OTSU Thresholding:

Image Thresholding : Image processing method used to convert grey scale image into binary image.

OTSU : OTSU thresholding is a famous (global) thresholding technique. According to my understanding OTSU method uses histogram of particular image for thresholding process. It works only on bimodal images (where there is foreground and background). It takes a thresholding value and converts all the values below that to 0 and all the values above that to 1. In technical words Image contains two classes of pixels following bi-modal histogram and then calculates optimum threshold separating two classes so that their combined intra class variance is minimal or inter class variance is maximal.

Algorithm : 1) Compute histogram and probabilities of each intensity level.
2) Setup initial weight (ω_i) & mean (μ_i)
3) Loop through all threshold value and update weight and mean. and calculate variance ($\sigma_b^2(t)$)
4) Desired threshold corresponds to maximum variance.

Advantages :
- It's quite fast as it operates on histogram
- Code is easy.

Disadvantages :
- The image should be bimodal.
- Image doesnot work well with variable illumination.