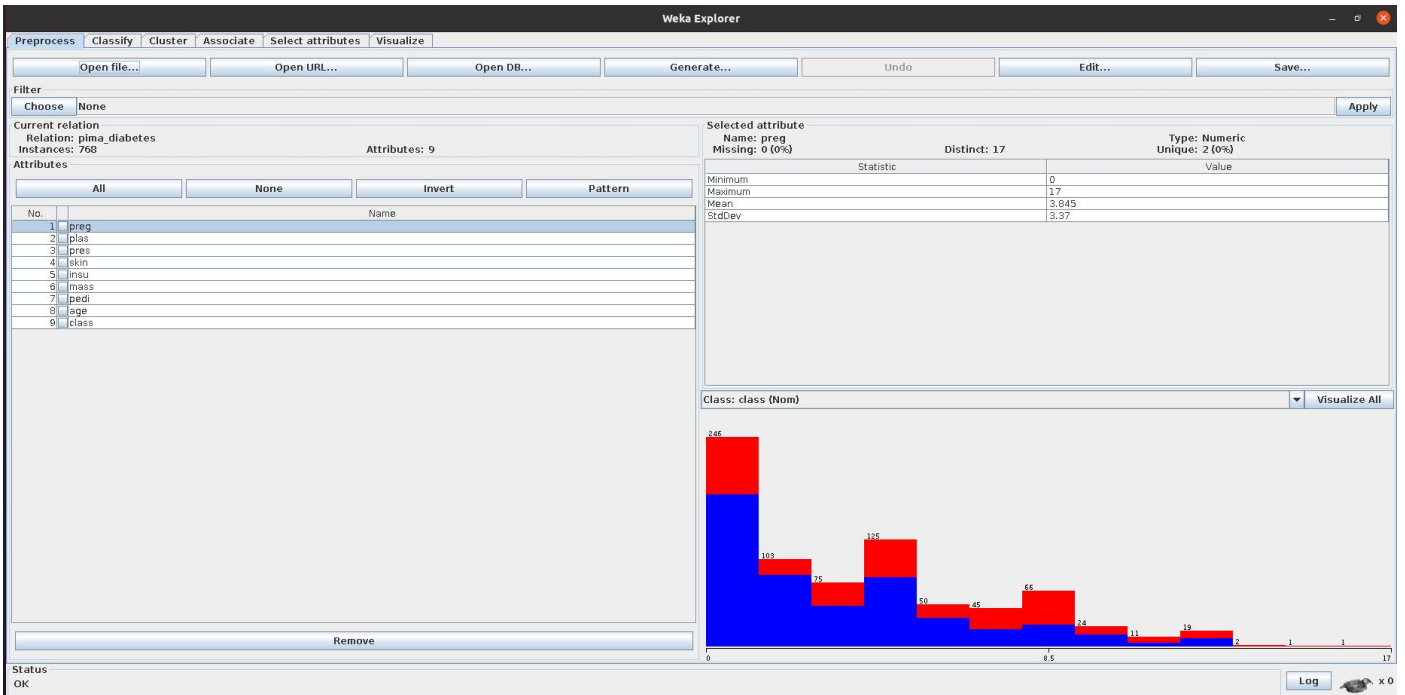# EXPERIMENT NO 6

Name: KOMAL MAHESH CHITNIS

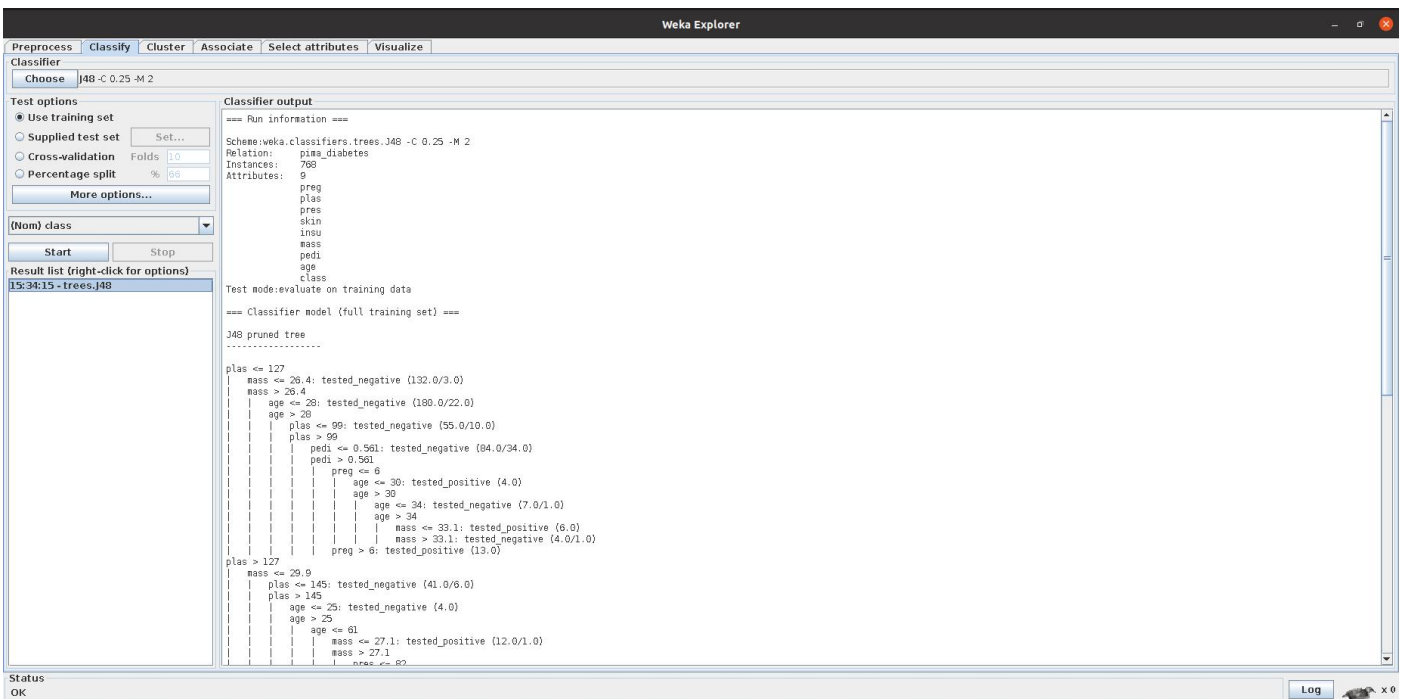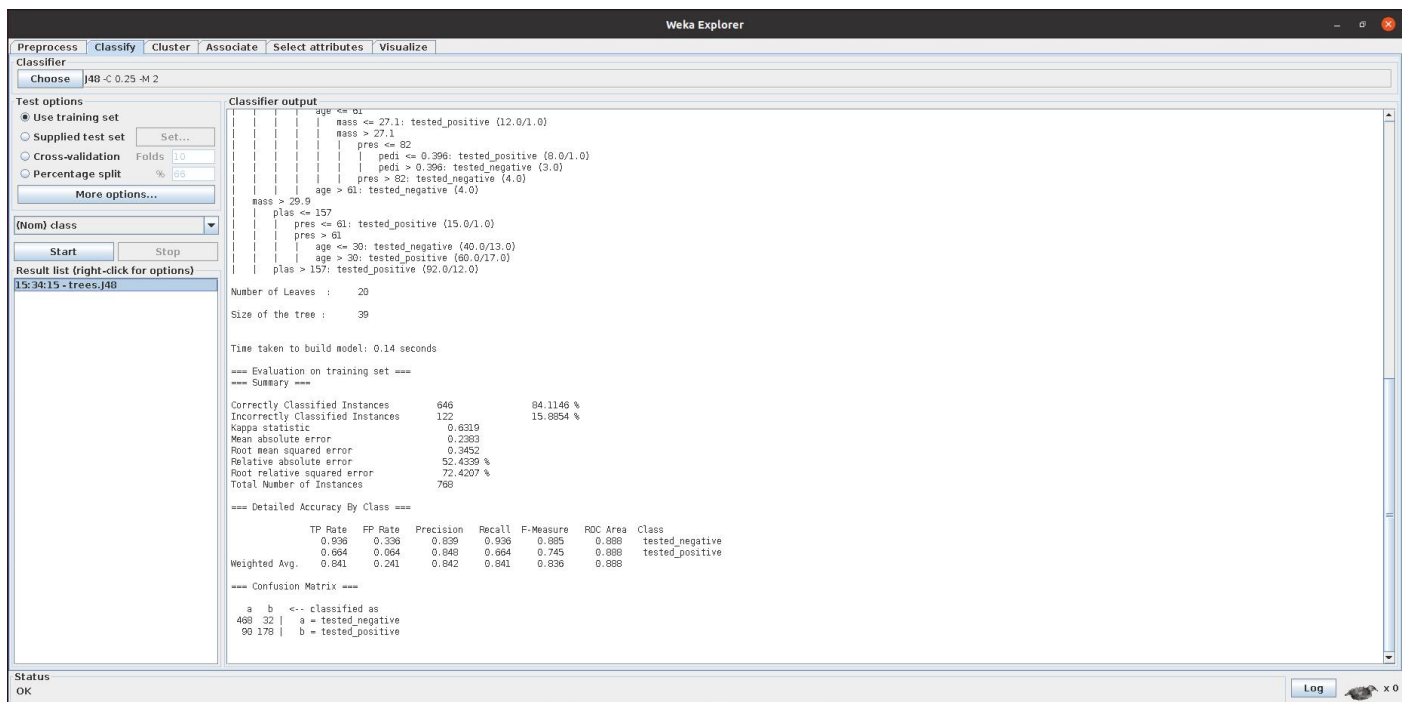**Moodle Id:** 20102068

Roll No: 26

Div: A

1. Load the data set (diabetes, Credit)

2. Use J48 classifier (C4.5) to classify the data

3. Evaluate the generated tree in terms of accuracy, Recall, Specificity

Confusion Matrix:

	a	b	Total
a	468	32	500
b	90	178	268
Total	558	210	768

Classified as

a= tested_negative

b= tested_positive

Accuracy = (TP+TN)/(P+N) = (468+178)/(500+268) = 0.84

Recall = TP/P = 468/500 = 0.94

Specificity = TN/N = 178/268 = 0.66

4. Identify the root node and its corresponding branches

Pruned tree consists of a root node plas which is further divided into a <=127 and >127.

In plas<=127 where mass<=26.4 there are tested negative (132.0/3.0).

For mass>26.4 where age<=28 people have tested_negative (180.0/22.0).

5. Write down the generated rules

Rule1: If plas<=127 AND mass<=26.4 then tested_negative

Rule2: If plas<=127 AND mass>26.4 AND age<=28 then
     tested_negative

Rule3: If plas<=127 AND mass>26.4 AND age>28 AND plas<=99 then
     tested_negative

Rule4: If plas>127 AND mass<=29.9 AND plas<=145 then
     tested_negative

Rule5: If plas>127 AND mass>29.9 AND plas<=157 AND pres<=61
     then tested_positive