HOMEWORK DOCUMENTATION

This homework is based on Linear regression to classify query data.Actually in this homework I tried get approached homework to similar example in real life.For example my homework do basically classify tumor level that describe chance to metastasis. Example in training set (x1,x2,x3,x4,y)x1=weight of tumor
x2=volume of tumor
x3=malignant level
x4=level of organ with tumor
y=metastasis chance level

Multivariate Linear Regression

Hypothesis: $h_\theta(x) = \theta^T x = \theta_0 x_0 + \theta_1 x_1 + \theta_2 x_2 + \cdots + \theta_n x_n$

Parameters: $\theta_0, \theta_1, \ldots, \theta_n$

Cost function:

$$J(\theta_0, \theta_1, \ldots, \theta_n) = \frac{1}{2m} \sum_{i=1}^{m} (h_\theta(x^{(i)}) - y^{(i)})^2$$

Gradient descent:

Repeat {

$\theta_j := \theta_j - \alpha \frac{\partial}{\partial \theta_j} J(\theta_0, \ldots, \theta_n)$

} (simultaneously update for every $j = 0, \ldots, n$)

My classification is not exactly classify of variable,my function produces hypotesis function.and than this function calculate estimates of query data.finally I take lowerbound of estimations.