



SHARING FOUNDATION

GROUP 10:

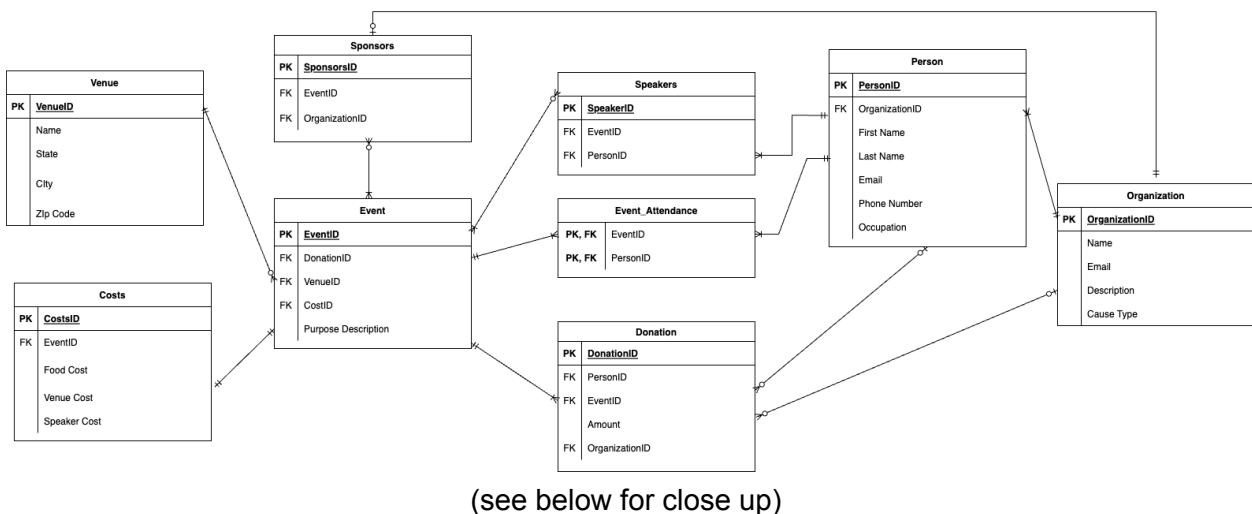
- Michaela Tran
- Emma Esteban
- Matthew Chung
- Vy Nguyen

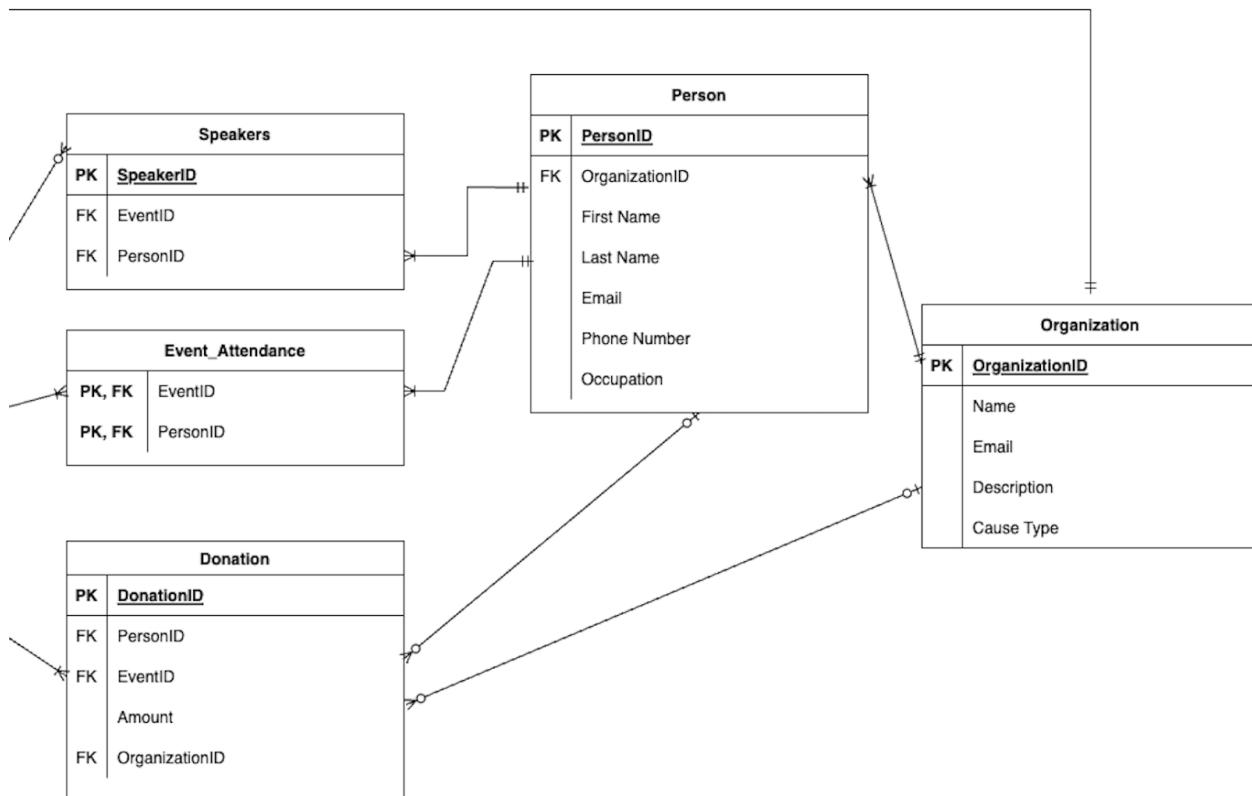
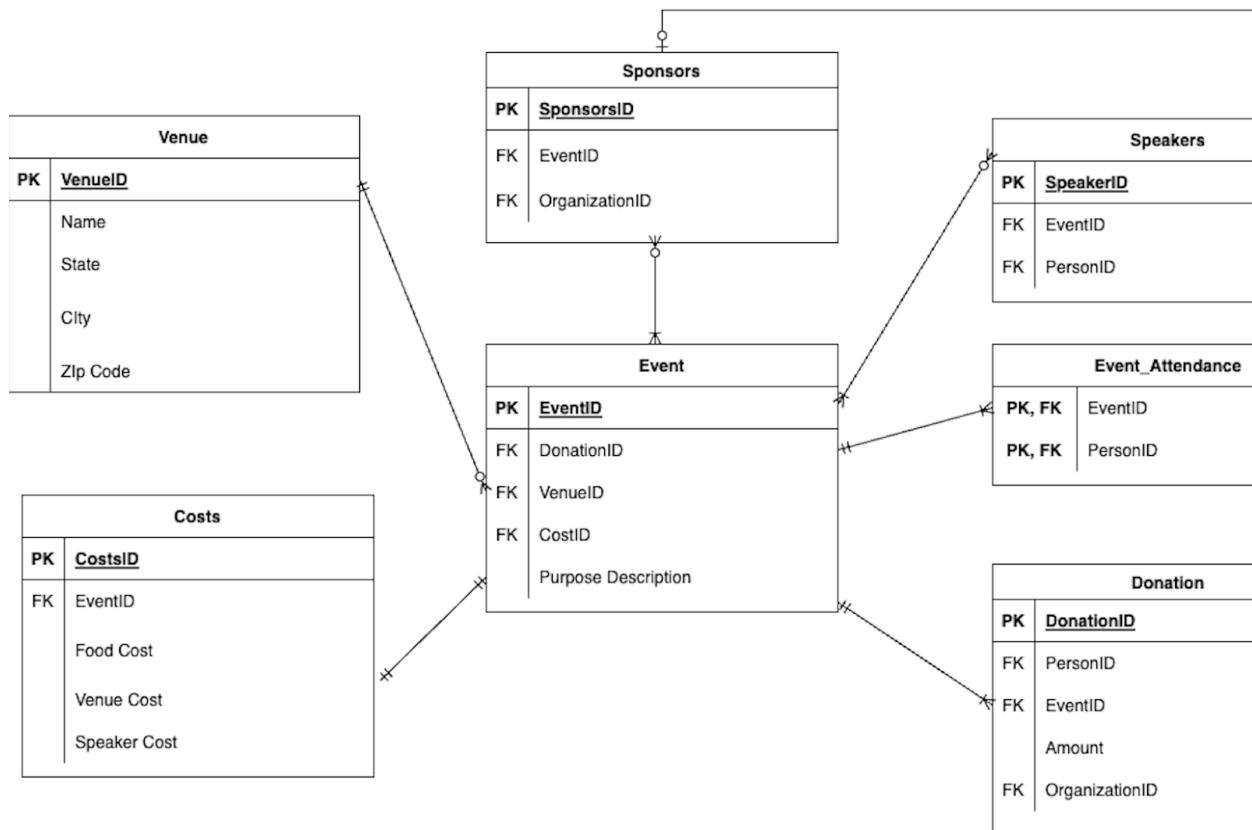
There are so many things to take into consideration when planning events, the Sharing Foundation was looking for a way to keep the records of their events organized and readable. They enlisted the help of us, so that we could create a database that organizes all of their charity events, presenting key information about each event. The problem that the Sharing Foundation found was that they had kept written records of all of their events, which meant that if they ever wanted to go back to look at specific events or guests, it created challenges and long processes. With the database they are able to parse through all of their events efficiently allowing them to compare different outcomes and use what worked in the past for future events. They found themselves looking back at different venues, donors, speakers, etc. to help plan upcoming events. This database allows for the people of the Sharing Foundation to create decisions within a timely manner, allowing them to have more time to plan more charitable events.

For the business and administrative needs of the Sharing Foundation, they would need to store information about each event, the event venue, total cost, donations. For the foundation's community building, professional, and security needs, they must have information on all the people and sponsors (as well as the organizations they are associated with) that attend their events like speakers, guests, and donors.

The following is the initial list of what we propose are our main entities for this database: 1) Venue, 2) Costs, 3) Event, 4) Guest, 5) Speaker, 6) Donation, 7) Person, 8) Sponsor, and 9) Organization.

Entity Relationship Diagram





Business Rules

The Sharing Foundation hosts a variety of charity events and must keep track of all aspects of the events.

For each Sharing Foundation event, they must track the event ID number, venue ID number, cost ID number, and description of the purpose of the event.

There can be many speakers that attend or no speakers at an event, tracked by a speaker ID, the event ID and their person ID.

There must be attendees with each having an event ID and a person ID. Attendees can attend many events.

A person is either considered an attendee or a speaker at each event. A person that attends any event by the Sharing Foundation must be part of an organization. They are tracked by a person ID, organization ID, first name, last name, email, phone number, and occupation.

Each event can also be sponsored by many sponsors or none. Sponsors must be tracked by a sponsors ID, the event ID, and the organization ID.

There is an option to make a donation at each event. Donations can be made by either a person or an organization. Donations are tracked by a donation ID, a person ID (if applicable), the event ID, amount, and organization ID (if applicable).

A person must be associated with an organization. For each organization, there must be an organization ID number, organization name, email address, a description of the organization, and the type of cause the organization works toward (e.g. environmental, health, homelessness, etc). Multiple people can be in the same organization.

Organizations can also choose to be a sponsor for several events. Sponsors have a sponsor ID number and are associated with one given event and one organization only. An event can have several sponsors. Events may also have no sponsor.

A venue is where events can take place. Each venue will have a venue ID number, a name, and a location (State, City, and Zip Code). Every event will have one venue. A venue may be used for several events or none at all.

Each event will have costs. The costs of an event will have a costs ID number and a value of the amount of money for food costs, venue cost, and speaker cost.

Relational Schema

Sponsors(SponsorID: INTEGER, EventID: INTEGER, Organization: INTEGER)
Event(EventID: INTEGER, VenueID: INTEGER, Description: VARCHAR(200))
Speakers(SpeakerID: INTEGER, EventID: INTEGER, PersonID: INTEGER)
Event_Attendance(EventID: INTEGER, PersonID: INTEGER)
Costs(CostID: INTEGER, EventID: INTEGER, Food_Cost: SMALLMONEY, Venue_Cost: SMALLMONEY, Speaker_Cost: SMALLMONEY)
Venue(VenueID: INTEGER, Name: VARCHAR(50), State: VARCHAR(50), City: VARCHAR(50), Zipcode: INTEGER)
Donations(DonationID: INTEGER, PersonID: INT, EventID: INTEGER, Amount: SMALLMONEY, OrganizationID: INTEGER)
Organization(OrganizationID: INTEGER, Name: VARCHAR(50), Email: VARCHAR(50), Description: TEXT, Cause_Type: VARCHAR(50))
Person(PersonID: INTEGER, OrganizationID: INTEGER, First_Name: VARCHAR(50), Last_Name: VARCHAR(50), Email: VARCHAR(50), Phone_Number: INTEGER, Occupation: VARCHAR(50))

Query Results and Discussion

1) The most generous organizations on average

```
1 USE SharingFoundation
2
3 -- 1) Most generous organizations on average
4
5 WITH AvgOrganizationDonation AS (
6     SELECT OrganizationID, ROUND(AVG(Amount), 2) as avg_donation_amt
7     FROM Donations
8     GROUP BY OrganizationID
9 )
10
11 SELECT d.OrganizationID, ad.avg_donation_amt
12 FROM Donations d
13 JOIN AvgOrganizationDonation ad
14 ON d.OrganizationID = ad.OrganizationID
15 GROUP BY d.OrganizationID, ad.avg_donation_amt
16 HAVING ad.avg_donation_amt > (SELECT AVG(Amount) FROM Donations WHERE OrganizationID IS NOT NULL);
17
```

	OrganizationID	avg_donation_amt
1	601	1505.00
2	603	955.00
3	604	1140.00
4	607	1990.00
5	609	945.00
6	610	1780.00
7	614	1280.00
8	615	1980.00
9	616	1050.00
10	617	930.00
11	621	1060.00
12	623	1190.00
13	624	1690.00
14	625	1200.00
15	628	1225.00
16	631	1710.00
17	633	1110.00
18	635	1135.00
19	642	1156.67
20	643	1076.67
21	644	1900.00

This query looks at the results of using a CTE to find the average donation amount of an organization compared to the average amount donated by all organizations. It returns organizations with average donation amounts greater than the average amount donated by all organizations. There are 21 organizations that have donated a higher average amount than all

others combined. This would allow the Sharing Foundation to analyze which organizations donate the most, and would be more inclined to invite them to events and maintain good relations in order to continue receiving higher donations.

2) Individuals most willing to donate compared to organizations

```
19 -- 2 Return individual people that have donated a total more than any organization's total donations
20
21 WITH TotalPersonDonation AS (
22     SELECT PersonID, ROUND(SUM(Amount), 2) as total_person_donation
23     FROM Donations
24     GROUP BY PersonID
25 ),
26 TotalIndividualOrgDonation AS (
27     SELECT OrganizationID, ROUND(SUM(Amount), 2) as total_org_donation
28     FROM Donations
29     GROUP BY OrganizationID
30 )
31
32     SELECT d.PersonID, tpd.total_person_donation
33     FROM Donations d
34     LEFT JOIN TotalPersonDonation tpd
35     ON d.PersonID = tpd.PersonID
36     WHERE tpd.total_person_donation > (SELECT MAX(tod.total_org_donation) FROM
37     TotalIndividualOrgDonation tod
38     WHERE d.OrganizationID = tod.OrganizationID)
39     GROUP BY d.PersonID, tpd.total_person_donation
40
41
--
```

Results Messages

PersonID	total_person_d...
1	1000.00

Results grid

This query looks at the results of using two CTEs to find the total donation amounts of an individual compared to total donation amounts of organizations. It returns individual people with total donation amounts greater than the total amount donated by an organization . There are no individuals that have donated a higher total amount than an organization. This would've allowed the Sharing Foundation to analyze which individuals are more willing to donate to events, and would be more inclined to invite these individuals.

3) Events with the highest total donations

```

44
45  -- 3 Events with the highest total donations
46
47  SELECT TOP 10 SUM(d.Amount) as total_donation, e.EventID, e.Description
48  FROM Donations d
49  JOIN Event e
50  ON d.EventID = e.EventID
51  GROUP BY e.EventID, e.Description
52  ORDER BY total_donation DESC;
53

```

Results Messages

	total_donation	EventID	Description
1	9060.00	15	Photography Exhibition
2	8380.00	9	Book Fair
3	8210.00	8	Trade Show and Expo
4	7880.00	16	Marketing Workshop
5	7630.00	13	Cultural Festival
6	7470.00	44	DIY Workshop
7	7450.00	2	Concert for Charity
8	7250.00	11	Industry Conference
9	7200.00	43	Climate Change Symposium
10	6700.00	17	World Cup Final Viewing

This query looks at the results of joining the donation and event tables to find which 10 events had the highest donation amounts. It returns the events and descriptions of events with the highest donation amounts. The Sharing Foundation could use this information to understand which events are the most successful in terms of raising money for good causes, and could plan more of these types of events in the future.

4) Events where people donated more than organizations

```

52  -- 4 Events where people donated more than organizations
53
54  WITH EventPersonDonation AS (
55      SELECT EventID, ROUND(SUM(Amount), 2) as person_donation
56      FROM Donations
57      WHERE PersonID IS NOT NULL
58      GROUP BY PersonID, EventID
59  ),
60  EventOrgDonation AS (
61      SELECT EventID, ROUND(SUM(Amount), 2) as org_donation
62      FROM Donations
63      WHERE OrganizationID IS NOT NULL
64      GROUP BY OrganizationID, EventID
65  )
66
67  SELECT d.EventID, e.Description
68  FROM Donations d
69  LEFT JOIN EventPersonDonation epd
70  ON d.EventID = epd.EventID
71  LEFT JOIN EventOrgDonation eod
72  ON d.EventID = eod.EventID
73  LEFT JOIN Event e
74  ON e.EventID = d.EventID
75  GROUP BY d.EventID, epd.person_donation, eod.org_donation, e.Description
76  HAVING epd.person_donation > eod.org_donation;
77

```

	EventID	Description
1	2	Concert for Charity
2	2	Concert for Charity
3	2	Concert for Charity
4	2	Concert for Charity
5	2	Concert for Charity
6	2	Concert for Charity
7	3	Fundraising Festival
8	3	Fundraising Festival
9	3	Fundraising Festival
10	3	Fundraising Festival
11	3	Fundraising Festival
12	3	Fundraising Festival
13	3	Fundraising Festival
14	3	Fundraising Festival
15	3	Fundraising Festival
16	4	Seminar on Leadership
17	4	Seminar on Leadership
18	4	Seminar on Leadership
19	4	Seminar on Leadership
20	7	Sports Tournament
21	7	Sports Tournament
22	7	Sports Tournament
23	8	Trade Show and Expo
24	8	Trade Show and Expo
25	8	Trade Show and Expo
26	8	Trade Show and Expo
27	8	Trade Show and Expo
28	8	Trade Show and Expo
29	9	Book Fair
30	9	Book Fair

This query looks at the results of two CTEs, one calculating the total amount donated by people at an event, and the other calculating the total amount donated by an organization at an event. It returns the events and descriptions of events where individuals donated more than organizations. The Sharing Foundation could use this information to understand which events individuals are more inclined to donate to, and which events organizations aren't as willing to donate to, and could plan events based on attracting more individuals or organizations.

5) Events that were more expensive than the amount they received in donations

```

68  -- 5) Events that were more expensive than the amount they received in donations
69
70  WITH EventOverallCost AS (
71      SELECT EventID, (Food_Cost + Venue_Cost + Speaker_Cost) AS event_total_cost
72      FROM Costs
73  ),
74  EventTotalDonation AS (
75      SELECT EventID, SUM(Amount) as event_donation_amt
76      FROM Donations
77      GROUP BY EventID
78  )
79
80  SELECT c.EventID, eoc.event_total_cost, etd.event_donation_amt
81  FROM Costs c
82  JOIN EventOverallCost eoc
83  ON c.EventID = eoc.EventID
84  JOIN EventTotalDonation etd
85  ON c.EventID = etd.EventID
86  GROUP BY c.EventID, eoc.event_total_cost, etd.event_donation_amt
87  HAVING eoc.event_total_cost > etd.event_donation_amt;
88
89
90  -- 6 What "type" of event has the lowest ratio of total donations compared to the cost o

```

Results Messages

	EventID	event_total_cost	event_donation_amt
1	33	1158.00	620.00
2	34	891.00	640.00

This query looks at the results of two CTEs, one calculating the total cost of an event and the other calculating the total amount donated at an event. It returns the events where the cost of the event was greater than the total amount donated. Only two events have cost more to host than the amount they received in donations. The Sharing Foundation could use this information to understand which events are too expensive to host in comparison to the amount of donations they receive in order to plan more cost-effective events that can reap better results.

6) Most cost-effective events between conferences, expos, concerts, and fairs

```

98  -- 6 Most cost-effective events that are conferences, expos, concert, or fairs (cost is less than donations)
99
100 WITH EventOverallCost AS (
101     SELECT EventID, (Food_Cost + Venue_Cost + Speaker_Cost) AS event_total_cost
102     FROM Costs
103 ),
104 EventTotalDonation AS (
105     SELECT e.EventID, SUM(Amount) as event_donation_amt, e.Description
106     FROM Donations d
107     LEFT JOIN Event e
108     ON d.EventId = e.EventID
109     WHERE e.Description LIKE '%Conference%' OR e.Description LIKE '%Expo%' OR e.Description LIKE '%Concert%' OR e.Description LIKE '%Fair%'
110     GROUP BY e.EventID, e.Description
111 )
112
113     SELECT c.EventID, eoc.event_total_cost, etd.event_donation_amt, etd.Description
114     FROM Costs c
115     JOIN EventOverallCost eoc
116     ON c.EventID = eoc.EventID
117     JOIN EventTotalDonation etd
118     ON c.EventID = etd.EventID
119     GROUP BY c.EventID, eoc.event_total_cost, etd.event_donation_amt, etd.Description
120     HAVING eoc.event_total_cost < etd.event_donation_amt;
121
122

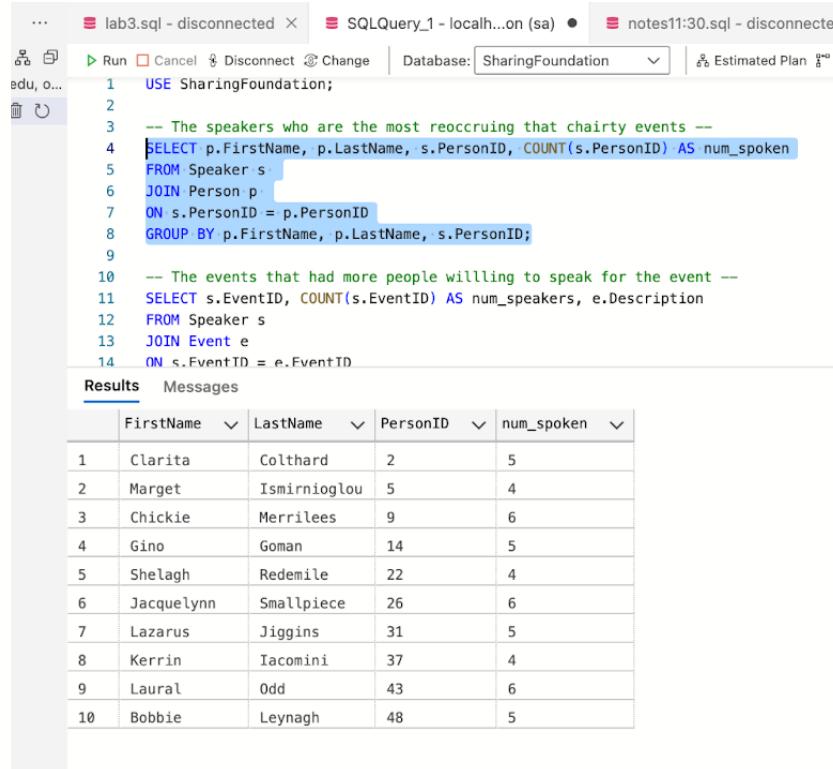
```

Results Messages

	EventID	event_total_cost	event_donation_amt	Description
1	1	616.00	860.00	Conference on Technology
2	2	658.00	7450.00	Concert for Charity
3	8	608.00	8210.00	Trade Show and Expo
4	9	924.00	8380.00	Book Fair
5	11	873.00	7250.00	Industry Conference
6	12	1071.00	6180.00	New Year's Eve Concert
7	18	987.00	3810.00	Technology Expo
8	19	1063.00	4800.00	Literary Fair
9	25	862.00	6120.00	Environmental Conference
10	26	939.00	5540.00	Food and Beverage Expo
11	28	534.00	2810.00	Travel and Adventure Fair
12	32	744.00	2210.00	Human Rights Conference
13	37	490.00	3800.00	Technology and Innovation Expo
14	40	1038.00	2030.00	Health and Wellness Fair
15	41	1171.00	6050.00	Music and Technology Conference
16	42	1012.00	3700.00	Global Business Expo

This query looks at the results of two CTEs, one calculating the total cost of an event and the other calculating the total amount donated to events that were conferences, expos, concerts, or fairs. It returns the events where the cost of the event was less than than the total amount donated. Conferences, expos, concerts, and fairs were chosen because they are generally attended by the most people, and could generate greater donations but could also be more costly. The Sharing Foundation could use this information to understand which specific events have been the most successful in generating donations despite higher costs to host so that they could potentially host similar events.

7) The speakers who are the most recurring that charity events



The screenshot shows a SQL Server Management Studio window with three tabs at the top: 'lab3.sql - disconnected' (closed), 'SQLQuery_1 - localhost (sa)' (selected), and 'notes11:30.sql - disconnected' (closed). The database dropdown shows 'SharingFoundation'. Below the tabs is a toolbar with 'Run', 'Cancel & Disconnect', 'Change', and a dropdown for 'Database'. To the right is an 'Estimated Plan' button. The main area contains a numbered SQL query:

```
... lab3.sql - disconnected × SQLQuery_1 - localhost (sa) • notes11:30.sql - disconnected
...
1 USE SharingFoundation;
2
3 -- The speakers who are the most reoccurring that chairy events --
4 SELECT p.FirstName, p.LastName, s.PersonID, COUNT(s.PersonID) AS num_spoken
5 FROM Speaker s
6 JOIN Person p
7 ON s.PersonID = p.PersonID
8 GROUP BY p.FirstName, p.LastName, s.PersonID;
9
10 -- The events that had more people willing to speak for the event --
11 SELECT s.EventID, COUNT(s.EventID) AS num_speakers, e.Description
12 FROM Speaker s
13 JOIN Event e
14 ON s.EventID = e.EventID;
```

Below the query is a 'Results' tab with a table showing the results:

	FirstName	LastName	PersonID	num_spoken
1	Clarita	Colthard	2	5
2	Marget	Ismirnioglu	5	4
3	Chickie	Merrilees	9	6
4	Gino	Goman	14	5
5	Shelagh	Redemile	22	4
6	Jacquelynn	Smallpiece	26	6
7	Lazarus	Jiggins	31	5
8	Kerrin	Iacomini	37	4
9	Laural	Odd	43	6
10	Bobbie	Leynagh	48	5

This query looks at the results of joining the Speaker and Person table and finding the times a person has been a speaker. As you can see Chickie, Jacquelynn, and Laural have spoken at 6 events. This is important to the Sharing Foundation because when planning new events and are in need of speakers, they are able to go back to this table to determine which people are more likely to say yes to speaking and ask them first. The people that have not been speakers can be bothered less, creating less tension between connections.

8) The events that had more people willing to speak for the event

The screenshot shows a SQL Server Management Studio window with three tabs at the top: 'lab3.sql - disconnected', 'SQLQuery_1 - localh...on (sa)', and 'notes11:30.sql - d'. The 'Database' dropdown is set to 'SharingFoundation'. The main area contains a query window with the following T-SQL code:

```

7  ON s.PersonID = p.PersonID
8  GROUP BY p.FirstName, p.LastName, s.PersonID;
9
10 -- The events that had more people willing to speak for the event --
11 SELECT s.EventID, COUNT(s.EventID) AS num_speakers, e.Description
12 FROM Speaker s
13 JOIN Event e
14 ON s.EventID = e.EventID
15 GROUP BY s.EventID, e.Description
16 HAVING COUNT(s.EventID) > 1;
17
18 -- The people that are most philanthropic --
19

```

Below the code, there are two tabs: 'Results' (selected) and 'Messages'. The 'Results' tab displays a table with the following data:

	EventID	num_speakers	Description
1	1	2	Conference on Technology
2	4	2	Seminar on Leadership
3	5	2	Art Exhibition
4	8	3	Trade Show and Expo
5	12	2	New Year's Eve Concert
6	14	2	Financial Seminar
7	17	2	World Cup Final Viewing
8	21	2	Health Symposium
9	22	3	Music Festival
10	26	2	Food and Beverage Expo
11	27	2	Virtual Reality Seminar
12	29	3	Education Summit
13	36	2	Virtual Art Show
14	39	2	Startup Bootcamp
15	43	2	Climate Change Symposium

This query looks at a combination of the Speaker and Event table and counts the amount of times the eventid occurs within the Speaker table. This results in finding the number of speakers at a certain event. Then the table returns the description of the event and filters for only events that have more than one speaker. This is important to the Sharing Foundation because it enables the coordinators and planners to analyze if there are any relationship between the type of event occurring and the willingness of speakers to attend the events. This can help them determine the difficulty in finding participants and to plan accordingly.

9) The people that are most willing to participate.

The screenshot shows a SQL Server Management Studio window with three tabs at the top: 'lab3.sql - disconnected', 'SQLQuery_1 - local...on (sa)', and 'notes11:30.sql - disconnected'. The 'SQLQuery_1' tab is active, displaying the following query:

```

10 -- the people that are most philanthropic
19
20 SELECT p.FirstName, p.LastName, ea.PersonID, COUNT(ea.PersonID) AS num_attended
21

```

The results grid has columns: FirstName, LastName, PersonID, and num_attended. The data is as follows:

	FirstName	LastName	PersonID	num_attended
1	Abbie	Corran	15	3
2	Camila	Rapsey	3	4
3	Maris	Hynam	35	5
4	Miranda	Sked	7	8
5	Pietrek	Claughton	18	10
6	Lanie	Waby	44	10
7	Anni	Wollen	47	11
8	Bobbie	Leynagh	48	11
9	Shelagh	Redemile	22	11
10	Kerrin	Iacomini	37	11
11	Perrine	Self	40	11
12	Laural	Odd	43	11
13	Charmaine	Tandy	27	11
14	Clarita	Colthard	2	11
15	Denys	Jambrozek	6	11
16	Paulina	Artharg	11	12
17	Shannon	Alcock	30	12
18	Lazarus	Jiggins	31	12
19	Hillel	Etheredge	19	12
20	Eward	Kernar	21	12
21	Kurt	Sondland	17	12
22	Jacquelynn	Smallpiece	26	12
23	Cherri	Bunhill	23	13
24	Billy	Bunnell	33	13
25	Wallis	Hallagan	8	13
26	Marget	Ismirniogl...	5	13
27	Gino	Goman	14	14

At the bottom of the results grid, it says 'Ln 20, Col 1 (247 selected) Spaces: 4 UTF-8'.

For a successful event one needs many people to show, determining the people that are more willing to come by looking at their past, will help the company figure out people they should invite to. The way this was determined was by counting the number of attendees by looking at the personID in joint person and event attendee tables. Then returning their names and the number of times that they attended events. This aids in sending out aimless invites and being able to fill events with more people to create better outcomes.

10) The organizations that are most philanthropic

```

27
28 -- The organizations that are most philanthropic --
29 SELECT o.Name, p.OrganizationID, o.Description, COUNT(ea1.PersonID) AS num_attended
30 FROM Event_Attendance ea1
31 JOIN Person p
32 ON ea1.PersonID = p.PersonID
33 JOIN Organization o
34 ON o.OrganizationID = p.OrganizationID
35 GROUP BY ea1.PersonID, p.FirstName, p.LastName, p.OrganizationID, o.Name, o.Description
36 HAVING COUNT(ea1.PersonID) = (
37     SELECT MAX(attend_num)
38     FROM (
39         SELECT PersonID, COUNT(PersonID) AS attend_num
40         FROM Event_Attendance
41         GROUP BY PersonID
42     ) AS inner_counts
43 )
44 ORDER BY num_attended;
45
46 -- Organizations most involved when it comes to speaking --
47 SELECT o.Name, p.OrganizationID, o.Description, s.PersonID, COUNT(s.PersonID) AS num_attended
48 FROM Speaker s

```

Results Messages

	Name	OrganizationID	Description	num_attended
1	Community Health Outreach	626	Conducting health outreach programs in underserved areas.	14

This query joins the event attendance, person and organization table to find the number of people that attended events grouped by the company that each one was in. Then it uses nested subqueries to compare it to the maximum number of attendees to return the company that had the most attendance. This is crucial to bookkeeping within the Sharing Foundation because this allows the company to know which companies are more involved with the work they do, or with what companies they do more work with. They are able to see which type of companies are also more involved in their events and who have more attendees.

11) Organizations most involved when it comes to speaking

```

... lab3.sql - disconnected SQLQuery_1 - localh...on (sa) notes11:30.sql - disconnected
Run Cancel Disconnect Change Database: SharingFoundation Estimated Plan Enable Actual Plan Parse Enable SQLCMD To Notebook
edu.o...
45
46 -- Speakers from the organizations --
47 SELECT o.Name, p.OrganizationID, o.Description, s.PersonID, COUNT(s.PersonID) AS num_attended
48 FROM Speaker s
49 JOIN Person p
50 ON s.PersonID = p.PersonID
51 JOIN Organization o ON o.OrganizationID = p.OrganizationID
52 GROUP BY s.PersonID, p.FirstName, p.LastName, p.OrganizationID, o.Name, o.Description
53 HAVING COUNT(s.PersonID) = (
54     SELECT MAX(attend_num)
55     FROM (
56         SELECT PersonID, COUNT(PersonID) AS attend_num

```

Results Messages

	Name	OrganizationID	Description	PersonID	num_attended
1	Global Hunger Relief	612	Working towards alleviating global hunger.	9	6
2	Social Justice Advocacy	645	Advocating for social justice and equal rights.	26	6
3	Sports for Change	614	Harnessing the power of sports for positive social change.	43	6

By looking at the companies with the most speakers from them, and the description of the company, we are able to determine the type of companies that have more willingness to advocate and are more outspoken. This is beneficial to the company as it allows for event coordinators to

go to these companies first when looking for speakers and also we are able to see trends in the type of companies that have speakers. Many of the companies that have the most speakers deal with global issues of injustices. We were able to see this by looking at subqueries of the join tables from above and cross referencing the max speakers to select only the organizations with the max numbers.

12) Organizations least involved when it comes to speaking

```
63
64     SELECT o.Name, p.OrganizationID, o.Description, s.PersonID, COUNT(s.PersonID) AS num_attended
65     FROM Speaker s
66     JOIN Person p
67     ON s.PersonID = p.PersonID
68     JOIN Organization o
69     ON o.OrganizationID = p.OrganizationID
70     GROUP BY s.PersonID, p.FirstName, p.LastName, p.OrganizationID, o.Name, o.Description
71     HAVING COUNT(s.PersonID) = (
72         SELECT MIN(attend_num)
73         FROM (
74             SELECT PersonID, COUNT(PersonID) AS attend_num
75             FROM Speaker
    
```

The screenshot shows a SQL query in a code editor. The code is a subquery within a HAVING clause, designed to find organizations with the minimum number of speakers. The subquery counts the number of speakers per organization. The main query then groups by organization and filters based on this count. The results are displayed in a table:

	Name	OrganizationID	Description	PersonID	num_attended
1	Climate Action Alliance	621	Working towards mitigating climate change impacts.	5	4
2	Animal Rescue League	605	Rescuing and caring for abandoned animals.	22	4
3	Clean Water Initiative	606	Providing clean and safe drinking water to communiti...	37	4

This query is very similar to the query above just looking at the minimum number of speakers. This is important to the company because looking at the trends of the companies with the least amount of speakers you can see many of them involve the environment. Now the company can analyze whether this is because there is less work done with these companies or if they are just less willing to speak. They then can proceed by minimizing the requests from speakers from these companies or conducting more work with these companies.

13) Total Cost

	EventID	Description	Total_Cost
1	4	Seminar on Le...	1085.00
2	5	Art Exhibition	1239.00
3	6	Programming W...	1112.00
4	12	New Year's Ev...	1071.00
5	15	Photography E...	1252.00
6	16	Marketing Wor...	1047.00
7	19	Literary Fair	1063.00
8	20	Professional ...	1160.00
9	30	International...	1097.00
10	31	Space Explora...	1017.00
11	33	Robotics Work...	1158.00
12	40	Health and We...	1038.00
13	41	Music and Tec...	1171.00
14	42	Global Busine...	1012.00
15	44	DIY Workshop	1032.00

This query creates a CTE to save a new attribute— *Total Cost*, which is the sum of all costs for each event in the Costs table. Total Costs can be used to analyze the amount the Sharing Foundation is needing to spend for each of their events. In this query, the CTE table is used to find events that have cost over \$1,000. There were 15 events that cost the Sharing Foundation over \$1000 to run. To spend less than \$1,000 in the future, it would help to look at what about those 15 events could be cut. Overall, the Sharing Foundation’s finance and budget department should use the total cost attribute to predict how much funds they need to allocate for future events and the kinds of events they can host with their current funds.

14) Popular Venues

	VenueID	Name	Num_Events
1	1	Shoreside Community Center	2
2	2	Ridgepark Hub	2
3	3	Maplewood Heights Innovation Center	2
4	5	Evergreen Commons	2
5	7	Meadowbrook Summit	2
6	8	Harmony Gardens	2
7	9	Pineview Plaza	2
8	12	Celestial Spaces	2
9	18	Flowerbird Country Club	2
10	19	Enclave Events Hall	2
11	22	Allure Assembly Venue	2
12	24	Panorama Pavilion	2
13	26	Paramount Plaza Venue	2
14	28	Four Seasons Community Center	2
15	29	Stellar Spaces Hall	2

Here, a query was made to count the number of events that were held at each venue. The table shows the name of venues that were used to host more than one event and the number of events that it held. Fifteen venues held more than one event. The Sharing Foundation can use this data as a reference for potential venues they could build a relationship with and use for future events, having already built a reputation with the venue and knowing what to expect. Data would also be useful for analyzing what makes a venue worthy of repeating.

15) Best Venue Location

	City	Num_Venues
1	Atlanta	3
2	Chicago	3
3	Denver	2
4	Los Angeles	2
5	Nashville	2
6	New York City	2
7	San Francisco	2
8	Seattle	2
9	St. Louis	2

We wanted to find what city locations would be good for adding a venue spot to host an event.

This query selects cities that have more than one venue in their area. Atlanta and Chicago had the most venues in their city that the Sharing Foundation has already used. This would be useful information to the company to know that it is likely those cities have reputable venues and that are popular enough for potentially high attendance.

16) High-charging Venues

	Name	Venue_Cost
1	Stellar Spaces Hall	825.00
2	Lunar Commons	825.00
3	Maplewood Heights Innovation Center	815.00
4	Panorama Pavilion	780.00
5	Universal Unity Venue	775.00
6	Ridgepark Hub	755.00
7	Paramount Plaza Venue	735.00
8	Celestial Spaces	715.00
9	Allure Assembly Venue	710.00
10	Celestial Spaces	700.00

This query looks for the highest venue cost amounts and the corresponding venues used for the events with those amounts. It gets the top 10 highest and returns them in descending order. This can be used to be aware of what venues the company should be particularly wary of renting again in the future if they are tight on budget. The result shows that Stellar Spaces Hall, Lunar Commons, and Maplewood Heights Innovation Center had the highest venue costs, each above \$800 for renting the space. The Sharing Foundation should avoid using those venues again if they want to save money.

17) Average Venue Costs

	VenueID	Name	Avg_Cost
1	12	Celestial Spaces	707.50
2	3	Maplewood Heights Innovation Center	677.50
3	2	Ridgepark Hub	652.50
4	29	Stellar Spaces Hall	647.50
5	26	Paramount Plaza Venue	592.50
6	28	Four Seasons Community Center	592.50
7	18	Flowerbird Country Club	575.00
8	22	Allure Assembly Venue	570.00
9	24	Panorama Pavilion	557.50
10	8	Harmony Gardens	505.00

This query, using aggregation, a subquery and joins, gets the names of venues and their average cost for venues that had multiple events and had an average cost above \$500. The result shows 10 venues that charged an average above \$500 for the events held at their location. Celestial Spaces, Maplewood Heights Innovation Center, and Ridge Park Had the highest average cost with the top charging an average of \$707.50. This gives the company an idea about how much they need to allocate from the budget on average to pay for venues they've used more than once and are on the more pricier side.

18) High-charging Speakers

	PersonID	FirstName	LastName	EventID	Speaker_Cost
1	14	Gino	Goman	6	300.00
2	48	Bobbie	Leynagh	31	300.00
3	22	Shelagh	Redemile	30	280.00
4	9	Chickie	Merrilees	20	280.00
5	22	Shelagh	Redemile	15	280.00
6	31	Lazarus	Jiggins	2	260.00
7	14	Gino	Goman	36	260.00
8	9	Chickie	Merrilees	36	260.00
9	31	Lazarus	Jiggins	42	260.00
10	43	Laural	Odd	4	240.00

Using table joins, this table gets the first and last name of the top 10 highest-charging speakers, how much it cost to have them speak, and the event they spoke at. The result shows that Fino Foman and Bobbie Leynagh were the most costly keynote speakers at an event, charging the Sharing Foundation \$300 for one of the events they spoke at. Chickie Merrilees appears twice on the table as well. The company should take into consideration these speakers and their amounts if

they want to save money or budget for the future. It is also worth seeing how high-charging speakers affect returns.

19) --Organization with Multiple Sponsors--

	Organization Name	Email	CauseType	num_of_sponsors
1	Community Health Outreach	contact@communityhealth.org	Community Health	3
2	Disaster Relief Association	contact@disasterrelief.org	Disaster Relief	3
3	Tech Education Initiative	contact@techeducation.org	Tech Education	3
4	Technology for Rural Development	info@ruraltech.org	Rural Develop	2
5	Youth Empowerment Foundation	info@youthempowerment.org	Youth Empowerment	2
6	Affordable Housing Initiative	contact@affordablehousing.org	Affordable Housing	2
7	Clean Air Initiative	contact@cleanair.org	Clean Air	2
8	Climate Action Alliance	info@climateaction.org	Climate Action	2
9	Helping Hands Charity	info@helpinghands.org	Homelessness	2
10	Refugee Support Network	contact@refugeesupport.org	Refugee Support	2
11	Sports for Change	contact@sportsforchange.org	Sports Development	2
12	Sustainable Fashion Collective	info@sustainablefashion.org	Sustainable Fashi...	2
13	Sustainable Urban Planning	contact@urbanplanning.org	Urban Sustainabil...	2

Using Join and aggregate conditions to retrieve the table of all the Organizations which sponsor more than one for any events. As a result, we can see that there are 13 organizations who actively sponsor events and the top three are Community Health Outreach, Disaster Relief Association, and Tech Education Initiative. The retrieved data is crucial for strategic planning in upcoming events. Identifying organizations likely to sponsor allows for targeted outreach, optimizing the approach to secure sponsorships efficiently.

20) --TOP 10 Donation Organizations--

	Organization Name	Email	CauseType	total_donation
1	Accessible Technology Initiative	info@accessibletech.org	Accessibility	4120.00
2	Sustainable Urban Planning	contact@urbanplanning.org	Urban Sustainability	3470.00
3	Community Resilience Project	info@communityresilience.org	Community Resilience	3420.00
4	Affordable Housing Initiative	contact@affordablehousing.org	Affordable Housing	3380.00
5	Global Education Outreach	info@globaloutreach.org	Global Education	3230.00
6	Helping Hands Charity	info@helpinghands.org	Homelessness	3010.00
7	Sports for Change	contact@sportsforchange.org	Sports Development	2560.00
8	Human Rights Watchdog	contact@humanrightswatchdog.org	Human Rights	2450.00
9	LGBTQ+ Rights Advocacy	info@lgbtqrights.org	LGBTQ+ Rights	2400.00
10	Ocean Conservation Society	contact@oceancconservation.org	Ocean Conservation	2330.00

By using select top and join table, we are able to receive the table with the top 10 organizations that have the highest total donations across all events. The order is sorted by the descending order of total donations and the organization with highest total donation is Accessible Technology Initiative with the amount \$4120.00 . This table gives the overall comparison of donation amounts between the top organizations. These insights highlight the generosity and funding capacity of different organizations. Recognizing this, events can set realistic fundraising goals by benchmarking against top contributors. This data also guides efforts to broaden the donor base and attract new

contributors.

21) --Organizations' Donation Probabilities--

	Organization Name	Email	CauseType	Total_Organization_Donation	probability of donation
1	Accessible Technology Initiative	info@accessibletech.org	Accessibility	4120.00	1.97
2	Sustainable Urban Planning	contact@urbanplanning.org	Urban Sustainability	3470.00	1.66
3	Community Resilience Project	info@communityresilience.org	Community Resilience	3420.00	1.63
4	Affordable Housing Initiative	contact@affordablehousing.org	Affordable Housing	3380.00	1.61
5	Global Education Outreach	info@globaloutreach.org	Global Education	3230.00	1.54
6	Helping Hands Charity	info@helpinghands.org	Homelessness	3010.00	1.44
7	Sports for Change	contact@sportsforchange.org	Sports Development	2560.00	1.22
8	Human Rights Watchdog	contact@humanrightswatchdog.org	Human Rights	2450.00	1.17
9	LGBTQ+ Rights Advocacy	info@lgbtqrights.org	LGBTQ+ Rights	2400.00	1.14
10	Ocean Conservation Society	contact@oceancconservation.org	Ocean Conservation	2330.00	1.11
11	Health for Everyone	info@healthforeveryone.org	Healthcare	2280.00	1.09
12	Sustainable Fashion Collective	info@sustainablefashion.org	Sustainable Fashion	2270.00	1.08
13	Empowerment Through Education	info@empowerededucation.org	Education Empowermen	2220.00	1.06
14	Cultural Heritage Preservation	contact@culturalheritage.org	Cultural Preservation	2200.00	1.05
15	Clean Energy Advocacy	info@cleanenergyadvocacy.org	Clean Energy Advocacy	2140.00	1.02
16	Climate Action Alliance	info@climateaction.org	Climate Action	2120.00	1.01
17	Renewable Energy Coalition	contact@renewableenergy.org	Renewable Energy	2100.00	1.00
18	Animal Rescue League	info@animalrescue.org	Animal Welfare	2060.00	0.98
19	Youth Empowerment Foundation	info@youthempowerment.org	Youth Empowerment	1990.00	0.95
20	Literacy Foundation	info@literacyfoundation.org	Literacy	1980.00	0.94
21	Education for All	contact@educationforall.org	Education	1910.00	0.91
22	Arts for All	info@artsforall.org	Arts and Culture	1890.00	0.90
23	Wildlife Conservation Society	contact@wildlifeconservation.o...	Wildlife Conservation	1900.00	0.90
24	Women's Empowerment Network	info@womeneempowerment.org	Gender Equality	1860.00	0.89
25	Clean Air Initiative	contact@cleanair.org	Clean Air	1790.00	0.85
26	Sustainable Farming Alliance	contact@sustainablefarming.org	Sustainable Farming	1780.00	0.85
27	Disaster Relief Association	contact@disasterrelief.org	Disaster Relief	1770.00	0.84
28	Tech4Good	info@tech4good.org	Technology for Good	1600.00	0.76
29	Technology Access for All	info@techaccessforall.org	Technology Access	1330.00	0.63
30	Art Therapy Foundation	info@arttherapy.org	Art Therapy	1330.00	0.63
31	Elderly Care Network	contact@elderlycare.org	Elderly Care	1290.00	0.61
32	Green Earth Foundation	contact@greenearth.org	Environment	1280.00	0.61
33	Refugee Support Network	contact@refugeesupport.org	Refugee Support	1240.00	0.59
34	Sustainable Tourism Initiative	contact@sustainabletourism.org	Sustainable Tourism	1240.00	0.59
35	Cultural Diversity Foundation	info@culturaldiversity.org	Cultural Diversity	1190.00	0.56
36	Community Health Outreach	contact@communityhealth.org	Community Health	1160.00	0.55
37	Tech Education Initiative	contact@techeducation.org	Tech Education	640.00	0.30
38	Mental Health Awareness	info@mentalhealthawareness.org	Mental Health	580.00	0.27
39	Social Justice Advocacy	info@socialjusticeadvocacy.org	Social Justice	500.00	0.23
40	Community Garden Project	info@communitygarden.org	Community Gardens	450.00	0.21
41	Global Hunger Relief	contact@hungerrelief.org	Hunger Relief	430.00	0.20
42	Community Music Project	contact@communitymusic.org	Music Education	290.00	0.13
43	Technology for Rural Development	info@ruraltech.org	Rural Develop	240.00	0.11
44	Children's Health Foundation	contact@childrenshealth.org	Children's Health	70.00	0.03

To delve deeper into the donation statistics among organizations, I employed a subquery to calculate the probability of donations for each organization. The results are ordered from the highest to the lowest donation percentage. Notably, the table reveals that the donation percentages for each organization are relatively small, all falling below 2%. This also demonstrates a fairly consistent distribution of donation amounts among organizations, indicating that there is not a significant variance in the levels of contributions. Thus, this retrieval is helpful for further statistical analysis about the distribution of donations between organizations.

22) --Event Cost Percentage--

	eventID	Description	prob_food_cost	prob_venue_cost	prob Speaker cost	total_cost
1	1	Conference on Technology	46.42	21.10	32.46	616.00
2	2	Concert for Charity	30.09	30.39	39.51	658.00
3	3	Fundraising Festival	22.86	62.26	14.86	538.00
4	4	Seminar on Leadership	28.11	49.76	22.11	1085.00
5	5	Art Exhibition	39.46	46.00	14.52	1239.00
6	6	Programming Workshop	15.91	57.10	26.97	1112.00
7	7	Sports Tournament	39.52	52.03	8.43	711.00
8	8	Trade Show and Expo	22.69	50.98	26.31	608.00
9	9	Book Fair	23.16	76.83	0.00	924.00
10	10	Networking Event	10.91	77.95	11.13	898.00
11	11	Industry Conference	48.45	51.54	0.00	873.00
12	12	New Year's Eve Concert	16.43	70.49	13.07	1071.00
13	13	Cultural Festival	14.91	85.08	0.00	617.00
14	14	Financial Seminar	46.07	47.76	6.16	649.00
15	15	Photography Exhibition	11.74	65.89	22.36	1252.00
16	16	Marketing Workshop	25.50	57.30	17.19	1047.00
17	17	World Cup Final Viewing	21.46	60.84	17.69	904.00
18	18	Technology Expo	37.18	62.81	0.00	987.00
19	19	Literary Fair	27.09	72.90	0.00	1063.00
20	20	Professional Networking	18.10	57.75	24.13	1160.00
21	21	Health Symposium	15.08	72.24	12.67	789.00
22	22	Music Festival	35.82	38.50	25.67	857.00
23	23	Art and Science Exhibit...	9.04	90.95	0.00	907.00
24	24	Entrepreneurship Worksh...	45.28	54.71	0.00	530.00
25	25	Environmental Conference	19.95	80.04	0.00	862.00
26	26	Food and Beverage Expo	12.14	66.56	21.29	939.00
27	27	Virtual Reality Seminar	31.21	51.85	16.93	945.00
28	28	Travel and Adventure Fa...	15.73	84.26	0.00	534.00
29	29	Education Summit	27.47	47.41	25.10	717.00
30	30	International Trade Show	28.44	46.03	25.52	1097.00
--	--	--	--	--	--	--
31	31	Space Exploration Sympos...	12.97	57.52	29.49	1017.00
32	32	Human Rights Conference	30.77	36.96	32.25	744.00
33	33	Robotics Workshop	27.46	67.35	5.18	1158.00
34	34	History Exhibition	8.52	91.47	0.00	891.00
35	35	Leadership Development ...	30.11	69.88	0.00	880.00
36	36	Virtual Art Show	24.96	40.50	34.52	753.00
37	37	Technology and Innovati...	22.44	32.65	44.89	490.00
38	38	Science Fiction Convent...	61.83	38.16	0.00	524.00
39	39	Startup Bootcamp	28.81	48.58	22.59	885.00
40	40	Health and Wellness Fair	13.77	68.88	17.34	1038.00
41	41	Music and Technology Co...	25.27	62.76	11.95	1171.00
42	42	Global Business Expo	19.96	54.34	25.69	1012.00
43	43	Climate Change Symposium	9.84	79.92	10.23	782.00
44	44	DIY Workshop	32.17	67.82	0.00	1032.00
--	--	--	--	--	--	--

Creating a CTE for the total cost and retrieving statistics for each cost category across all events provides a detailed breakdown of expenses. We can see the proportion of food, venue, and speaker costs by looking at the table. For example, the total \$616 for event 1 "Conference On Technology" includes 46.42% food cost, 21.10 venue cost, and 32.46% speaker cost. Also, in most cases, we can see that venue cost has a larger proportion than other costs. By identifying the percentage distribution of costs, event planners can make informed decisions when planning future events, ensuring that budget allocations align with the event's priorities and expectations. This data is also useful in determining whether expenses are justified by the event's overall success.

23) --High Average Attendees Events--

	EventID	VenueID	Description	avg_attendance
1	8	5	Trade Show and Expo	10
2	16	6	Marketing Workshop	9
3	21	10	Health Symposium	8
4	6	9	Programming Workshop	8
5	13	18	Cultural Festival	8
6	9	22	Book Fair	8
7	10	12	Networking Event	8
8	11	26	Industry Conference	8
9	2	7	Concert for Charity	8
10	3	24	Fundraising Festival	8
11	4	3	Seminar on Leadersh...	8
12	27	20	Virtual Reality Sem...	8
13	33	24	Robotics Workshop	8
14	36	9	Virtual Art Show	8
15	37	19	Technology and Inno...	8
16	38	5	Science Fiction Con...	8
17	39	22	Startup Bootcamp	8
18	41	26	Music and Technolog...	8
19	44	8	DIY Workshop	8
20	45	29	Artificial Intellig...	7
21	1	15	Conference on Techn...	7
22	5	28	Art Exhibition	7
23	12	2	New Year's Eve Conc...	7
24	14	8	Financial Seminar	7
25	15	29	Photography Exhibit...	7
26	7	19	Sports Tournament	7
27	22	17	Music Festival	7
28	17	25	World Cup Final Vie...	7
29	19	30	Literary Fair	7

Utilizing a CTE to count the number of attendees at each event, along with a subquery to retrieve events with an average number of attendees greater than the overall average, provides valuable insights into attendee engagement. The table highlights that there are 29 events surpassing the average attendance across all events. Notably, the higher average attendance numbers around 10, 9, 8, 7 suggest that the attraction for these events is not exceptionally high. The data signals the need for strategic advertising for events with lower attendance averages. Event planners can allocate resources to targeted advertising campaigns to enhance event visibility and attract more participants.

24) --Seeking Donation Amount from desired Organization--

```

93
94     -- Call function
95     SELECT
96         o.OrganizationID, o.Name,
97         dbo.fnOrganizationDonation_VKN(o.OrganizationID) AS sum_donation
98     FROM Donations d
99     JOIN Organization o ON d.OrganizationID = o.OrganizationID
100    WHERE o.OrganizationID = 613 OR o.OrganizationID = 623;

```

Results **Messages**

	OrganizationID	Name	sum_donation
1	623	Cultural Diversity Foundation	1190
2	613	Mental Health Awareness	580

I created a User-Defined Function (UDF) to make it easier to access donation amounts for specific organizations. This UDF takes OrganizationIDs as input and returns a table containing organization names and total donation amounts. For example, in the call function, I try to retrieve the donation amount of OrganizationID 613 and 623, and the totals returned are 1190 and 580, respectively. Having this function, users can easily obtain donation information for their desired organizations by simply providing the OrganizationIDs as input.