partial codes in week_9 code assignment.

> written by *VincentX3*, Dec.02.18
> about *anomaly detection* and *collective filtering*.

estimateGaussian.m

```
mu=(sum(X)/m)';
sigma2=(sum((X-mu').^2)/m)';
```

selectThreshold.m

```
    condition_p=sum(yval==1);
    pval_logical=pval<=epsilon;
    prediction_p=sum(pval_logical==1);

    %compute fp
    temp=pval_logical+yval;
    fp=sum(temp==2);

    recall=fp/condition_p;
    precision=fp/prediction_p;
    F1=(2*precision*recall)/(precision+recall);
```

here also can compute `fp` by

```
  fp=sum((pval_logical==1)&&(yval==1));
```

cofiCostFunc.m

```
reg = lambda / 2 * (sum(sum(Theta .^2 )) + sum(sum(X .^2 )));
J = 1 / 2 * sum(sum(R .* (X * Theta' - Y) .^2 )) + reg;
X_grad = R .* (X * Theta' - Y) * Theta + lambda * X;
Theta_grad = (R .* (X * Theta' - Y))' * X + lambda * Theta;
```