



National Institute of Technology, Rourkela

CS6475: Soft Computing Laboratory

**Assignment 2: Fuzzy Control System**

- 1) Create a fuzzy control system that models how you might choose to tip at a restaurant. When tipping, you consider the service and food quality, rated between 0 and 10. You use this to leave a tip of between 0 and 25%.

(Inputs)

**Service**

**Universe (ie, crisp value range):** How good was the service of the wait staff, on a scale of 0 to 10?

**Fuzzy set (ie, fuzzy value range):** poor, acceptable, amazing

**Food quality**

**Universe:** How tasty was the food, on a scale of 0 to 10?

**Fuzzy set:** bad, decent, great

(Outputs)

Tip

**Universe:** How much should we tip, on a scale of 0% to 25%

**Fuzzy set:** low, medium, high

(Rules)

1. IF the service was good or the food quality was good, THEN the tip will be high.
2. IF the service was average, THEN the tip will be medium.
3. IF the service was poor and the food quality was poor THEN the tip will be low.

Usage

What would the tip be in the following circumstances:

- Food quality was 6.5
- Service was 9.