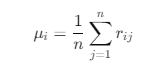
**Converting Python Code to Mathematical Formula: Breaking Down the Code**

**Mean User Rating**

mean\_user\_ratings = ratings. Mean(axis=1)



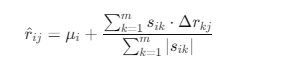
**Ratings Difference**

ratings\_diff = (ratings - mean\_user\_rating [: np. new axis])



**Prediction**

pred = mean\_user\_rating[:, np.newaxis] + similarity.dot(ratings\_diff) / np.array([np.abs(similarity).sum(axis=1)]).T



pred = ratings.dot(similarity) / np.array([np.abs(similarity).sum(axis=1)])

