•E.g.:

Experiment	Random Variables	Possible Values for Random variables
•operate a shop for a day •Sell of house •Quality of silicon implant	Number of customers Customer gender Number of defective implants	0,1,2,3,…. 0 = male and 1=female 0,1,2,….99,100

Characteristic if discrete random variables

•Probability distribution of an outcome could be measured with

nPr = n! prqn-r , n = trail, r = success
r!(n-r)!

•The mean or expected value of probability is define as $\mu = E(X) = \Sigma Xi\ P(Xi)$

•Variance of a discrete random variable is $\sigma 2 = \Sigma[Xi - E(X)]2\ P(Xi)$

example

•Suppose someone flip a coin two times.

1.What the probability distribution for this experiment

2.Expected value of probability distribution

3.The variance

Binomial Distribution

•A discrete distribution where only two possibilities on any one trial

•it's a countable finite distribution

•Assumption:

–Experiment involves n identical trials

–Each trial has only two possible outcomes denoted as a success or failure

–Each trial is independent of previous trials

–p & q is constant throughout the experiment