13 – Recommender Systems

Assume the following ratings of movies by 6 users (A-F), the average ratings per movie, and the predicted ratings for David from some unspecified collaborative filtering algorithm.

	The Matrix	Gone with the Wind	Jack and Jill	Planes	Rocky IV
Alice	2	5	2	4	2
Bob	3		1	4	2
Christine	4	5	2	5	3
David	**5**		**2**	**2**	**4**
Elaine	5	3	1		3
Frank		3	1	3	
AVERAGE	3.8	4	1.5	3.6	2.8
Predicted for David	**4.5**	**3**	**2**	**3**	**3.5**

[Q2] Compute the distance of Frank to everybody else. Who has the highest distance from Frank?

- distance(Alice, Frank) = 4
- distance(Bob, Frank) = 1
- distance(Christine, Frank) =
- distance(David, Frank) =
- distance(Elaine, Frank) =

[Q4 (Evaluating Quality)]
Given David's actual rankings, compute the **Mean Absolute Error** if we are to use the Predicted values for David's rankings (last row). The formula for Mean Absolute Error is:

$$\text{MAE} = \frac{1}{N} \times \sum_{i=1}^{N} | \, p_i - q_i \, |$$