To study the effect of various weight on similarity performance, several test cases has been design in order to determine the suitable weight for each attribute. Such cases are explained in the summary table 2 and 3.

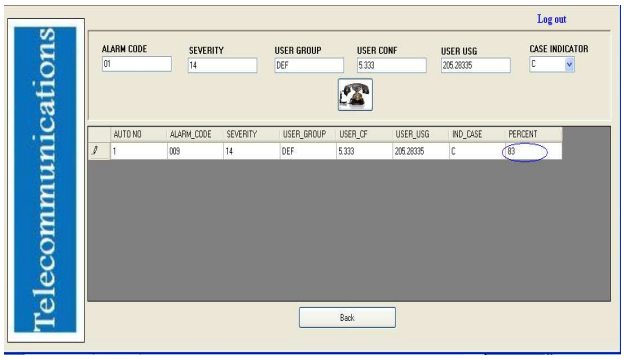

Fig 3. Similarity when all attributes are set to an initial weight of 1

Therefore the percentage similarity retrieved by the engine is 83 and upon further investigation, the weight for the first attribute is then decreased to 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2 and 0.1. The result as shown in table 2 is higher with weight value of 0.9 at a percentage of 98.33.

TABLE II
SIMILARITIES FOR FIRST ATTRIBUTE

Weight of First Attribute	Percentage Similarity
0.9	98.33
0.8	96.67
0.7	95.00
0.6	93.33
0.5	91.67
0.4	90.00
0.3	88.33
0.2	86.67
0.1	85.00

The best weight is fixed for the first attribute and further investigation is carried out for the rest of the attributes with similarities as shown in Table 3.

TABLE III
SIMILARITIES FOR THE REST OF ATTRIBUTE

Weight	Attribute 2 similarity when attribute 1 set to 0.9	Attribute 3 similarity when attribute 1 and 2 set to 0.9
0.9	96.67	95.17
0.8	95.00	93.33
0.7	93.33	91.67
0.6	91.67	90.00
0.5	90.00	88.33
0.4	88.33	86.67
0.3	86.67	85.00
0.2	85.00	83.33
0.1	83.33	81.67

Weight	Attribute 4 similarity when attribute 1,2 and 3 set to 0.9	Attribute 5 similarity when attribute 1,2,3 and 4 set to 0.9	Attribute 6 similarity when attribute 1,2,3,4 and 5 set to 0.9
0.9	94.22	91.67	90.00
0.8	93.33	90.00	88.33
0.7	91.67	88.33	86.67
0.6	90.00	86.67	85.00
0.5	88.33	85.00	83.33
0.4	86.67	83.33	81.67
0.3	85.00	81.67	80.00
0.2	83.33	80.00	78.33
0.1	81.67	78.33	76.67

It is observed that all the attributes perform well when the weight is set to 0.9. This obviously indicates that the weight for all attribute used in this study needs to be set as 0.9 in order to get 98.33% similarity performance.

V. CONCLUSIONS

This study explores the use of Case Based reasoning technique to measure based on the similarity percentage produced by the prototype, the appropriate weight for the fraud data attributes. Therefore, our experiment has shown that for higher fraud detection to be achieved in this kind of data, the weight needs to be set at 0.9.

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