

Do the musical styles of our entertainers align with the preferences of our customers?

- 1) Do we have enough entertainers in certain musical styles to meet the demand of customers
- 2) On the other hand, do we have an oversupply of entertainers in other musical styles that have less demand?
 - a) From here, we can look at profitability of each entertainer to see which ones make sense to drop

-- most popular musical styles

```
select ms.stylename, count(mp.styleid) pref_count from musical_styles ms
join musical_preferences mp
on ms.styleid = mp.styleid
group by ms.stylename
order by count(mp.styleid) desc;
```

-- count of musical styles from our entertainers

```
select ms.stylename, count(es.styleid) entertainer_count from entertainer_styles es
join musical_styles ms
on ms.styleid = es.styleid
group by ms.stylename
order by count(es.styleid) desc;
```

--determining the difference between customer preference & entertainers

```
with style_popularity as (select ms.stylename, count(mp.styleid) pref_count from
musical_styles ms
join musical_preferences mp
on ms.styleid = mp.styleid
group by ms.stylename
order by count(mp.styleid) desc),
entertainer_styles as (select ms.stylename stylename, count(es.styleid)
entertainer_count from entertainer_styles es
join musical_styles ms
on ms.styleid = es.styleid
group by ms.stylename
order by count(es.styleid) desc)
select sp.stylename, sp.pref_count, ents.entertainer_count, (sp.pref_count-
ents.entertainer_count) difference from style_popularity sp
join entertainer_styles ents
```

on sp.stylename = ents.stylename
order by (sp.pref_count-ents.entertainer_count)

A-Z stylename	123 pref_count	123 entertainer_count	123 difference
Chamber Music	4	8	-4
60's Music	4	8	-4
Country	4	8	-4
Variety	4	8	-4
Folk	4	8	-4
Classical	8	12	-4
Show Tunes	8	8	0
Salsa	8	8	0
Top 40 Hits	8	8	0
70's Music	4	4	0
Country Rock	4	4	0
Motown	4	4	0

The following musical styles (Standards, Classic Rock & Roll, Jazz, Contemporary, Rhythm and Blues) have more customer demand than supply. Can look into opportunities to sign more of these types of entertainers:

- Can potentially look into agents that represent entertainers with these style strengths - putting them on more projects/increasing their commission rates?

The following musical styles (Chamber Music, 60's Music, Country, Variety, Folk and Classical) all have more entertainers than customer preference. Will assess the profitability of each entertainer in these styles to determine if it makes sense to drop some of them (based on hourly commission and contract price)

--number of engagements per entertainer that specializes in "unpopular styles"

```
SELECT e.entertainerid, e.entstagename, count(distinct en.engagementnumber)
num_engagements FROM entertainers e
join engagements en
on e.entertainerid = en.entertainerid
where e.entstagename in (select distinct e.entstagename from entertainer_styles es
join entertainers e
on e.entertainerid = es.entertainerid
join musical_styles ms
on es.styleid = ms.styleid
```

```

where ms.stylename in (with style_popularity as (select ms.stylename,
count(mp.styleid) pref_count from musical_styles ms
join musical_preferences mp
on ms.styleid = mp.styleid
group by ms.stylename
order by count(mp.styleid) desc),
entertainer_styles as (select ms.stylename stylename, count(es.styleid)
entertainer_count from entertainer_styles es
join musical_styles ms
on ms.styleid = es.styleid
group by ms.stylename
order by count(es.styleid) desc)
select sp.stylename from style_popularity sp
join entertainer_styles ents
on sp.stylename = ents.stylename
where (sp.pref_count-ents.entertainer_count) <0
order by (sp.pref_count-ents.entertainer_count)))
group by e.entertainerid, e.entstagename
order by count(distinct en.engagementnumber);

```

123 entertainerid ▼	A-Z entstagename ▼	123 num_engagements ▼
1,012	Susan McLain	6
1,002	Topazz	7
1,007	Coldwater Cattle Company	8
1,011	Julia Schnebly	8
1,004	Jim Glynn	9
1,006	Modern Dance	10
1,003	JV & the Deep Six	10
1,008	Country Feeling	15

-- total commission earned from each entertainer that specializes in a low-popularity music style

```

with commissions as (select distinct a.agentid, e.entstagename, a.commissionrate,
en.contractprice, round(a.commissionrate * en.contractprice) commission_total from
agents a
join engagements en
on a.agentid = en.agentid
join entertainers e

```

```

on e.entertainerid = en.entertainerid
where e.entstagename in (select distinct e.entstagename from entertainer_styles es
join entertainers e
on e.entertainerid = es.entertainerid
join musical_styles ms
on es.styleid = ms.styleid
where ms.stylename in (with style_popularity as (select ms.stylename,
count(mp.styleid) pref_count from musical_styles ms
join musical_preferences mp
on ms.styleid = mp.styleid
group by ms.stylename
order by count(mp.styleid) desc),
entertainer_styles as (select ms.stylename stylename, count(es.styleid)
entertainer_count from entertainer_styles es
join musical_styles ms
on ms.styleid = es.styleid
group by ms.stylename
order by count(es.styleid) desc)
select sp.stylename from style_popularity sp
join entertainer_styles ents
on sp.stylename = ents.stylename
where (sp.pref_count-ents.entertainer_count) <0
order by (sp.pref_count-ents.entertainer_count)))
group by a.agentid, e.entertainerid, e.entstagename, a.commissionrate,
en.contractprice
order by e.entstagename)
select entstagename, sum(commission_total) total_commission_earned,
sum(contractprice) total_engagement_earnings from commissions
group by entstagename
order by sum(commission_total);

```

A-Z entstagename ▼	123 total_commission_earned ▼	123 total_engagement_earnings ▼
Jim Glynn	129	2,830
Susan McLain	130	2,670
Julia Schnebly	215	4,345
Topazz	324	6,620
Modern Dance	715	14,600
Coldwater Cattle Company	719	14,875
JV & the Deep Six	766	17,150
Country Feeling	1,779	34,080

Potential questions to answer:

1. Agents

Does agent salary and commission rate reflect their performance?

One agent, Daffy Dumbwit, outlier, maybe a typo?

2. Customers

Add a column for "customer since (date)"

Add column for events this customer attended

For better targeting loyal costumers and promote future events

3. Engagements

What events are most popular?

Which agent is best at making money for the company?

Which agent handle most events? Most customers?

4. Entertainers

Location: match entertainer with events close to them?

Date entered: bonus for entertainers who joined for a long time?

5. Entertainer_Members

What does status 1 and 2 mean?

Which entertainer is the most popular?

Which member shows up the most?

6. Members

Gender contains null value

7. Entertainer_Styles

basic EDA

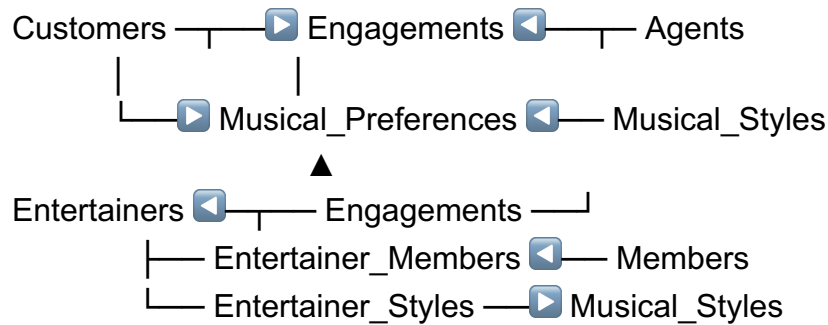
which entertainer have stronger stylestrength, are their salary reflected properly

9. Musical_Preferences

Do we have data for all customers?

How to target promotion?

Table relationship



Check for null value and outliers (potential incorrect input) (collab)

- ✓ No nulls in table: Agents
- ✓ No nulls in table: Customers
- ✓ No nulls in table: Engagements
- ✓ No nulls in table: Entainer_Members
- ✓ No nulls in table: Entainer_Styles
- ✗ Null values in table: Entertainers
 - EntWebPage 5
 - EntEmailAddress 6
 - dtype: int64
- ✗ Null values in table: Members
 - Gender 1
 - dtype: int64
- ✓ No nulls in table: Musical_Preferences
- ✓ No nulls in table: Musical_Styles
- ✓ No nulls in table: ztblDays
- ✓ No nulls in table: ztblMonths
- ✓ No nulls in table: ztblSkipLabels
- ✓ No nulls in table: ztblWeeks

-- 1. Data Core - customers, agents, entertainers

-- 2. Customer - top 5 based on contractprice, no. of engagements, Retention trend based on dates

Top 5 customers based on contractprice

SELECT

c.CustomerID,
c.CustFirstName, c.CustLastName,
SUM(e.ContractPrice) AS TotalSpent

FROM Engagements e

JOIN Customers c **ON** e.CustomerID = c.CustomerID

GROUP BY c.CustomerID, c.CustFirstName, c.CustLastName

ORDER BY TotalSpent **DESC**

LIMIT 5;

	123 customerid ▼	ABC custfirstname ▼	ABC custlastname ▼	123 totalspent ▼
1	10,005	Elizabeth	Hallmark	25,585
2	10,006	Matt	Berg	13,170
3	10,014	Mark	Rosales	12,770
4	10,010	Zachary	Ehrlich	12,455
5	10,002	Deb	Waldal	12,320

Most Frequent Customers (by no. of engagements)

SELECT

c.CustomerID,
c.CustFirstName, c.CustLastName,
COUNT(*) AS EngagementCount

FROM Engagements e

JOIN Customers c **ON** e.CustomerID = c.CustomerID

GROUP BY c.CustomerID, c.CustFirstName, c.CustLastName

ORDER BY EngagementCount **DESC**

LIMIT 5;

	123 customerid ▼	ABC custfirstname ▼	ABC custlastname ▼	123 engagementcount ▼
1	10,010	Zachary	Ehrlich	13
2	10,004	Dean	McCrae	11
3	10,014	Mark	Rosales	10
4	10,002	Deb	Waldal	10
5	10,006	Matt	Berg	9

Zachary => Loyalty opportunity (retention)

Elizabeth => High-value contract (premium targeting); however not in top engagements

Dean 10004: 2nd highest but contractprice less - rank 6 in top 5 customers based on contractprice.

-- 3. Agents - top 5 based on contractprice, no. of customers associated

-- 4. Entertainers - top contracts, top liked styles

Top Entertainers by Number of Bookings

SELECT

e.EntertainerID,
en.entstagename ,
COUNT(*) AS BookingCount


FROM Engagements e

JOIN Entertainers en ON e.EntertainerID = en.EntertainerID

GROUP BY e.EntertainerID, en.entstagename

ORDER BY BookingCount DESC

LIMIT 5;

	123 entertainerid ▼	RBC entstagename ▼	123 bookingcount ▼
1	1,008	Country Feeling	15
2	1,001	Carol Peacock Trio	11
3	1,013	Caroline Coie Cuartet	11
4	1,003	JV & the Deep Six	10
5	1,006	Modern Dance	10

Top entertainers by total revenue generated

SELECT

e.EntertainerID,
en.entstagename ,
SUM(e.ContractPrice) AS TotalRevenue


FROM Engagements e

JOIN Entertainers en ON e.EntertainerID = en.EntertainerID

GROUP BY e.EntertainerID, en.entstagename

ORDER BY TotalRevenue DESC

LIMIT 5;

	 123 entertainerid ▼	ABC entstagenename ▼	123 totalrevenue ▼
1	1,008	Country Feeling	34,080
2	1,003	JV & the Deep Six	17,150
3	1,013	Caroline Coie Cuartet	15,070
4	1,007	Coldwater Cattle Company	14,875
5	1,006	Modern Dance	14,600

-- 5. Customer loyalty - multiple engagements, diff agents and entertainers - referral incentive program

-- 6. Revenue Impact (contractprice, commission)

-- 7. Time based EDA - contract length, peak seasons

-- 8. Price discrepancies

-- ADVANCED

-- 9. Whether style diversity drives higher demand

-- 10. Zero Engagements

-- 11. Grouping based on address columns to see trends