Practice lab: Collaborative Filtering Recommender Systems

In this exercise, you will implement collaborative filtering to build a recommender system for movies.

Outline

NOTE: *To prevent errors from the autograder, you are not allowed to edit or delete non-graded cells in this lab. Please also refrain from adding any new cells.* ***Once you have passed this assignment*** *and want to experiment with any of the non-graded code, you may follow the instructions at the bottom of this notebook.*

Packages

We will use the now familiar NumPy and Tensorflow Packages.

In [1]:
```
import numpy as np
import tensorflow as tf
from tensorflow import keras
from recsys_utils import *
```

1 - Notation

General Notation	Description	Python (if any)
$r(i, j)$	scalar; = 1 if user j rated movie i = 0 otherwise	
$y(i, j)$	scalar; = rating given by user j on movie i (if r(i,j) = 1 is defined)	
$\mathbf{w}^{(j)}$	vector; parameters for user j	
$b^{(j)}$	scalar; parameter for user j	