



# Recenzije filmova na IMDB platformi

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# DOMEN

- ▶ Domen pripadnosti ove teme je filmska industrija, gde se za filmove ostavljaju ocene i recenzije i time se na osnovu velikog broja glasova ocenjuje film.
- ▶ Postoje razni parametri po kojima se film može oceniti, u ovom slučaju se uzima samo generalna ocena filma.

# MOTIVACIJA

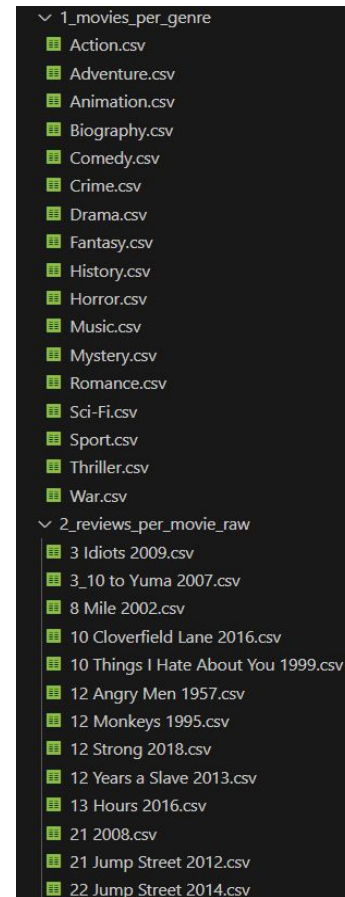
- ▶ Platforma sa informacijama o filmovima, ocenama i recenzijama nema dovoljni uvid u statistiku potrebnu korisniku da bi istinski znao o kakvom se filmu radi.
- ▶ Ovo rešenje će na neki način uvesti neke šire statistike i smernice za korisnike.

# CILJEVI

- ▶ Aplikacija treba da nudi korisniku uvid u statistiku o filmu, ocenama i recenzijama
- ▶ Aplikacija treba da prihvata i nove podatke, obradi ih i nudi mogućnosti korisniku da ima uvid u nove podatke

# PODACI ZA BATCH OBRADU

- ▶ Podaci o filmovima se nalaze u direktorijumu „1\_movies\_per\_genre“ gde su informacije postavljene u CSV datoteke sa imenom žanra kojem film pripada.  
U slučaju da film pripada više žanrova, film će se može ponoviti u svakoj datoteci pod imenom žanra kojem film pripada.
- ▶ Podaci o recenzijama za filmove se nalazi u direktorijumu „2\_reviews\_per\_movie\_raw“, gde za svaki film postoji posebna CSV datoteka sastavljena u formatu „{ime filma} {godina kad je film objavljen}“.
- ▶ Podaci na linku:  
<https://ieee-dataport.org/open-access/imdb-movie-reviews-dataset>



```
1_movies_per_genre
├── Action.csv
├── Adventure.csv
├── Animation.csv
├── Biography.csv
├── Comedy.csv
├── Crime.csv
├── Drama.csv
├── Fantasy.csv
├── History.csv
├── Horror.csv
├── Music.csv
├── Mystery.csv
├── Romance.csv
├── Sci-Fi.csv
├── Sport.csv
├── Thriller.csv
└── War.csv
2_reviews_per_movie_raw
├── 3 Idiots 2009.csv
├── 3_10 to Yuma 2007.csv
├── 8 Mile 2002.csv
├── 10 Cloverfield Lane 2016.csv
├── 10 Things I Hate About You 1999.csv
├── 12 Angry Men 1957.csv
├── 12 Monkeys 1995.csv
├── 12 Strong 2018.csv
├── 12 Years a Slave 2013.csv
├── 13 Hours 2016.csv
├── 21 2008.csv
├── 21 Jump Street 2012.csv
└── 22 Jump Street 2014.csv
```



# PODACI O FILMOVIMA

name	year	movie Rated	run_lengt	genres	release_date	rating	num_rate	num_reviews	review_url			
The Dark Knight	2008	PG-13	2h 32min	Action; Crime; Drama;	18 July 2008 (USA)	9	2224522	6836	<a href="https://www.imdb.com/title/tt0468569/reviews/">https://www.imdb.com/title/tt0468569/reviews/</a>			
Inception	2010	PG-13	2h 28min	Action; Adventure; Sci-Fi;	16 July 2010 (USA)	8.8	1981675	3820	<a href="https://www.imdb.com/title/tt1375666/reviews/">https://www.imdb.com/title/tt1375666/reviews/</a>			
The Matrix	1999	R	2h 16min	Action; Sci-Fi;	31 March 1999 (USA)	8.7	1619761	4281	<a href="https://www.imdb.com/title/tt0133093/reviews/">https://www.imdb.com/title/tt0133093/reviews/</a>			
The Lord of the Rings: The Fellowship of the Ring	2001	PG-13	2h 58min	Action; Adventure; Drama;	19 December 2001 (USA)	8.8	1609165	5365	<a href="https://www.imdb.com/title/tt0120737/reviews/">https://www.imdb.com/title/tt0120737/reviews/</a>			
The Dark Knight Rises	2012	PG-13	2h 44min	Action; Adventure;	20 July 2012 (USA)	8.4	1470329	2979	<a href="https://www.imdb.com/title/tt1345836/reviews/">https://www.imdb.com/title/tt1345836/reviews/</a>			
Gladiator	2000	R	2h 35min	Action; Adventure; Drama;	5 May 2000 (USA)	8.5	1297718	2636	<a href="https://www.imdb.com/title/tt0172495/reviews/">https://www.imdb.com/title/tt0172495/reviews/</a>			
Batman Begins	2005	PG-13	2h 20min	Action; Adventure;	15 June 2005 (USA)	8.2	1269027	2885	<a href="https://www.imdb.com/title/tt0372784/reviews/">https://www.imdb.com/title/tt0372784/reviews/</a>			
The Avengers	2012	PG-13	2h 23min	Action; Adventure; Sci-Fi;	4 May 2012 (USA)	8	1236048	1929	<a href="https://www.imdb.com/title/tt0848228/reviews/">https://www.imdb.com/title/tt0848228/reviews/</a>			
Star Wars: Episode IV - A New Hope	1977	PG	2h 1min	Action; Adventure; Fantasy	25 May 1977 (USA)	8.6	1197132	1834	<a href="https://www.imdb.com/title/tt0076759/reviews/">https://www.imdb.com/title/tt0076759/reviews/</a>			
Star Wars: Episode V - The Empire Strikes Back	1980	PG	2h 4min	Action; Adventure; Fantasy	20 June 1980 (USA)	8.7	1124834	1214	<a href="https://www.imdb.com/title/tt0080684/reviews/">https://www.imdb.com/title/tt0080684/reviews/</a>			
Avatar	2009	PG-13	2h 42min	Action; Adventure; Fantasy	18 December 2009 (USA)	7.8	1096125	3415	<a href="https://www.imdb.com/title/tt0499549/reviews/">https://www.imdb.com/title/tt0499549/reviews/</a>			
Guardians of the Galaxy	2014	PG-13	2h 1min	Action; Adventure; Comedy	1 August 2014 (USA)	8	1017405	1390	<a href="https://www.imdb.com/title/tt2015381/reviews/">https://www.imdb.com/title/tt2015381/reviews/</a>			
V for Vendetta	2005	R	2h 12min	Action; Drama; Sci-Fi;	17 March 2006 (USA)	8.2	1002944	2205	<a href="https://www.imdb.com/title/tt0434409/reviews/">https://www.imdb.com/title/tt0434409/reviews/</a>			
Léon: The Professional	1994	R	1h 50min	Action; Crime; Drama;	18 November 1994 (USA)	8.5	999596	1193	<a href="https://www.imdb.com/title/tt0110413/reviews/">https://www.imdb.com/title/tt0110413/reviews/</a>			
Pirates of the Caribbean: The Curse of the Black Pearl	2003	PG-13	2h 23min	Action; Adventure; Fantasy	9 July 2003 (USA)	8	997264	2186	<a href="https://www.imdb.com/title/tt0325980/reviews/">https://www.imdb.com/title/tt0325980/reviews/</a>			
Kill Bill: Vol. 1	2003	R	1h 51min	Action; Crime; Thriller;	10 October 2003 (USA)	8.1	970439	2272	<a href="https://www.imdb.com/title/tt0266697/reviews/">https://www.imdb.com/title/tt0266697/reviews/</a>			
Terminator 2: Judgment Day	1991	R	2h 17min	Action; Sci-Fi;	3 July 1991 (USA)	8.5	968504	1269	<a href="https://www.imdb.com/title/tt0103064/reviews/">https://www.imdb.com/title/tt0103064/reviews/</a>			
Star Wars: Episode VI - Return of the Jedi	1983	PG	2h 11min	Action; Adventure; Fantasy	25 May 1983 (USA)	8.3	922278	828	<a href="https://www.imdb.com/title/tt0086190/reviews/">https://www.imdb.com/title/tt0086190/reviews/</a>			
Iron Man	2008	PG-13	2h 6min	Action; Adventure; Sci-Fi;	2 May 2008 (USA)	7.9	915640	1319	<a href="https://www.imdb.com/title/tt0371746/reviews/">https://www.imdb.com/title/tt0371746/reviews/</a>			
Deadpool	2016	R	1h 48min	Action; Adventure; Comedy	12 February 2016 (USA)	8	876091	1440	<a href="https://www.imdb.com/title/tt1431045/reviews/">https://www.imdb.com/title/tt1431045/reviews/</a>			
Raiders of the Lost Ark	1981	PG	1h 55min	Action; Adventure;	12 June 1981 (USA)	8.4	859523	931	<a href="https://www.imdb.com/title/tt0082971/reviews/">https://www.imdb.com/title/tt0082971/reviews/</a>			
Mad Max: Fury Road	2015	R	2h	Action; Adventure; Sci-Fi;	15 May 2015 (USA)	8.1	848011	1990	<a href="https://www.imdb.com/title/tt1392190/reviews/">https://www.imdb.com/title/tt1392190/reviews/</a>			

# PODACI O FILMOVIMA (POLJA)

- ▶ **name** – ime filma
- ▶ **year** – godina kada je film izašao
- ▶ **movie\_rated** – Za koji uzrast je film namenjen (R,PG,PG-13...)
- ▶ **run\_length** – Trajanje filma (format: Xh [Xmin])
- ▶ **release\_date** – Datum izlaska filma i u kojoj državi
- ▶ **genres** – žanrovi kojima pripada film odvojeni ;
- ▶ **rating** – ocena na osnovu ocena koje postoje (nema podatak o svim ocenama)
- ▶ **num\_raters** – broj ljudi koji su ostavili ocenu
- ▶ **num\_reviews** – broj ljudi koji su ostavili recenzije
- ▶ **review\_url** – link do samih recenzija



1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

username	rating	helpful	total	date	title	review
adrien_ngoc_1701	10	109	118	01-Mar-19	A one-of-	My 3rd
clipturnity	9	1765	2069	22-Aug-10	Matrix	I'd like to keep my review rather to the point.  Pros: 1. its theme - dream is a fascinating topic to say the
naman-avastol	10	2008	2860	10-Jul-10	Insanely	What is the most resilient parasite? An Idea! Yes, Nolan has created something with his unbelievably, incredibly a
siddhantadlakha	10	1008	1526	15-Jul-10		Dom Cobb leads a highly skilled team, specializing in stealing secrets from people's minds by entering their drea
hitchcockthelegend	9	85	120	07-Apr-11	This is	Inception is written, produced, and directed by Christopher Nolan. The film stars Leonardo DiCaprio, Ken Watanab
D_Burke	10	1242	1961	13-Jul-10	In a	Films about dreams and the subconscious are usually not very straightforward and almost always weird. "Inceptio
drakula2005	10	1199	1918	09-Jul-10		I saw Memento very recently, something that turned out to be a great miss.I saw it again, just to make a couple of
marcusdean118	10	825	1319	13-Jul-10	Nolan at	Inception is truly one of a kind. A concept which has long gestated in Christopher Nolan's mind, his eye for drama
technofunkie	10	1494	2441	12-Jul-10	Nolan's	Usually I try to be careful with over hyping a film, or setting the expectations too high, as film geeks all are guilty f
howemonika	10	738	1192	12-Jul-10	Amazing	I had the privilege of seeing this movie before it came out, and, like most of DiCaprio's films, it blew me away. 
chaaa	10	726	1185	12-Jul-10	The	What do we ask for in a summer blockbuster? What is it that incites hysteria this time every year for whatever drc
dvc5159	8	898	1473	15-Jul-10	Sci-fi	I'm nearly at a loss for words. Just when you thought Christopher Nolan couldn't follow up to "The Dark Knight", h
spaaw	10	516	879	17-Jul-10		Many of us, not least those who populate the online world with movie reviews, observations and criticisms, are a
Carl_Tait	5	349	603	25-Jul-10	Good	The central idea of "Inception" is an interesting one: technology exists to enter other people's dreams in order to
dario_van_kuschn	6	488	853	20-Jul-10		I cannot ignore facts. I cannot ignore mistakes and plot holes, bad writing, or bad marketing. I cannot ignore hype,
murtaza_mma	9	148	249	26-Jul-10	A	Surrealism can appear to be ineffably bizarre, or inquisitively titillating, depending purely on the viewer's intelle
Egg_MacGuffin	3	515	956	19-Jul-10	You are	Unless you call this movie a masterpiece. Then you are.  Damn 1,000 word limit. Gotta make this quick.<l
seabrapalma	2	402	744	24-Aug-10		I will try not to repeat some of what others have so brilliantly written in some reviews. I just add this in order to c
RIK-22	1	582	1093	26-Jul-10	Insipid	I have to say to make such an impressive trailer and such an uninteresting film, takes some doing.  Here
mach1ne	4	330	612	20-Jul-10	Boring,	This film really let me down.  I didn't expect a great film but I expected something that was at least 'OK'.



# PODACI O RECENZIJAMA (POLJA)

- ▶ **username** – korisničko ime korisnika koji je uneo recenziju
- ▶ **rating** – ocena koju je korisnik ostavio uz recenziju
- ▶ **helpful** – broj ljudi koji je označio da je recenzija od pomoci
- ▶ **total** – broj ukupnih oznaka za recenziju da li bila od pomoći ili ne
- ▶ **date** – datum kada je uneta recenzija
- ▶ **title** – naslov recenzije
- ▶ **review** – tekst recenzije

# PRIMER PITANJA ZA BATCH OBRADU

1. Koliko filmova je izašlo X godine i koja je prosečna ocena za te filmove?
2. Prosečne ocene filmova po žanrovima?
3. Prosečno trajanje filmova po žanrovima?
4. Najduži i najkraći filmovi?
5. Lista filmova koja podleže kriterijumu (žanr, trajanje, ocena)
6. Recenzije  $\geq$  ocene X za film
7. Sve recenzije korisnika sa username X
8. Prosečna dužina teksta recenzije za filmove
9. Medijana ocena recenzija za filmove
10. Statistika recenzija po žanrovima filmova

# PODACI ZA STREAMING OBRADU

- ▶ Podaci sadrže spisak filmova i ostavljenih ocena za filmove
- ▶ Podaci na linku:  
<https://www.kaggle.com/datasets/rounakbanik/the-movies-dataset/>
- ▶ Podaci iz početnog izvora su malo sređeni u smislu da bude skup istih filmova zbog mogućnosti spajanja



# PRIMER PODATAKA ZA STREAMING OBRADU

id	imdb_id	budget	genres	original_language	original_title	popularity	production_companies	release_date	revenue	runtime	vote_average	vote_count
862	tt0114709	30000000	[{'id': 16, 'name': 'Animation'}, {'id': 18, 'name': 'Drama'}]	en	Toy Story	21.946943	[{'name': 'Pixar Animation Studios', 'id': 1}],	1995-10-30	373554033	81	7.7	5415
949	tt0113277	60000000	[{'id': 28, 'name': 'Action'}, {'id': 18, 'name': 'Drama'}]	en	Heat	17.924927	[{'name': 'Regency Enterprises', 'id': 1}],	1995-12-15	187436818	170	7.7	1886
524	tt0112641	52000000	[{'id': 18, 'name': 'Drama'}, {'id': 10402, 'name': 'Music'}]	en	Casino	10.137389	[{'name': 'Universal Pictures', 'id': 1}],	1995-11-22	116112375	178	7.8	1343
807	tt0114369	33000000	[{'id': 80, 'name': 'Crime'}, {'id': 18, 'name': 'Drama'}]	en	Se7en	18.45743	[{'name': 'New Line Cinema', 'id': 1}],	1995-09-22	327311859	127	8.1	5915
10530	tt0114148	55000000	[{'id': 12, 'name': 'Adventure'}, {'id': 18, 'name': 'Drama'}]	en	Pocahontas	13.280069	[{'name': 'Walt Disney Pictures', 'id': 1}],	1995-06-14	346079773	81	6.7	1509
629	tt0114814	6000000	[{'id': 18, 'name': 'Drama'}, {'id': 10402, 'name': 'Music'}]	en	The Usual Suspects	16.302466	[{'name': 'Blue Parrot Productions', 'id': 1}],	1995-07-19	23341568	106	8.1	3334
2054	tt0113862	0	[{'id': 10402, 'name': 'Music'}, {'id': 27, 'name': 'Horror'}]	en	Mr. Holland's Op	7.137117	[{'name': 'Hollywood Pictures', 'id': 1}],	1995-12-29	106269971	137	6.9	115
755	tt0116367	19000000	[{'id': 27, 'name': 'Horror'}, {'id': 35, 'name': 'Comedy'}]	en	From Dusk Till D	15.339153	[{'name': 'A Band Apart', 'id': 59}],	1996-01-19	25836616	108	6.9	1644
9614	tt0116483	12000000	[{'id': 35, 'name': 'Comedy'}, {'id': 28, 'name': 'Action'}]	en	Happy Gilmore	9.592265	[{'name': 'Universal Pictures', 'id': 1}],	1996-02-16	41205099	92	6.5	767
197	tt0112573	72000000	[{'id': 28, 'name': 'Action'}, {'id': 80, 'name': 'Crime'}]	en	Braveheart	20.755149	[{'name': 'Icon Entertainment Inte', 'id': 1}],	1995-05-24	210000000	177	7.7	3404
103	tt0075314	1300000	[{'id': 80, 'name': 'Crime'}, {'id': 18, 'name': 'Drama'}]	en	Taxi Driver	14.092713	[{'name': 'Columbia Pictures Corp', 'id': 1}],	1976-02-07	28262574	114	8.1	2632
568	tt0112384	52000000	[{'id': 18, 'name': 'Drama'}, {'id': 35, 'name': 'Comedy'}]	en	Apollo 13	18.761467	[{'name': 'Imagine Entertainment', 'id': 1}],	1995-06-30	355237933	140	7.3	1637
76	tt0112471	2500000	[{'id': 18, 'name': 'Drama'}, {'id': 35, 'name': 'Comedy'}]	en	Before Sunrise	11.304979	[{'name': 'Detour Film Production', 'id': 1}],	1995-01-27	5535405	105	7.7	984
8467	tt0109686	16000000	[{'id': 35, 'name': 'Comedy'}, {'id': 18, 'name': 'Drama'}]	en	Dumb and Dumb	9.844558	[{'name': 'New Line Cinema', 'id': 1}],	1994-12-16	247275374	107	6.5	1894

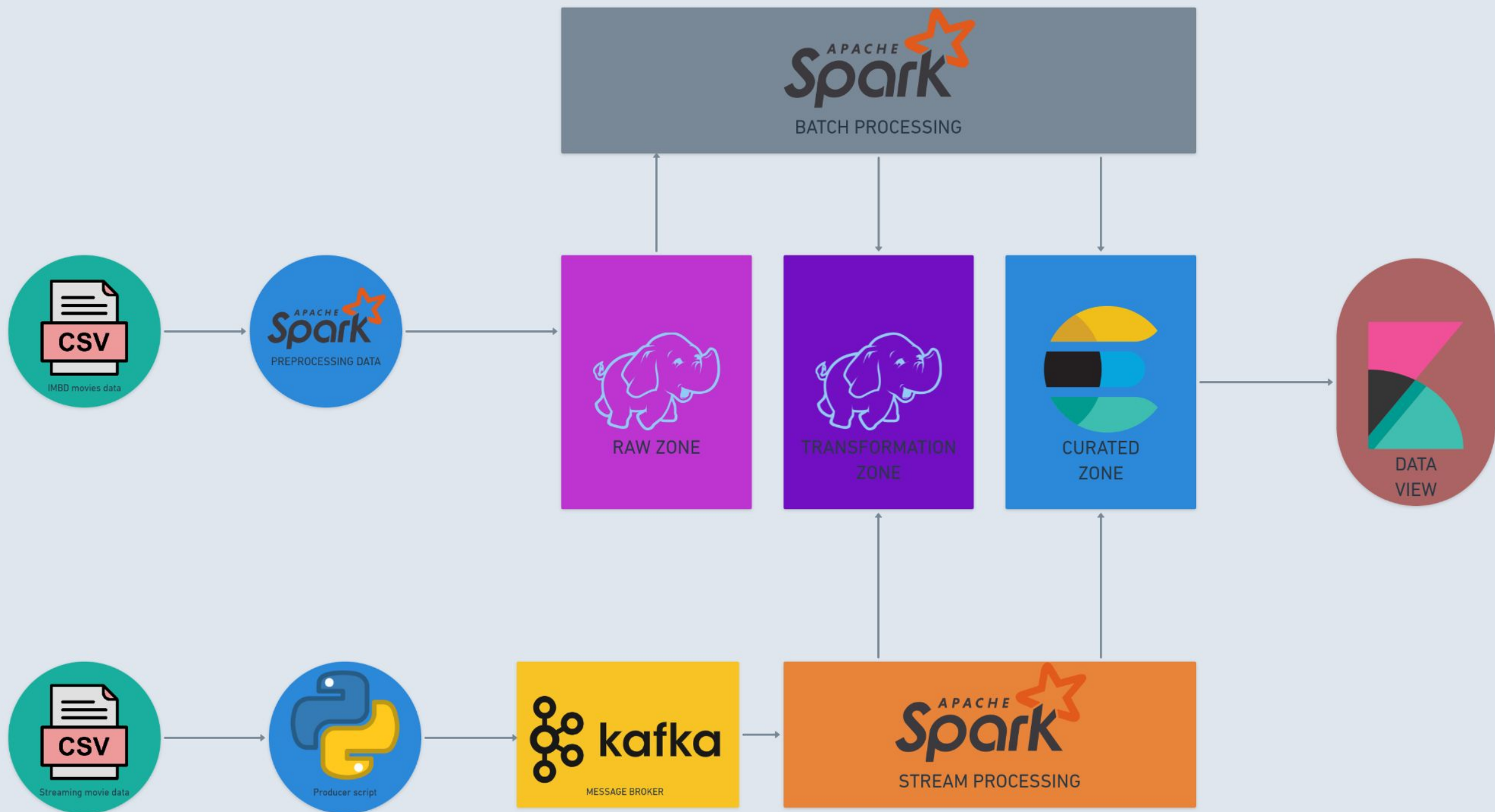
# PRIMER PODATAKA ZA STREAMING OBRADU

user_id	movie_id	rating	timestamp
2	25	3	867039168
2	58	3	867039325
2	141	3	867039168
2	377	4	867041121
2	605	4	867039973
2	762	3	867039325
3	500	2	1048076945
4	1422	4	1042674861
4	1597	3	1042674787
4	1911	4	1042668589
5	296	4	949424343
7	6934	2	1486253729
8	585	2	1013443939
8	968	4	1013444101

# PRIMER PITANJA ZA STREAMING OBRADU

1. Da li je veliko odstupanje ocene veliko od trenutne prosečne ocene? (spajanje sa batch)
2. Prosek ocena za svakog korisnika.
3. Broj ocena za svaki film u poslednjih minut i prosečna ocena svih tih ocena.
4. Prosečna ocena svih kategorija.
5. Top 5 filmova sa najviše procenata zarade (najbolji odnos budget - revenue)





HVALA NA PAŽNJI!