

Q9

a.) Computed attributes (or) computed columns are used to calculate/computed values either in realtime during the execution of a query or during the time at which the system has available resources and store value which shall be directly used without any computations.

Some uses of computed columns are

- 1.) derive a persons annual income based on his monthly salary
- 2.) derive a persons age based on date of birth
- 3.) combining both first name and last name.

b.) Assuming we are given a table with values of cos & SIN from 0 to 360 with increments of '1'

We can create a computed column with the formula.

$((\sin * \sin) + (\cos * \cos))$ , and this column shall hold all '1's if the formula  $\sin^2\theta + \cos^2\theta$  is true, else it holds a different value.

c.) Calculating Pearson co-relation coefficient from a column of x and y values we can use the below steps.

1.) create the following computed columns.

(i)  $MEANX = AVG(X)$

(ii)  $MEANY = AVG(Y)$

(iii)  $STD X = \sqrt{SUM((X - MEANX) * (X - MEANX)) / COUNT(X)}$

(iv)  $STD Y = \sqrt{SUM((Y - MEANY) * (Y - MEANY)) / COUNT(Y)}$

(v)  $TEMP = SUM((X - MEANX) * (Y - MEANY))$

(vi)  $PEARSONCOEFF = TEMP / (STD X * STD Y)$