Project Title	**Building user-based recommendation model for Amazon**
Project Description	The dataset provided contains movie reviews given by Amazon customers. Reviews were given between May 1996 and July 2014. **Data Dictionary** UserID – 4848 customers who provided a rating for each movie Movie 1 to Movie 206 – 206 movies for which ratings are provided by 4848 distinct users **Data Considerations** - All the users have not watched all the movies and therefore, all movies are not rated. These missing values are represented by NA. - Ratings are on a scale of -1 to 10 where -1 is the least rating and 10 is the best.
Q.1	**Which movies have maximum views/ratings?**
Solution	Movie with highest review and ratings – Movie127 (views – 2313.0 & ratings - 9511)
Q.2	**What is the average rating for each movie? Define the top 5 movies with the maximum ratings.**
Solution	Movie1, Movie55, Movie131, Movie132 and Movie133 with rating of 5.
Q.3	**Define the top 5 movies with the least audience.**
Solution	Movie1, Movie68, Movie69, Movie71 and Movie 145 with audience of 1.0
Q.4	**Build a recommendation model on training data**
Solution	

	user_id	Movies	Rating
0	A3R5OBKS7OM2IR	Movie1	5.0
1	AH3QC2PC1VTGP	Movie1	NaN
2	A3LKP6WPMP9UKX	Movie1	NaN
3	AVIY68KEPQ5ZD	Movie1	NaN
4	A1CV1WROP5KTTW	Movie1	NaN
...	...	...	...
998683	A1IMQ9WMFYKWH5	Movie206	5.0
998684	A1KLIKPUF5E88I	Movie206	5.0
998685	A5HG6WFZLO10D	Movie206	5.0
998686	A3UU690TWXCG1X	Movie206	5.0
998687	AI4J762YI6S06	Movie206	5.0

RMSE: 1.0269
MAE: 1.0124
Evaluating RMSE, MAE of algorithm SVD on 3 split(s).

	Fold 1 Fold 2 Fold 3 Mean Std RMSE (testset) 1.0254 1.0260 1.0269 1.0261 0.0006 MAE (testset) 1.0118 1.0120 1.0124 1.0121 0.0003 Fit time 174.36 172.06 207.23 184.55 16.06 Test time 22.19 18.61 12.30 17.70 4.09 Out[21]: {'test_rmse': array([1.02543384, 1.02595357, 1.02691971]), 'test_mae': array([1.01178686, 1.01196333, 1.01243701]), 'fit_time': (174.36097288131714, 172.06184148788452, 207.23085284233093), 'test_time': (22.192269325256348, 18.607064247131348, 12.298703670501709)} Evaluating RMSE, MAE of algorithm SVD on 3 split(s). Fold 1 Fold 2 Fold 3 Mean Std RMSE (testset) 0.0853 0.0850 0.0872 0.0858 0.0010 MAE (testset) 0.0097 0.0100 0.0099 0.0099 0.0001 Fit time 130.29 127.28 127.39 128.32 1.39 Test time 11.31 10.09 8.87 10.09 1.00 {'test_rmse': array([0.08534581, 0.08498599, 0.08716732]), 'test_mae': array([0.00966222, 0.00999086, 0.00992907]), 'fit_time': (130.28770685195923, 127.2842800617218, 127.3852858543396), 'test_time': (11.314647197723389, 10.09357762336731, 8.871507406234741)} ---------- user: A3R5OBKS7OM2IR item: Movie1 r_ui = 5.00 est = 4.39 {'was_impossible': False} user: A3R5OBKS7OM2IR item: Movie1 r_ui = 5.00 est = 4.39 {'was_impossible': False} ----------