KOSTROVA & DULESOV BSC181

db2019project_googleplaystore

QUERY 1

Question: What category of applications is the most popular among users?

Description: To answer this question, we decided to take the number of applications in each category and the average number of installations for each category.

```sql
select Category,
count(Category) as number_of_apps,
 round(avg(Installs),0) as avg_installs
from apps
group by Category
order by avg_installs desc;
```
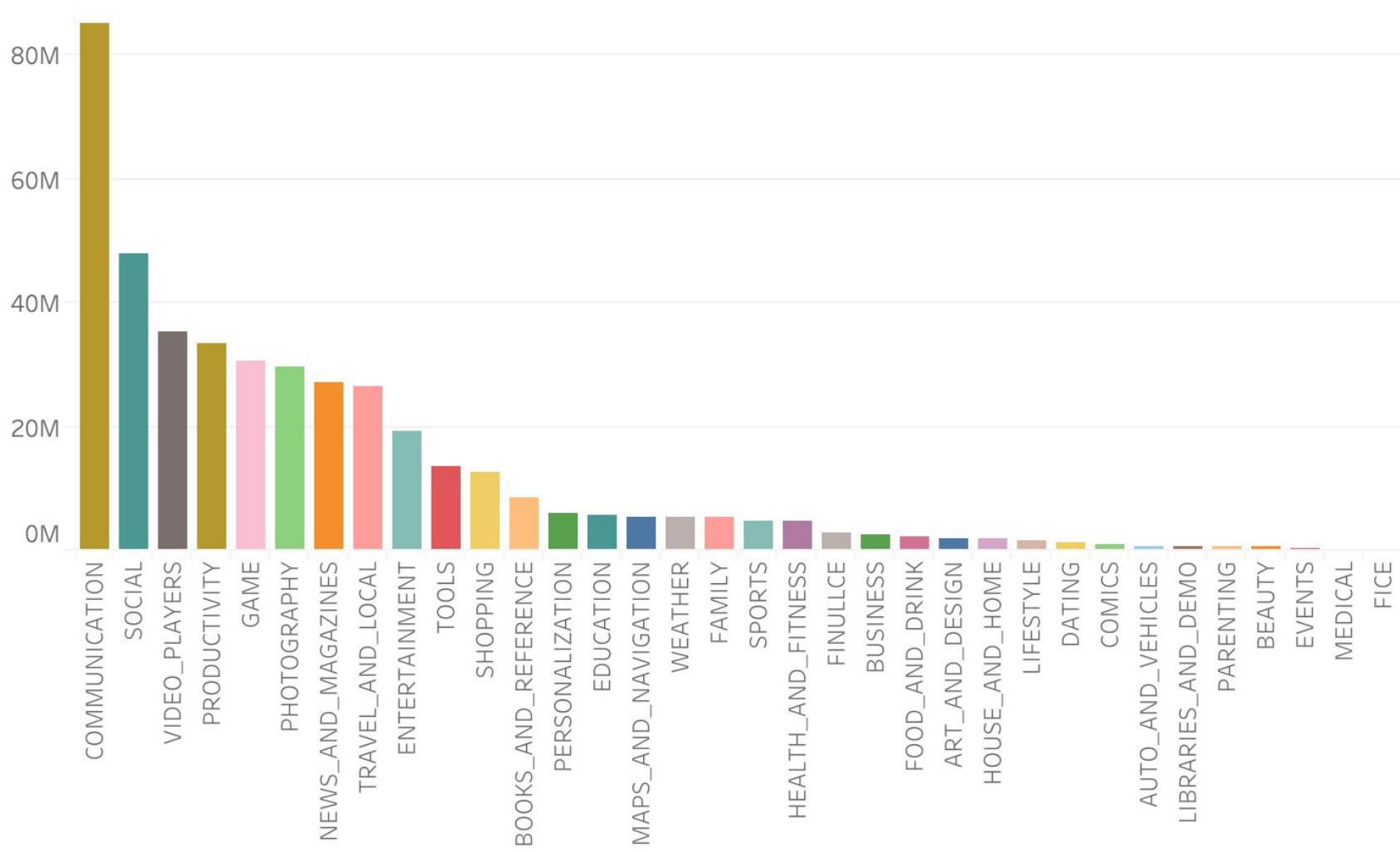
QUERY 1: RESULTS

Results: The most popular application categories among users are: Games, Communication, Social, Video Players, Productivity, Games.

However, these categories don't have the largest number of applications. Consequently, the assumption that the more applications contained in a category the greater the number of installations, is not the rule.

Category	number_of_apps	avg_installs
COMMUNICATION	383	85295679
SOCIAL	293	47995826
VIDEO_PLAYERS	174	35183521
PRODUCTIVITY	424	33448390
GAME	1141	30647227
PHOTOGRAPHY	335	29729244
NEWS_AND_MAGAZINES	279	27252827
TRAVEL_AND_LOCAL	258	26623310
ENTERTAINMENT	148	19379459
TOOLS	838	13667640
SHOPPING	258	12579297
BOOKS_AND_REFERENCE	230	8389276
PERSONALIZATION	388	6021911
EDUCATION	156	5586231
MAPS_AND_NAVIGATION	135	5328703
WEATHER	82	5256165
FAMILY	1962	5221134
SPORTS	381	4695787
HEALTH_AND_FITNESS	341	4642151
FINULLCE	322	2694361
BUSINESS	460	2395752
FOOD_AND_DRINK	126	2173720
ART_AND_DESIGN	64	1942767
HOUSE_AND_HOME	87	1938074
LIFESTYLE	380	1419776
DATING	234	1171841
COMICS	57	965371
AUTO_AND_VEHICLES	84	633595
LIBRARIES_AND_DEMO	85	624070
PARENTING	60	525352
BEAUTY	53	513152
EVENTS	64	249730
MEDICAL	463	125458
FICE	43	772

QUERY 2

Question: What categories of "topical" apps are rated above average?

Description: We needed to find the average rating for each category (`avg_rating`), the overall rating for all applications (`overall_rating`). Also, we filtered the data and left only those categories, in which applications were updated no earlier than 2018-01-01; sorted in descending order of their average rating and took the average rating of all applications that were also updated no earlier than 2018-01-01.

```sql
SELECT Category,
    ROUND(avg(a.Rating), 2) AS avg_rating,
    (SELECT round(avg(Rating), 2)
     FROM apps
     where t.Last_Updated > '2018-01-01') AS overall_rating
    from apps as a
inner JOIN tech_inf as t
ON a.ID=t.ID
WHERE t.Last_Updated > '2018-01-01'
GROUP BY Category
HAVING avg_rating IS NOT NULL
ORDER BY avg_rating DESC;
```

QUERY 2: RESULTS

Events, Education and Personalization contain apps updated no earlier than 2018-01-01 and with average rating higher than the average rating of all apps updated no earlier than 2018-01-01 as well.

Most of categories have average rating higher than the average rating of all apps.

Category	avg_rating	overall_rating
▶ EVENTS	4.44	4.19
EDUCATION	4.43	4.19
PERSONALIZATION	4.42	4.19
BOOKS_AND_REFERENCE	4.37	4.19
GAME	4.36	4.19
HEALTH_AND_FITNESS	4.34	4.19
ART_AND_DESIGN	4.34	4.19
PARENTING	4.33	4.19
WEATHER	4.31	4.19
SOCIAL	4.29	4.19
MEDICAL	4.28	4.19
PHOTOGRAPHY	4.27	4.19
SHOPPING	4.27	4.19
PRODUCTIVITY	4.27	4.19
LIBRARIES_AND_DEMO	4.27	4.19
BEAUTY	4.27	4.19
FAMILY	4.26	4.19
SPORTS	4.26	4.19
BUSINESS	4.23	4.19
HOUSE_AND_HOME	4.23	4.19
COMMUNICATION	4.22	4.19
FINULLCE	4.20	4.19
FOOD_AND_DRINK	4.18	4.19
COMICS	4.17	4.19
AUTO_AND_VEHICLES	4.17	4.19
TOOLS	4.15	4.19
VIDEO_PLAYERS	4.15	4.19
NEWS_AND_MAGAZINES	4.13	4.19
ENTERTAINMENT	4.13	4.19
TRAVEL_AND_LOCAL	4.12	4.19
MAPS_AND_NAVIGATION	4.08	4.19
LIFESTYLE	4.06	4.19
DATING	4.04	4.19

QUERY 3

```sql
select Category,
round (avg (case when Sentiment = 'Positive' or Sentiment = 'Neutral' and Rating > 4.7
                then 1
                else 0 end), 2) as pers_good_apps
from apps
right join reviews
on `Name` = AppName
where Installs >= 500000
group by Category
order by pers_good_apps desc;
```

Question: What is the ratio of successful to bad relationships in each category?

Description: In order to measure the success of applications, we used such characteristics as Rating, Sentiment, Installs. An application is considered successful if it has a "Positive" or "Neutral" Sentiment and a Rating above 4.7.

QUERY 3: RESULTS

The most successful categories of applications are Events, Auto and vehicles, Comics and Education. The most successful categories of applications are Events, Auto and vehicles, Comics and Education. In these categories of successful applications, more than 80% of the applications are successful.

Category	pers_good_apps
EVENTS	0.89
AUTO_AND_VEHICLES	0.85
COMICS	0.85
EDUCATION	0.80
HEALTH_AND_FITNESS	0.76
PARENTING	0.71
ART_AND_DESIGN	0.71
FOOD_AND_DRINK	0.71
WEATHER	0.71
MEDICAL	0.70
LIBRARIES_AND_DEMO	0.70
PERSONALIZATION	0.69
PRODUCTIVITY	0.69
PHOTOGRAPHY	0.69
BOOKS_AND_REFERENCE	0.68
MAPS_AND_NAVIGATION	0.67
LIFESTYLE	0.67
FAMILY	0.66
SHOPPING	0.66
COMMUNICATION	0.66
FINULLCE	0.64
DATING	0.63
HOUSE_AND_HOME	0.62
BUSINESS	0.62
TOOLS	0.61
SPORTS	0.61
ENTERTAINMENT	0.61
VIDEO_PLAYERS	0.59
TRAVEL_AND_LOCAL	0.59
NEWS_AND_MAGAZINES	0.59
GAME	0.58
SOCIAL	0.52
BEAUTY	0.42

QUERY 4

Question: Does the date of the last update (how long has the application been updated) of applications influences on the number of downloads?

Description: We assume that the Application Update Date shows consumers how new/ outdated the application is. And this parameter will affect the number of installations. To calculate this data, we use Last_Updated and Installs.

```sql
select distinct `Name`,
               Category,
               Last_Updated,
               Installs
from apps as a
inner join tech_inf as t
ON a.ID=t.ID
order by Installs desc;
```

QUERY 4: RESULTS

The date of the last update affects the number of installations, as users see the application being updated and improved

All: 9585 rows

Name	Category	Last_Updated	Installs
Clean Master- Space Cleaner & Antivirus	TOOLS	2018-08-03	500000000
Security Master - Antivirus, VPN, AppLock, Boos…	TOOLS	2018-08-04	500000000
Google Duo - High Quality Video Calls	COMMUNICATION	2018-07-31	500000000
SHAREit - Transfer & Share	TOOLS	2018-07-30	500000000
Microsoft Word	PRODUCTIVITY	2018-07-11	500000000
MX Player	VIDEO_PLAYERS	2018-08-06	500000000
My Talking Tom	GAME	2018-07-19	500000000
UC Browser - Fast Download Private & Secure	COMMUNICATION	2018-08-02	500000000
Candy Crush Saga	GAME	2018-07-05	500000000
Dropbox	PRODUCTIVITY	2018-08-01	500000000
Flipboard: News For Our Time	NEWS_AND_MAGAZINES	2018-08-03	500000000
Google Translate	TOOLS	2018-08-04	500000000
Facebook Lite	SOCIAL	2018-08-01	500000000
imo free video calls and chat	COMMUNICATION	2018-06-08	500000000
Pou	GAME	2018-05-25	500000000
Samsung Health	HEALTH_AND_FITNESS	2018-07-31	500000000
Temple Run 2	GAME	2018-07-05	500000000
Twitter	NEWS_AND_MAGAZINES	2018-08-06	500000000
Viber Messenger	COMMUNICATION	2018-07-18	500000000
Gboard - the Google Keyboard	TOOLS	2018-07-31	500000000
Google Calendar	PRODUCTIVITY	2018-08-06	500000000
LINE: Free Calls & Messages	COMMUNICATION	2018-07-26	500000000
Cloud Print	PRODUCTIVITY	2018-05-23	500000000
Snapchat	SOCIAL	2018-07-30	500000000
DU Recorder – Screen Recorder, Video Editor, L…	VIDEO_PLAYERS	2018-07-30	50000000
Bowmasters	GAME	2018-07-23	50000000
Brightest Flashlight Free ®	TOOLS	2017-10-27	50000000
Bubble Witch 3 Saga	GAME	2018-07-17	50000000
Calculator - unit converter	PRODUCTIVITY	2018-05-09	50000000
CATS: Crash Arena Turbo Stars	GAME	2018-07-09	50000000
Kaspersky Mobile Antivirus: AppLock & Web Se…	TOOLS	2018-07-24	50000000

QUERY 5

Question: Does the size of the application affect the number of downloads?

Description: We looked at such variables as Size and Number of Installs. Also we use function `distinct` for AppName because they are the same in Data Set.

Limitations: Since SQL does not distinguish between MG, GB, KB, etc., it is impossible to calculate them.

```sql
select distinct `Name`,
                Category,
                Size,
                Installs
from apps as a
inner join tech_inf as t
ON a.ID=t.ID
where size NOT IN ('Varies with device')
order by Installs desc;
```

QUERY 5: RESULTS

We assumed that heavy applications would be installed less frequently. However, as the results have shown, the size of the application does not matter to users.

Name	Category	Size	Installs
SHAREit - Transfer & Share	TOOLS	17M	500000000
UC Browser - Fast Download Private & Secure	COMMUNICATION	40M	500000000
Candy Crush Saga	GAME	74M	500000000
Dropbox	PRODUCTIVITY	61M	500000000
imo free video calls and chat	COMMUNICATION	11M	500000000
Pou	GAME	24M	500000000
Samsung Health	HEALTH_AND_FITNESS	70M	500000000
Temple Run 2	GAME	62M	500000000
DU Recorder – Screen Recorder, Video Editor, L...	VIDEO_PLAYERS	9.7M	50000000
Brightest Flashlight Free ®	TOOLS	3.8M	50000000
Bubble Witch 3 Saga	GAME	78M	50000000
Kaspersky Mobile Antivirus: AppLock & Web Se...	TOOLS	49M	50000000
ZenUI Launcher	PERSONALIZATION	15M	50000000
Castle Clash: Heroes of the Empire US	GAME	24M	50000000
Clean Master Lite - For Low-End Phone	TOOLS	5.1M	50000000
CM Browser - Ad Blocker , Fast Download , Priv...	COMMUNICATION	6.1M	50000000
Earn to Die 2	GAME	99M	50000000
Geometry Dash Meltdown	GAME	48M	50000000
LIKE – Magic Video Maker & Community	VIDEO_PLAYERS	47M	50000000
MARVEL Future Fight	FAMILY	72M	50000000
Master for Minecraft(Pocket Edition)-Mod Launc...	TOOLS	26M	50000000
Video Downloader for Facebook	TOOLS	3.1M	50000000
War Robots	GAME	33M	50000000
Alarm Clock: Stopwatch & Timer	PRODUCTIVITY	16M	50000000
Anger of stick 5 : zombie	GAME	23M	50000000
Block Craft 3D: Building Simulator Games For F...	GAME	57M	50000000
Boom Beach	FAMILY	95M	50000000
Brightest Flashlight - LED Light	TOOLS	9.1M	50000000
Chess Free	GAME	15M	50000000
EA SPORTS UFC®	SPORTS	37M	50000000
Gangstar Vegas - mafia game	GAME	32M	50000000
Granny	GAME	59M	50000000
Hungry Shark World	GAME	27M	50000000
KineMaster – Pro Video Editor	VIDEO_PLAYERS	32M	50000000
letgo: Buy & Sell Used Stuff, Cars & Real Estate	SHOPPING	20M	50000000
Pixel Gun 3D: Survival shooter & Battle Royale	GAME	55M	50000000
Rolling Sky	GAME	50M	50000000
Samsung+	LIFESTYLE	30M	50000000
SimCity BuildIt	FAMILY	100M	50000000
Sketch - Draw & Paint	ART_AND_DESIGN	25M	50000000
Toca Kitchen 2	FAMILY	56M	50000000

QUERY 6

Question: What are the 5 "best" apps?

Description: To find the "best" applications, we decided to take a rating above 4.7. In addition, we chose Sentiment = "Positive" and the number of installations > = 500.000, because there are high-rated applications in the Data, but with only 1 installation. These examples may not be representative.

```sql
select distinct (`Name`),
                Category,
                Genres,
                Rating,
                Installs,
                Sentiment
from apps
inner join reviews
on `Name` = AppName
where Rating > 4.7
and Installs >= 500000
and Sentiment = 'Positive'
Order by Rating desc
limit 5;
```

QUERY 6: RESULTS

Name	Category	Genres	Rating	Installs
Down Dog: Great Yoga Anywhere	HEALTH_AND_FITNESS	Health & Fitness	4.9	500000
Find a Way: Addictive Puzzle	FAMILY	Puzzle	4.8	500000
Home Workout - No Equipment	HEALTH_AND_FITNESS	Health & Fitness	4.8	10000000
FreePrints – Free Photos Delivered	PHOTOGRAPHY	Photography	4.8	1000000
GoodRx Drug Prices and Coupons	MEDICAL	Medical	4.8	1000000

We considered an apps from the category "Game" to be the most successful, but our assumption was wrong. There is no games in top 5 most successful apps.

3 from 5 apps related to categories connected with health.

QUERY 7

Question: What are the 5 "worst" apps?

Description: To find the "worst"
applications, we decided to take a rating
below 3.7. In addition, we chose
Sentiment = "Negative" and the number of
installations> = 500.000, as there are
low-rated applications in the Data, but
with only 1 installation. These examples
may not be representative.

```sql
select distinct (`Name`),
               Category,
               Genres,
               Rating,
               Installs,
               Sentiment
from apps
inner join reviews
on `Name` = AppName
where Rating < 3.7
and Installs >= 500000
and Sentiment = 'Negative'
Order by Rating asc
Limit 5;
```

QUERY 7 RESULTS

Name	Category	Genres	Rating	Installs	Sentiment
▶ Anthem Anywhere	MEDICAL	Medical	2.7	500000	Negative
HTC Mail	PRODUCTIVITY	Productivity	3.1	10000000	Negative
Entel	LIFESTYLE	Lifestyle	3.2	1000000	Negative
App vault	TOOLS	Tools	3.4	10000000	Negative
Baseball Boy!	GAME	Arcade	3.4	10000000	Negative

According to the result of the query there are representatives of different categories in the top 5 of the worst applications.

We can assume that for apps from all categories it is easier to get into this top rather than top of the best apps.

QUERY 8

Question: What is the difference in the number of reviews between the "best" and the "worst" application?

Description: To find the difference between the number of reviews for the best and worst application, you must first find them. To do this, use the code from the previous query.

```sql
select
(select Reviews
 from apps
 inner join reviews
 on `Name` = AppName
 where Rating > 4.7
 and Installs >= 500000
 and Sentiment = 'Positive'
 Order by Rating desc
 Limit 1) -
(select Reviews
 from apps
 inner join reviews
 on `Name` = AppName
 where Rating < 3.7
 and Installs >= 500000
 and Sentiment = 'Negative'
 Order by Rating desc
 limit 1)  as diff
 from apps;
```

QUERY 8: RESULTS

There are fewer reviews for the best application than for the bad. Perhaps this is due to the fact that people often write negative reviews with complaints than positive ones with praise.

diff
-3917

QUERY 9

Question: What are the most popular paid apps?

Description: To find the most popular paid apps, we decided to take the Paid type of apps and the number of installations> = 500,000, as there are low-rated applications in the Data, but with only 1 installation. These examples may not be representative.

```sql
select distinct(`Name`),
               Category,
               Rating,
               Genres,
               Installs
from apps
where Installs >= 500000
and `Type` = 'Paid'
and Rating is not null
order by Rating, Installs;
```

QUERY 9: RESULTS

The most popular paid applications are this: Fruit ninja classic, Hitman, Minecraft.

However, the rating of these applications is not the highest.

Limitations: SQL incorrectly sorts by Installs variable

Name	Category	Rating	Genres	Installs
Fruit Ninja Classic	GAME	4.3	Arcade	5000000
ADWLauncher 1 EX	PERSONALIZATION	4.3	Personalization	500000
Assassin's Creed Identity	GAME	3.7	Action	500000
Cameringo+ Filters Camera	PHOTOGRAPHY	4.6	Photography	500000
CamScanner (License)	PRODUCTIVITY	4.4	Productivity	500000
ES File Explorer/Manager PRO	PRODUCTIVITY	4.7	Productivity	500000
Farming Simulator 16	FAMILY	4.2	Simulation;Education	500000
Five Nights at Freddy's 2	FAMILY	4.6	Strategy	500000
Hitman GO	FAMILY	4.6	Puzzle	500000
NBA JAM by EA SPORTS™	FAMILY	4.3	Sports;Action & Adventure	500000
Toca Life: City	EDUCATION	4.7	Education;Pretend Play	500000
Toca Life: City	FAMILY	4.7	Education;Pretend Play	500000
Weather Live	WEATHER	4.5	Weather	500000
Hitman Sniper	GAME	4.6	Action	10000000
Minecraft	FAMILY	4.5	Arcade;Action & Adventure	10000000
Beautiful Widgets Pro	PERSONALIZATION	4.2	Personalization	1000000
Bloons TD 5	FAMILY	4.6	Strategy	1000000
Card Wars - Adventure Time	FAMILY	4.3	Card;Action & Adventure	1000000
Cut the Rope GOLD	FAMILY	4.6	Puzzle	1000000
DraStic DS Emulator	GAME	4.6	Action	1000000
Facetune - For Free	PHOTOGRAPHY	4.4	Photography	1000000
Five Nights at Freddy's	GAME	4.6	Action	1000000
Football Manager Mobile 2018	SPORTS	3.9	Sports	1000000
Grand Theft Auto: San Andreas	GAME	4.4	Action	1000000
HD Widgets	PERSONALIZATION	4.3	Personalization	1000000
Infinity Dungeon VIP	FAMILY	4.3	Role Playing	1000000
League of Stickman 2018- Ninja…	GAME	4.4	Action	1000000
Lost Journey (Dreamsky)	GAME	4.5	Adventure	1000000
Sleep as Android Unlock	LIFESTYLE	4.5	Lifestyle	1000000
Stickman Legends: Shadow Wars	GAME	4.4	Action	1000000
Tasker	TOOLS	4.6	Tools	1000000
Threema	COMMUNICATION	4.5	Communication	1000000
True Skate	SPORTS	4.4	Sports	1000000
Where's My Water?	FAMILY	4.7	Puzzle;Brain Games	1000000
Zombie Avengers:(Dreamsky)Sti…	GAME	4.3	Action	1000000

QUERY 10

Question: What applications in each category of content rating have the most Installs?

Description: In order to find out which applications are the most popular in each age category, we took the Content Rating and the number of Installations.

```sql
select   distinct(`Name`),
         Category,
         Content_Rating,
         max(Installs) as max_Installs
from apps
group by Content_Rating
order by max_Installs desc;
```

QUERY 10

Name	Category	Content_Rating	max_Installs
211:CK	GAME	Teen	500000000
30WPM Amateur ham radio Koch C…	FAMILY	Everyone	500000000
420 BZ Budeze Delivery	MEDICAL	Mature 17+	500000000
Cy-Fair VFD EMS Protocols	MEDICAL	Everyone 10+	500000000
Manga Master - Best manga & comi…	COMICS	Adults only 18+	500000
DC Universe Online Map	TOOLS	Unrated	50000

Here you will find the most common applications for each category. However, two of them fall under the category "Medical".

QUERY 11

Question: Which apps that have been installed at least 500.000 times have number of reviews above average?

Description: We needed the number of reviews for each application, as well as the average number of reviews. At the same time, applications must have a minimum of 500,000 downloads. We chose this figure as a way of defining a "live" application that has found its audience.

```sql
select distinct(`Name`),
       Category,
       Reviews
from apps
where Reviews > (select avg(Reviews) from apps)
and Installs >= 500000
order by Reviews desc;
```

QUERY 11: RESULTS

We have received a total of 626 apps, the number of responses to which is above average.

The most common categories are Game, Social and Communication.

Name	Category	Reviews
▶ Facebook	SOCIAL	78158306
WhatsApp Messenger	COMMUNICATION	69119316
Instagram	SOCIAL	66577313
Messenger – Text and Video Chat f…	COMMUNICATION	56642847
Clash of Clans	GAME	44891723
Clean Master- Space Cleaner & Ant…	TOOLS	42916526
Subway Surfers	GAME	27722264
YouTube	VIDEO_PLAYERS	25655305
Security Master - Antivirus, VPN, Ap…	TOOLS	24900999
Clash Royale	GAME	23133508
Candy Crush Saga	GAME	22426677
UC Browser - Fast Download Privat…	COMMUNICATION	17712922
Snapchat	SOCIAL	17014787
360 Security - Free Antivirus, Boost…	TOOLS	16771865
My Talking Tom	GAME	14891223
8 Ball Pool	GAME	14198297
DU Battery Saver - Battery Charger…	TOOLS	13479633
BBM - Free Calls & Messages	COMMUNICATION	12842860
Cache Cleaner-DU Speed Booster (…	TOOLS	12759663
Twitter	NEWS_AND_MAGAZINES	11667403
Viber Messenger	COMMUNICATION	11334799
Shadow Fight 2	GAME	10979062
Google Photos	PHOTOGRAPHY	10858556
LINE: Free Calls & Messages	COMMUNICATION	10790289
Pou	GAME	10485308
Skype - free IM & video calls	COMMUNICATION	10484169
Pokémon GO	GAME	10424925
Minion Rush: Despicable Me Officia…	GAME	10216538
Yes day	GAME	10055521
Hay Day	FAMILY	10053186
Dream League Soccer 2018	GAME	9882639
My Talking Angela	GAME	9881890

QUERY 12

Question: What genres of games are most popular in terms of the average number of installations and rating?

Description: We have compared an average rating and an average number of installs for each genre from the "Game" category. Also we have taken a look at the number of apps in each genre

```sql
select Category,
       Genres,
       count(Genres) as number_of_apps,
       round(avg(Rating), 2) as avg_rating,
       round(avg(Installs), 2) as avg_installs
from apps
where Category = 'GAME'
group by Genres
order by avg_rating desc;
```

QUERY 12: RESULTS

Genres in which the largest number of applications have a fairly low average rating and a small average number of installations.

High average rating have genres with relatively few applications.

The highest average number of installations is in the "Casual" genre.

Category	Genres	number_of_apps	avg_rating	avg_installs
GAME	Simulation;Action & Adventure	1	4.70	10000000.00
GAME	Sports	14	4.54	79714285.71
GAME	Puzzle	42	4.53	28314285.71
GAME	Simulation;Education	1	4.50	100000.00
GAME	Casual;Action & Adventure	1	4.50	100000000.00
GAME	Adventure;Action & Adventure	5	4.50	100000000.00
GAME	Casual	45	4.46	154422222.22
GAME	Word	29	4.41	9314570.69
GAME	Role Playing	16	4.40	7131250.00
GAME	Strategy	24	4.40	48220833.33
GAME	Casual;Brain Games	1	4.40	10000000.00
GAME	Action;Action & Adventure	3	4.37	8333333.33
GAME	Simulation	11	4.35	18281818.18
GAME	Arcade	219	4.31	49001037.92
GAME	Action	364	4.29	25569797.31
GAME	Board	44	4.29	3798345.68
GAME	Casino	39	4.29	3340017.95
GAME	Music	22	4.21	14550931.82
GAME	Casual;Pretend Play	1	4.20	50000000.00
GAME	Adventure	74	4.18	4819538.11
GAME	Racing	98	4.17	20035125.77
GAME	Casual;Creativity	1	4.10	10000000.00
GAME	Card	48	4.09	3379733.33
GAME	Trivia	38	4.04	3371220.26

PART 2: HOMESCAPES & GARDENSCAPES

We do like one particular Game. That's why we were wondering if it's in this Database and how users rate it.

QUERY 13

Question: Are there Homescapes and Gardenscapes?

Description: To begin with, we decided to determine if there are applications such as Homescapes and Gardenscapes.

We use function **LIKE** to do these.

```
select *
from apps
where `Name` like '%scapes'
group by `Name`;
```

QUERY 13: RESULTS

ID	Name	Category	Rating	Reviews	Installs	Type	Content_Rating	Genres
1450	Gardenscapes	GAME	4.6	4128732	50000000	Free	Everyone	Casual
1492	Homescapes	GAME	4.6	3093358	10000000	Free	Everyone	Casual
586	Wordscapes	GAME	4.8	230710	10000000	Free	Everyone	Word

As we can see, our favorites games are in the Data Set.

But there is "Wordscapes" game in Data Set, which is not related to our favourites.

QUERY 14

Question: How do users rate Homescapes and Gardenscapes in terms of rating?

Description: We leave only 2 games from Playrix and compare them with the average rating of all applications, with the average rating of apps from "Game" category and the average rating of apps from "Casual" genre.

```
select distinct(`Name`), Category, Rating,
(select round(avg(Rating), 2) from apps) as avg_rating_all_apps,
(select round(avg(Rating), 2) from apps where Category = 'GAME') as avg_rating_games,
(select round(avg(Rating), 2) from apps where Category = 'GAME' and Genres = 'Casual') as avg_rating_casual_games
from apps
where `Name` like '%scapes'
and Genres = 'Casual';
```

QUERY 14: RESULTS

Name	Category	Rating	avg_rating_all_apps	avg_rating_games	avg_rating_casual_games
▶ Gardenscapes	GAME	4.6	4.19	4.29	4.46
Homescapes	GAME	4.6	4.19	4.29	4.46

As we can see Homescapes and Gardenscapes are rated higher, than apps in general, apps in category Games and apps in gener Casual.

QUERY 15

Question: What are the difference between "Positive" and "Negative" reviews for Homescapes?

Description: To do these we use subqueries where find Positive and Negative sentiments. Then we have deducted the total number of negative responses from the total number of Positive Feedbacks.

```sql
select AppName as `Name`,
(select count(Sentiment)
from reviews
where Sentiment = 'Negative' and AppName = 'Homescapes') as Negative,
(select count(Sentiment)
from reviews
where Sentiment = 'Positive' and AppName = 'Homescapes') as Positive,
(select count(Sentiment)
from reviews
where Sentiment = 'Positive' and AppName = 'Homescapes') -
(select count(Sentiment)
from reviews
where Sentiment = 'Negative' and AppName = 'Homescapes') as Difference
from reviews
where AppName = 'Homescapes'
group by AppName;
```

QUERY 15: RESULTS

Name	Negative	Positive	Difference
▶ Homescapes	25	27	2

Homescapes has more positive reviews than negative.

QUERY 16

Question: What are the difference between "Positive" and "Negative" reviews for Gardenscapes?

Description: To do these we use subqueries where find Positive and Negative sentiments. Then we have deducted the total number of negative responses from the total number of Positive Feedbacks.

```sql
select AppName as `Name`,
(select count(Sentiment)
 from reviews
 where Sentiment = 'Negative' and AppName = 'Gardenscapes') as Negative,
(select count(Sentiment)
 from reviews
 where Sentiment = 'Positive' and AppName = 'Gardenscapes') as Positive,
(select count(Sentiment)
 from reviews
 where Sentiment = 'Positive' and AppName = 'Gardenscapes')
 - (select count(Sentiment)
 from reviews
 where Sentiment = 'Negative' and AppName = 'Gardenscapes') as Difference
from reviews
where AppName = 'Gardenscapes'
group by AppName;
```

QUERY 16: RESULTS

Name	Negative	Positive	Difference
▶ Gardenscapes	63	70	7

Gardenscapes has more negative reviews than positive.

So we assume that Homescapes is more preferable for users.