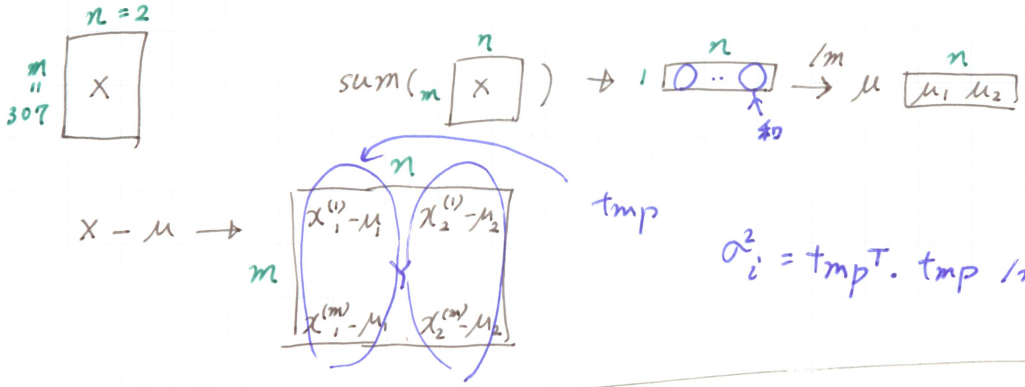
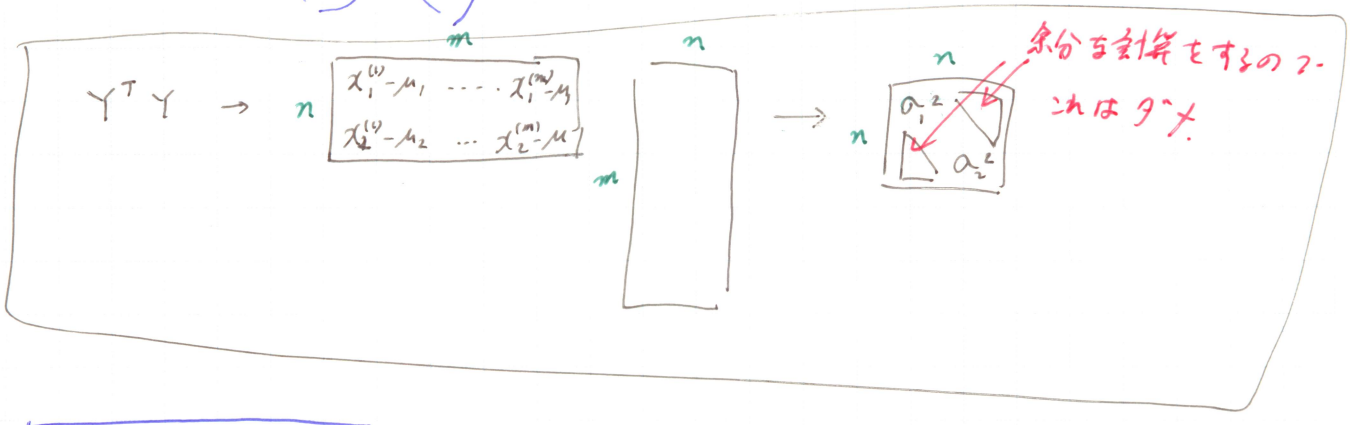
Week 9　　Ex 8　　1

1. サーバの動作　　feature : through-put , latency , $m = 307$
最初は2次元で。　後は many dimensions で。

ガウス分布（正規分布）　$p(x;\mu,\sigma^2) = \frac{1}{\sqrt{2\pi}\sigma}\exp\left(-\frac{(x-\mu)^2}{2\sigma^2}\right)$

1.2 estimateGaussian.m

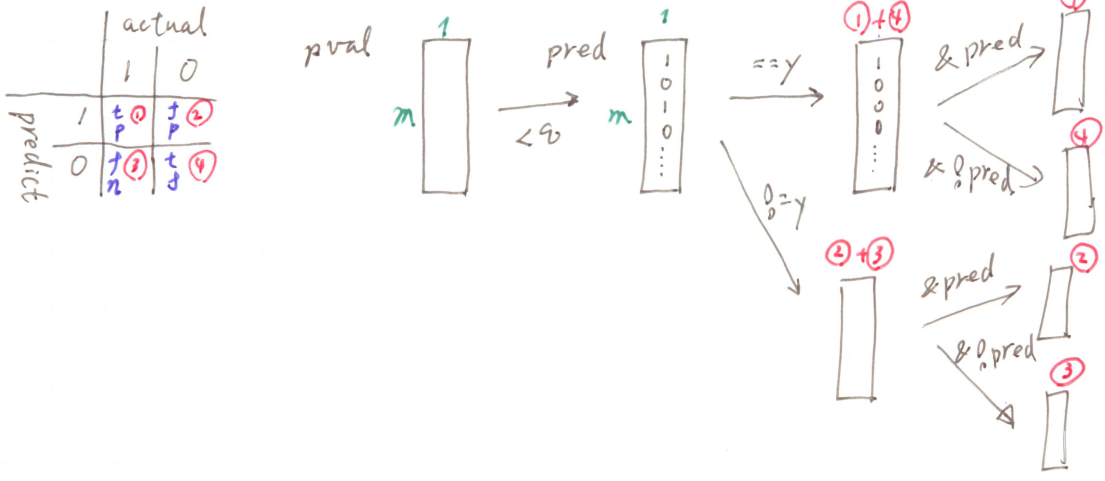




1.3 selectThreshold.m　　ε , F1 score を return する

$p(x_{cv}^{(i)}) < \varepsilon$ ならば anomaly

εを変更する loop は既に記述してあるので、全てのCVセットを試す



Week 9　　Ex8　　2

1.4 High dimensional dataset

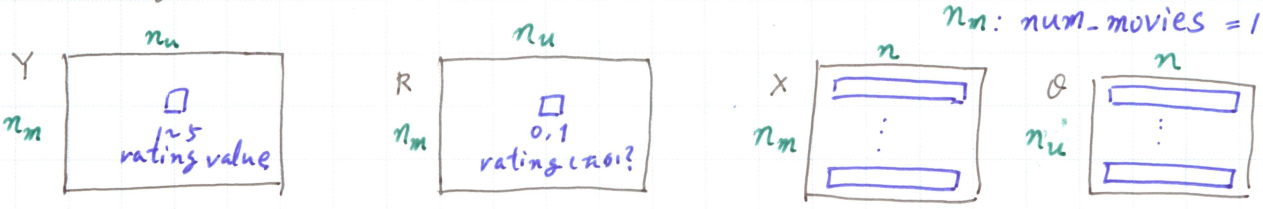
11 features

2. Recommender System

rating = 1 ~ 5 ,　　$n_u = 943$,　　$n_m = 1682$

n : feature の数 = 100
n_u : num_users = 943
n_m : num_movies = 1682

2.1 ex8_cofi.m →

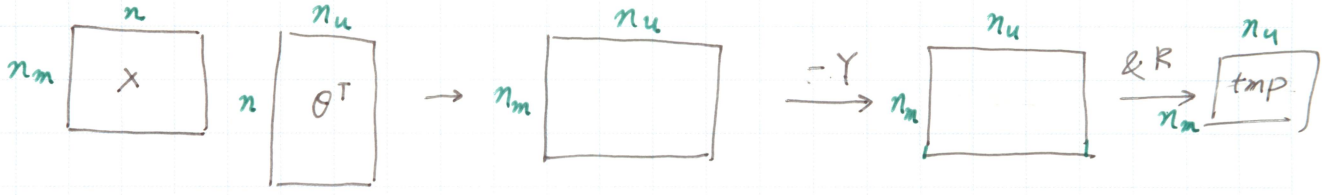


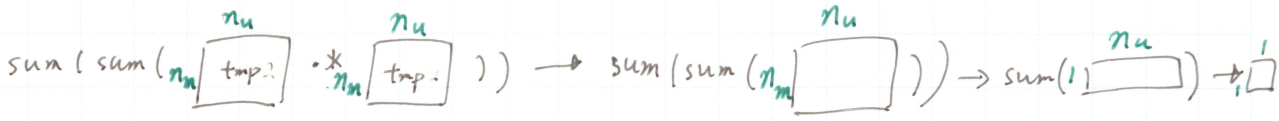
2.2 regularization なしの cost function

$y^{(i,j)} = (\theta^{(j)})^T x^{(i)}$　　movie i にする user j の rating を predict

cofiCostFunc.m

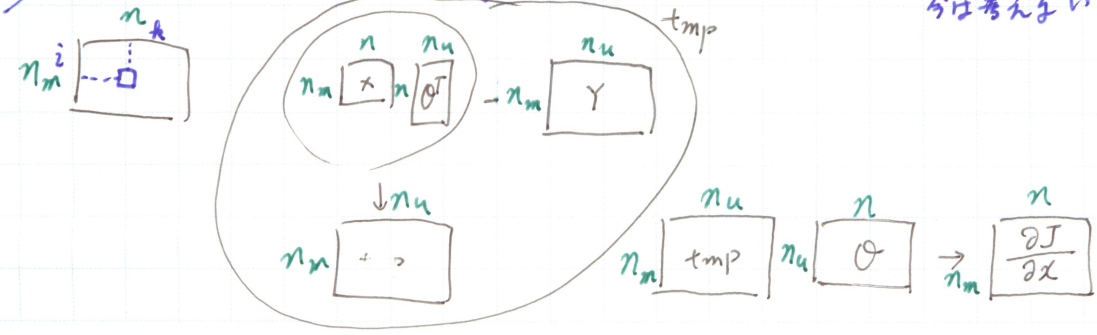
J





$$\frac{\partial J}{\partial x} \qquad x_k^{(i)} := x_k^{(i)} - \alpha \left(\sum_j \left((\theta^{(j)})^T x^{(i)} - y^{(i,j)} \right) \theta_k^{(j)} + \lambda x_k^{(i)} \right)$$

今は考えない



Week 9　　Ex 8　　3

$$\frac{\partial J}{\partial \theta} \qquad \theta_k^{(j)} := \theta_k^{(j)} - \alpha \left(\sum_i \left((\theta^{(j)})^T x^{(i)} - y^{(i,j)} \right) x_k^{(i)} + \lambda \theta_k^{(j)} \right)$$

今は考えない