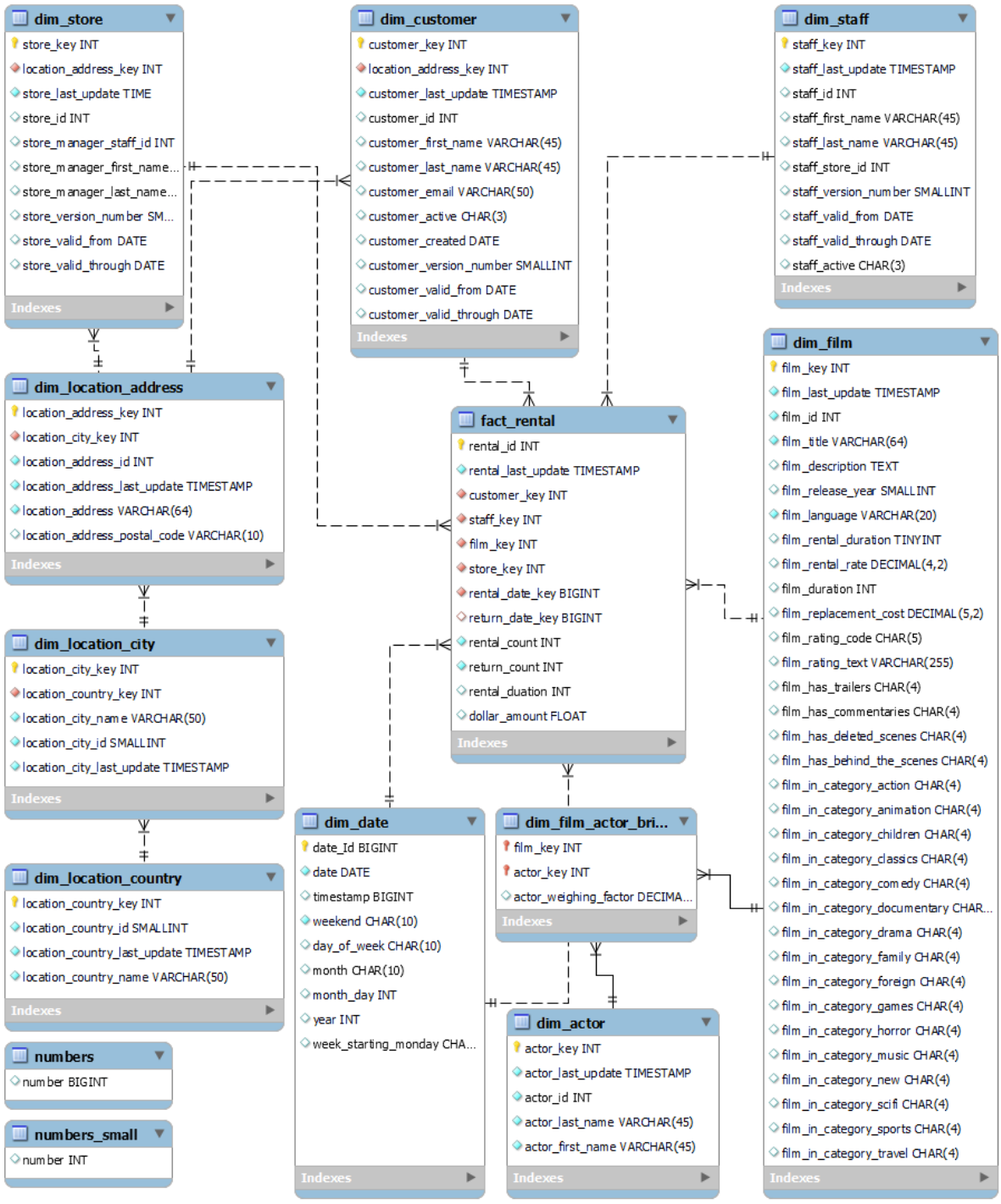
Assignment 3 (Individual)

Screenshot of the EER diagram:



SQL (DDL/DML) queries used along with any assumptions & outputs (first few rows) for each question

Assumption: I assume the film has not been returned when return_date is nan. Dollar amount calculation will be rental_duration * rental rate.

DDL:

```
CREATE TABLE IF NOT EXISTS `sakila_snowflake`.`fact_rental` (
`rental_id` INT(10) NOT NULL,
`rental_last_update` TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP,
`customer_key` INT(8) NOT NULL,
`staff_key` INT(8) NOT NULL,
`film_key` INT(8) NOT NULL,
`store_key` INT(8) NOT NULL,
`rental_date_key` BIGINT(20) NOT NULL,
`return_date_key` BIGINT(20) NULL,
`rental_count` INT(8) NOT NULL,
`return_count` INT(10) NOT NULL,
`rental_duation` INT(10) NULL,
`dollar_amount` FLOAT NULL,
 PRIMARY KEY (`rental_id`),
 INDEX `fk_fact_rental_dim_customer_idx` (`customer_key` ASC),
 INDEX `fk_fact_rental_dim_store_idx` (`store_key` ASC),
 INDEX `fk_fact_rental_dim_film_idx` (`film_key` ASC),
 INDEX `fk_fact_rental_dim_staff_idx` (`staff_key` ASC),
 CONSTRAINT `fk_fact_rental_dim_customer_idx`
   FOREIGN KEY (`customer_key`)
   REFERENCES `sakila_snowflake`.`dim_customer`(`customer_key`)
   ON DELETE NO ACTION
   ON UPDATE NO ACTION,
 CONSTRAINT `fk_fact_rental_dim_store_idx`
   FOREIGN KEY (`store_key`)
   REFERENCES `sakila_snowflake`.`dim_store`(`store_key`)
   ON DELETE NO ACTION
   ON UPDATE NO ACTION,
```

```
322      FOREIGN KEY (`staff_key`)
323      REFERENCES `sakila_snowflake`.`dim_staff`(`staff_key`)
324      ON DELETE NO ACTION
325      ON UPDATE NO ACTION,
326    CONSTRAINT `fk_fact_rental_dim_date_idx`
327      FOREIGN KEY (`rental_date_key`)
328      REFERENCES `sakila_snowflake`.`dim_date` (`date_Id`)
329      ON DELETE NO ACTION
330      ON UPDATE NO ACTION,
331      FOREIGN KEY (`return_date_key`)
332      REFERENCES `sakila_snowflake`.`dim_date` (`date_Id`)
333      ON DELETE NO ACTION
334      ON UPDATE NO ACTION
335    )
336  ENGINE = InnoDB
337  DEFAULT CHARACTER SET = latin1;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

date_Id	date	timestamp	weekend	day_of_week	month	month_day	year	week_starting_monday
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result 5 | dim_date 6 | Apply | Revert

Output

Action Output

#	Time	Action	Message	Duration / Fetch
69	23:28:08	CREATE TABLE IF NOT EXISTS `sakila_snowflake`.`numbe...	0 row(s) affected, 1 warning(s): 1681 Integer display width is ...	0.047 sec
70	23:28:08	CREATE TABLE IF NOT EXISTS `sakila_snowflake`.`fact_re...	0 row(s) affected, 10 warning(s): 1681 Integer display width is...	0.094 sec

DML:

```
INSERT INTO sakila_snowflake.fact_rental(
    rental_id,
    rental_last_update,
    customer_key,
    staff_key,
    film_key,
    store_key,
    rental_date_key,
    return_date_key,
    rental_count,
    return_count,
    rental_duation,
    dollar_amount)
SELECT
    rental.rental_id,
    rental.last_update,
    dim_customer.customer_key,
    dim_staff.staff_key,
    dim_film.film_key,
    dim_store.store_key,
    ren_d.date_Id as rental_date_key,
    ret_d.date_Id as return_date_key,
    CASE WHEN rental.return_date IS NULL THEN 0 ELSE 1 END as count_returns,
    CASE WHEN rental.rental_date IS NULL THEN 0 ELSE 1 END as count_rentals,
    dim_film.film_rental_duration as rental_duration,
    dim_film.film_rental_duration * dim_film.film_rental_rate as dollar_amount
FROM
    sakila.rental as rental
    LEFT JOIN sakila.inventory as inventory on rental.inventory_id = inventory.inventory_id
    LEFT JOIN dim_film on inventory.film_id = dim_film.film_id
    LEFT JOIN dim_customer on rental.customer_id = dim_customer.customer_id
    LEFT JOIN dim_staff on rental.staff_id = dim_staff.staff_id
    LEFT JOIN dim_store on dim_store.store_id = inventory.store_id
    LEFT JOIN dim_date as ren_d on DATE(ren_d.date) = DATE(rental.rental_date)
    LEFT JOIN dim_date as ret_d on DATE(ret_d.date) = DATE(rental.return_date)
GROUP BY
    rental.rental_id,
    rental.last_update,
    dim_customer.customer_key,
    dim_staff.staff_key,
    dim_film.film_key,
    dim_store.store_key,
    return_date_key,
    rental_date_key;
```

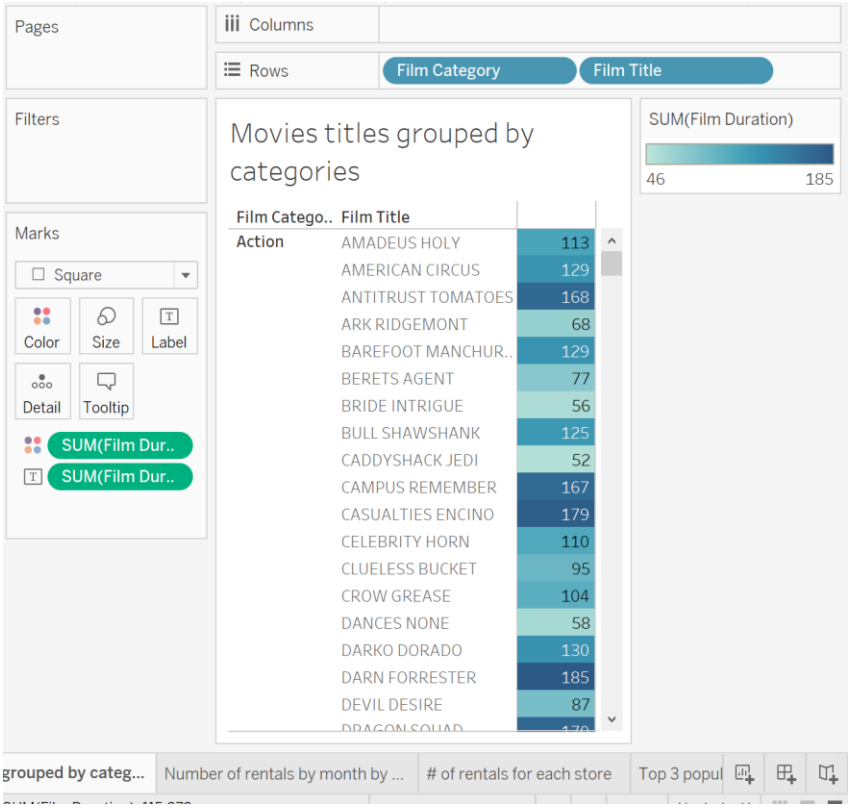
Result Grid Filter Rows: Search Edit: Export/Import:

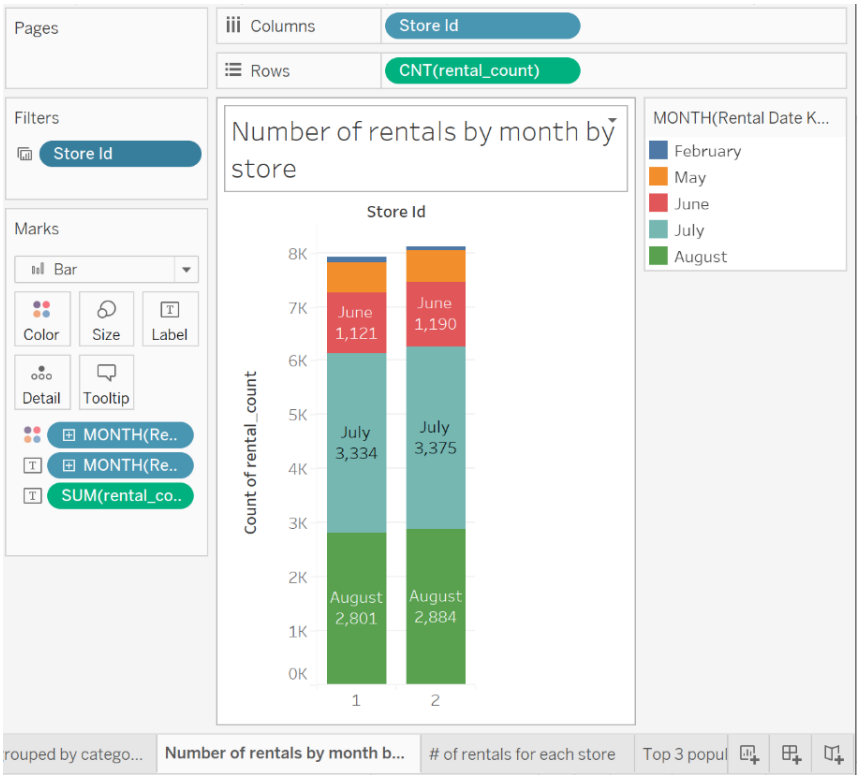
rental_id	rental_last_update	customer_key	staff_key	film_key	store_key	rental_date_key	return_date_key	count_returns	count_rentals	rental_duration	dollar_amount
1	2006-02-15 21:30:53	48	1	443	2	143	145	1	1	7	20.93
2	2006-02-15 21:30:53	257	1	712	1	143	147	1	1	7	20.93
3	2006-02-15 21:30:53	483	1	152	1	143	151	1	1	7	20.93
4	2006-02-15 21:30:53	26	2	666	2	143	153	1	1	6	5.94
5	2006-02-15 21:30:53	431	1	157	1	143	152	1	1	5	14.95
6	2006-02-15 21:30:53	482	1	283	2	143	146	1	1	5	4.95
7	2006-02-15 21:30:53	573	2	684	1	143	148	1	1	4	3.96
8	2006-02-15 21:30:53	240	2	100	2	143	146	1	1	6	29.94
9	2006-02-15 21:30:53	54	1	547	2	144	147	1	1	6	29.94
10	2006-02-15 21:30:53	384	2	396	1	144	150	1	1	5	24.95
11	2006-02-15 21:30:53	535	2	576	2	144	152	1	1	4	19.96

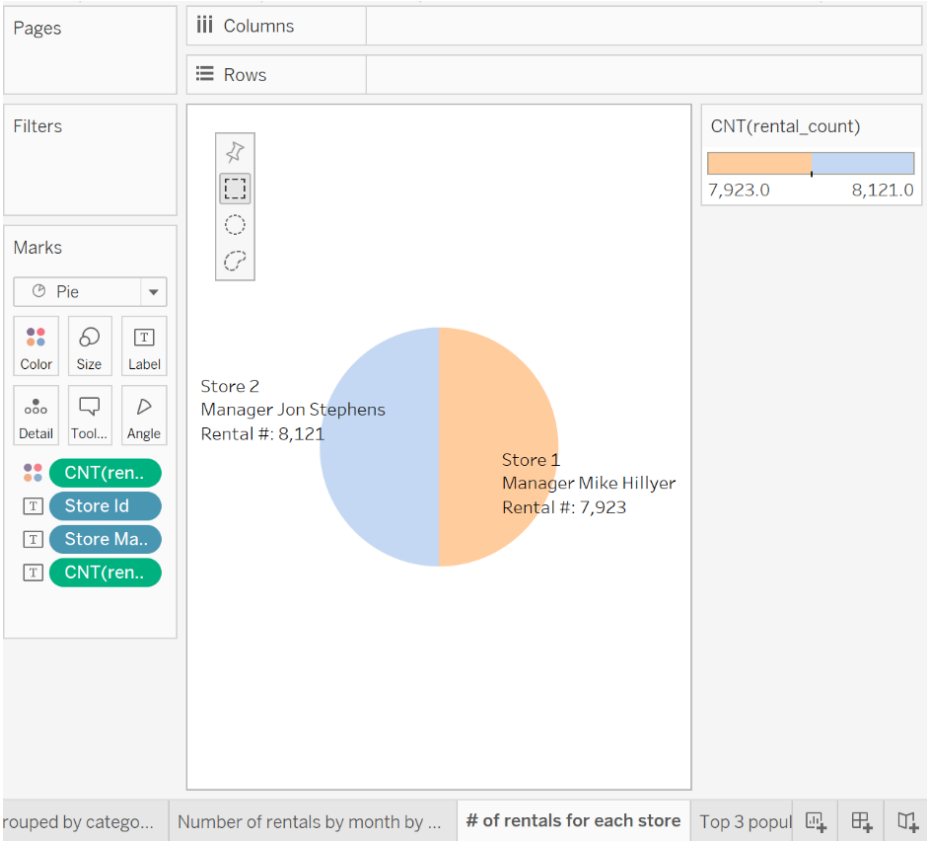
Identify errors: I find insert errors in insert Sci-Fi category data. In sakila, it's Sci-Fi, but in the given insert dim_category part, it's scifi which seems to be a typo, which causes Sci-Fi categories are not inserted to sakila.snowflake. And I found dim_date has no date_key like other dim tables, so I use rental/return_date_key to join dim_date to fact_rental.

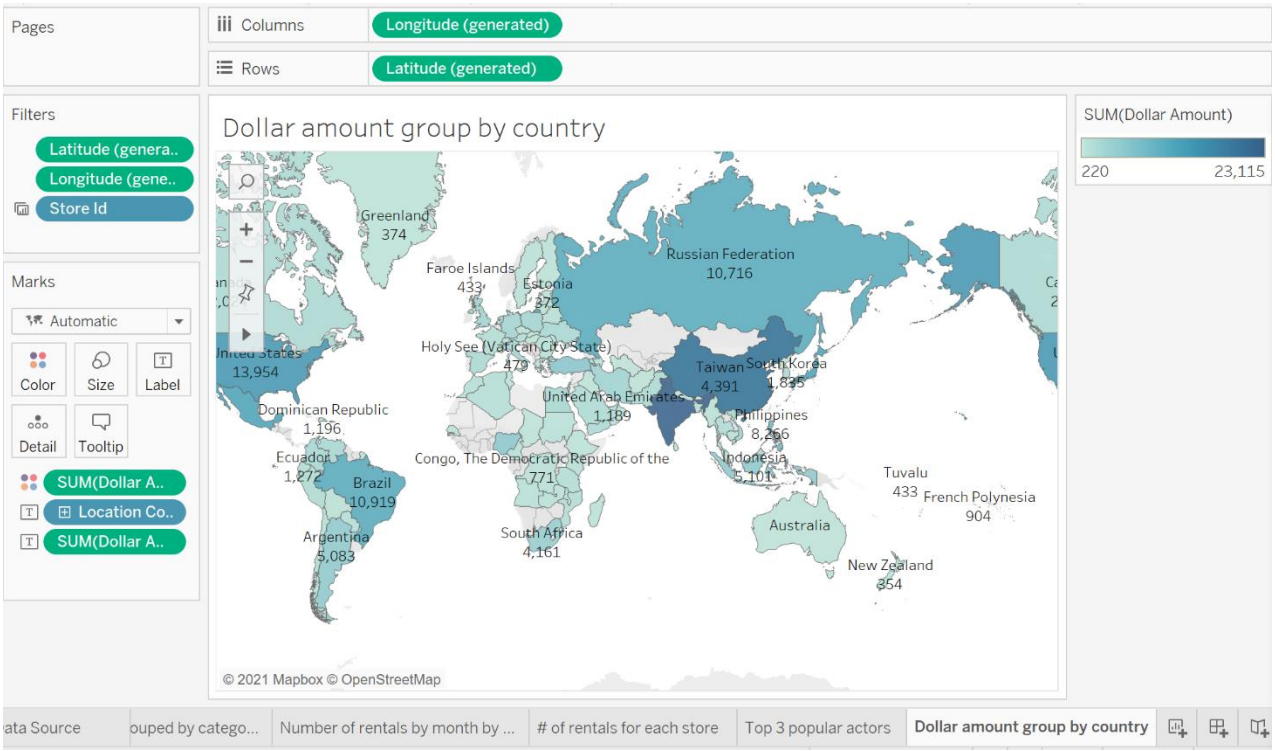
Screenshots of all Tableau reports and dashboard(s)

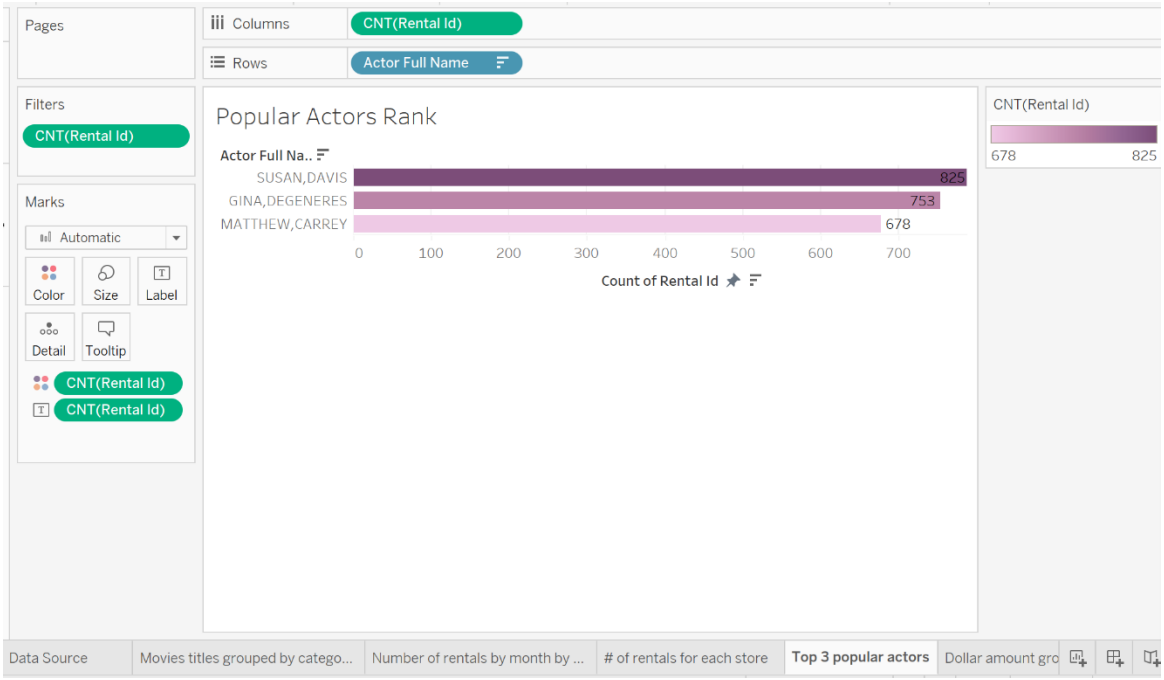
Reports


Pages
Columns
Rows
Film Category
Film Title
Filters
Movies titles grouped by categories
SUM(Film Duration)
46
185
Marks
Square
Color
Size
Label
Detail
Tooltip
SUM(Film Dur..
SUM(Film Dur..
Film Catego..
Film Title
Action
AMADEUS HOLY 113
AMERICAN CIRCUS 129
ANTITRUST TOMATOES 168
ARK RIDGEMONT 68
BAREFOOT MANCHUR.. 129
BERETS AGENT 77
BRIDE INTRIGUE 56
BULL SHAWSHANK 125
CADDYSHACK JEDI 52
CAMPUS REMEMBER 167
CASUALTIES ENCINO 179
CELEBRITY HORN 110
CLUELESS BUCKET 95
CROW GREASE 104
DANCES NONE 58
DARKO DORADO 130
DARN FORRESTER 185
DEVIL DESIRE 87
grouped by categ...
Number of rentals by month by ...
# of rentals for each store
Top 3 popul

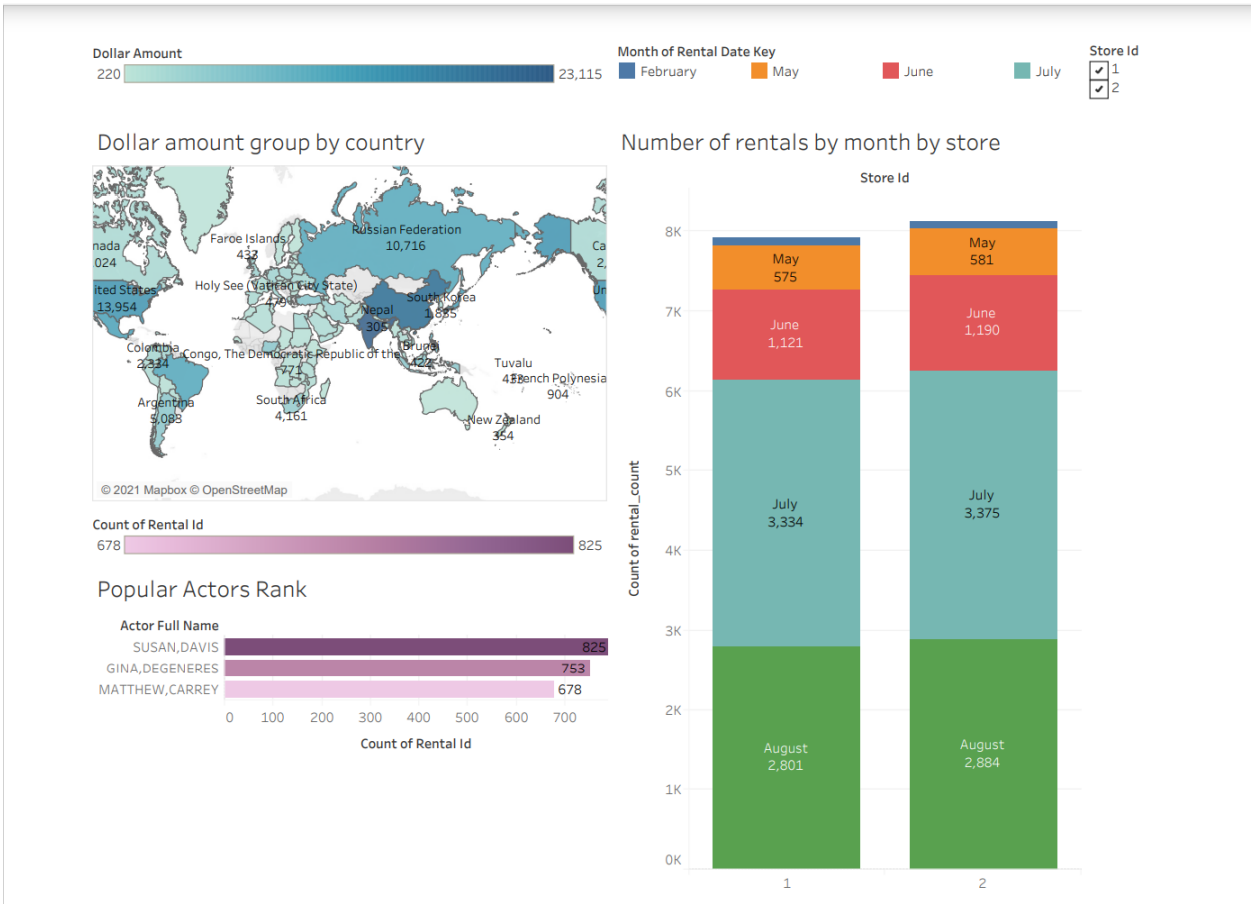

Pages
Columns
Store Id
Rows
CNT(rental_count)
Filters
Store Id
Number of rentals by month by store
MONTH(Rental Date K...
February
May
June
July
August
Marks
Bar
Color
Size
Label
Detail
Tooltip
MONTH(Re..
MONTH(Re..
SUM(rental_co..
Store Id
Count of rental_count
8K
7K
6K
5K
4K
3K
2K
1K
0K
June 1,121
July 3,334
August 2,801
June 1,190
July 3,375
August 2,884
1
2
rouped by catego...
Number of rentals by month b...
# of rentals for each store
Top 3 popul


Pages
Columns
Rows
Filters
Marks
Pie
Color
Size
Label
Detail
Tool...
Angle
CNT(ren..
Store Id
Store Ma..
CNT(ren..
CNT(rental_count)
7,923.0
8,121.0
Store 2
Manager Jon Stephens
Rental #: 8,121
Store 1
Manager Mike Hillyer
Rental #: 7,923
rouped by catego...
Number of rentals by month by ...
# of rentals for each store
Top 3 popul


Pages
Columns
Longitude (generated)
Rows
Latitude (generated)
Filters
Latitude (genera..
Longitude (gene..
Store Id
Marks
Automatic
Color
Size
Label
Detail
Tooltip
SUM(Dollar A..
Location Co..
SUM(Dollar A..
Dollar amount group by country
SUM(Dollar Amount)
220
23,115
Greenland
374
Faroe Islands
433
Estonia
372
Russian Federation
10,716
Holy See (Vatican City State)
473
United States
13,954
Taiwan
4,391
South Korea
1,835
United Arab Emirates
1,189
Philippines
8,266
Dominican Republic
1,196
Ecuador
1,272
Brazil
10,919
Argentina
5,083
Congo, The Democratic Republic of the
771
Indonesia
5,101
Tuvalu
433
French Polynesia
904
Australia
South Africa
4,161
New Zealand
354
© 2021 Mapbox © OpenStreetMap
ata Source
ouped by catego...
Number of rentals by month by ...
# of rentals for each store
Top 3 popular actors
Dollar amount group by country


Pages
Columns
CNT(Rental Id)
Rows
Actor Full Name
Filters
CNT(Rental Id)
Marks
Automatic
Color
Size
Label
Detail
Tooltip
CNT(Rental Id)
CNT(Rental Id)
Popular Actors Rank
Actor Full Na..
SUSAN,DAVIS
GINA,DEGENERES
MATTHEW,CARREY
825
753
678
0
100
200
300
400
500
600
700
Count of Rental Id
CNT(Rental Id)
678
825
Data Source
Movies titles grouped by catego...
Number of rentals by month by ...
# of rentals for each store
Top 3 popular actors
Dollar amount gro

Dashboard:


Dollar Amount
220
23,115
Month of Rental Date Key
February
May
June
July
Store Id
1
2
Dollar amount group by country
Russian Federation
10,716
Faroe Islands
432
Holy See (Vatican City State)
Nepal
306
South Korea
Colombia
2,334
Congo, The Democratic Republic of the
771
Tuvalu
French Polynesia
904
Argentina
South Africa
4,161
New Zealand
354
© 2021 Mapbox © OpenStreetMap
Count of Rental Id
678
825
Popular Actors Rank
Actor Full Name
SUSAN,DAVIS
GINA,DEGENERES
MATTHEW,CARREY
825
753
678
0
100
200
300
400
500
600
700
Count of Rental Id
Number of rentals by month by store
Store Id
Count of rental_count
8K
7K
6K
5K
4K
3K
2K
1K
0K
May
575
June
1,121
July
3,334
August
2,801
May
581
June
1,190
July
3,375
August
2,884
1
2