**FUZZY LOGIC**

It’s 47.90 c !, Actual temperature: who is correct? We all came across this news from the Hitavada of May 23rd 2013. Different agencies provided their figure of temperature & make it for a public to take care of themselves from the extreme heat. Hot summer makes us to look for the actual temperature. It is off course gone beyond 450c. Up to 450 c, we generally don’t pay head to this. If we come across the figure of the maximum temperature of the season then one does not generally believe it to hundred percent. There may be about + /- 5 percent tolerance.

It is something like fuzzy logic that we come across. Logic becomes fuzzy when the terms are relative & not absolute for e.g. Cold to warm and hot is a relative term where actual temperature makes us to believe the difference.

Many things are sometime not clearly mentioned and expressed. Sometimes they confuse us. We can also say it as they are vague & with frizzy appearance. Though such things are not clear we have to assess the same according to the strict principles of validity & we should be able to reason it correctly. It should be according to rules of logic with a rational thought. Many things are fuzzily defined & expressed. If it is wrongly notified that the temperature has fallen down by 20c people may feel it as a reality because 20c difference is not noticeable & we believe that the day’s temperature is comparatively less.

Fuzzy logic is a form of reasoning that is approximate rather than fixed and exact. Fuzzy logic variables may have a time value that ranges in degree between 0 and 1. Fuzzy logic puts us in between completely true & completely false. Fuzzy logic is applied in many fields when one has to calculate the value of truth or falsity it is sometimes more uncertain that we are how much near truth or false. Concept of a thing changes as per the interpreter. There can be different fuzzy sets of interpretations. We often come across it and we all are familiar with the example if a glass is full or empty. The concept of emptiness is subjective & depends on the observer or designer.

Temperature difference is a nice example of fuzzy logic. If there are three ranges viz: cold , warm & hot, here, which temperature is not cold & not hot or very hot, here, we can also say that the temperature is slightly warm. We have to come up with the concept of true values.

Fuzzy logic is logic of fuzziness and not a logic which is itself fuzzy. In our day to day life we often come across may such concepts where the ultimate decision revolves around the aspects like somewhere in between completely true & completely false, it is often referred to a set [0,1]. If the statement is false then it is 0 & if it is true then it is 1.

There are many examples of fuzzy logic. Many dotcom companies are marketing their products. The exhibit their product attributes, dimensions, color, design, price and other required ingredients. If customer wants to search for car with pale yellow color and if it is not mentioned in the list of color available or if customer asks for a car with yellowish color then it become fuzzy to trace the same. Similar is the case for price and other such attributes which generally are considered by the customers to search a car of their choice.

There exist certain propositions with variable answers; many people identify color in various ways. in many cases “truth values” ranges between the set [0,1] ,i.e. two extremities. We often come across the fuzziness of different logics. Many such cases are like if- then rule.

Fuzzy logic has been applied to many fields, from control theory to artificial intelligence.

Dr. K.S. Kadu