Spectrum

Group 28

Members:

Devansh Gupta	2019160
Udit Bhati	2019281
Mihir Bhatia	2019060
Harshit Singh	2019424
Ananya Lohani	2019018

Contributions

The contributions were not really planned according to each member as each and every member had a very important role in contributing to the important points, pitfalls, and structure of the ideas, so it is very hard for us to pinpoint the actual members who were involved in the contributions for the individual parts of this project, hence this list will involve all the people who were involved in the pseudo-lead position(s) whose ideas were more followed by the other team members.

Group named by: Harshit Singh

Idea Brainstorming: Ananya Lohani, Udit Bhati, Harshit Singh, Mihir Bhatia, Devansh Gupta

- Functionality Article: Devansh Gupta, Ananya Lohani

Idea Map:

- First Entity Generations: Ananya Lohani, Devansh Gupta
- Pitfalls and major structural improvements: Harshit Singh, Udit Bhati
- Mappings Generation: Harshit Singh, Ananya Lohani, Devansh Gupta
- Inner structures of the entities: Udit Bhati, Mihir Bhatia

Questions Brainstorming:

- “Authors”: Devansh Gupta
- “Tutors”: Harshit Singh
- “Workshop Organizers” and “Organizers”: Mihir Bhatia
- “External Attendees”: Udit Bhati
- “Volunteers”: Ananya Lohani

ER Diagram:

- Syntax and formal correctness checking: Ananya Lohani, Harshit Singh
- Entity Listing: Devansh Gupta, Udit Bhati

- Relation Determinations: Mihir Bhatia, Ananya Lohani, Devansh Gupta
- Relation Cardinality and additional fields: Udit Bhati, Harshit Singh

Schema Generation:

Note: At this point one teammate, Mihir Bhatia got really sick and hence he committed that he will cover up for this missing during the integration of the database with the front end

- We had 11 entities and hence each member took two-three entities in order to generate the required tables
- We had about 17 junction tables for many to many mappings which was optimally distributed to the team-members since we had to just write the required queries

Query Coding, Debugging and Implementation of the database**: Ananya Lohani, Udit Bhati**

Data procurement: **Devansh Gupta and Ananya Lohani**

Data Organization and Insertion:

- All members did the respective entities and the mappings associated with it whilst coordinating with each other.

Phase 0: Group Name generation

- **Spectrum**

Phase 1: Idea Generation

Name	**Stakeholders**	**Logistics (Materials)**
Library Management	Children, Librarian, Book suppliers,	Books
Casino	Manager, Customer, Admin, Security, Staff, Money Changers	Spin Wheel$
Hospital	Doctors, Patients, Nurses,	Equipment, Computers(for admin)

	Board of Directors, Admin/Staff, Departments	
Lab inventory nagement(For a university)	Professor(s) in charge, udents part of the lab, neral students, Research sistants(Admins), Suppliers	Equipment, High-End Machines, Servers, Bookings, Names
Banking	Manager, Admin, Employees, Customers, Merchant	Accounts
Conference Management stem(Assuming core A* or A)	Organizers, Workshop Organizers, Publishers(Main track and each workshop track), Attenders, Tutors, Volunteers	Research Papers, Workshops(including talks), Tutorials, Contests, Venues
Disaster Relief Organization	Admin, Food Suppliers, Police Deptt, Fire Deptt, ● Engineering Deptt, Forest Deptt, Health Deptt, etc.	Transport(helicopters,etc), Food ration, Safehouses, Location, Disaster Relief Schemes

Final Idea: Conference Management System(Core A* or A)

Phase 2: Details about our database and idea

Functionality for the database

Scientific conferences are one of the most important and influential sets of events which need expertise with respect to the management of the conference and the content related to it. Being the epitome to the enhancement and development of new scientific knowledge, details of its management and its output serve as a vital piece of information in order to ensure the smooth functioning of such an important event. This database aims to be used at all instances with respect to the conference, i.e. before the main conference dates, during the main conference, and after the conference with its specific uses.

Our database is useful before the conference as it keeps track of all the people involved in the conference which are the organizers, the volunteers, workshop organizers, the tutors, authors, and the attendees who registered for attending the conference. It serves as an important storage of information on the different tasks and sub teams with leaders involved in those tasks. It also has various mappings, in order to make sure that there is no redundancy in information and they also ensure that one person can play multiple roles in a conference, for instance a tutor can be an author who published at the conference, etc.

During the conference, our database requires that there is an attendance track kept of the attendees and the authors who are attending the conference so that a live track can be kept on the current capacity of the conference. During conference, it can also provide the tutorial and workshop details to the attendees and also even query on which authors of a certain paper are present for the poster presentations or even the major talks. It also helps the tutors and/or authors get an idea of the audience that they are going to present to.

After the conference, the details about the paper published and the authors is vital to cite them in later papers and interesting statistics like the youngest author(s) in the conference, the most published author or institution can also be queried. The details of the tutorials and its attendance can be used as an interesting statistic in order to judge the involvement of people in the particular topic in which the tutorial was being held.

In conclusion, our database serves as a central storage in the smooth functioning of the conference and the amount of information it is capable of handling is a huge help to the organizers. It is also useful to provide some interesting information relating to research

scenarios and most importantly, it serves as a repository for the different research papers which were published.

Questions for stakeholders

Organizers: Main organizers of this conference to whom all the subordinates report to. Each organizer/set of organizers are assigned tasks to do in the conference.

1. Who are the volunteers and/or workshop organizers reporting to me for this conference?
2. Who are the tutors in this conference?
3. Which tutorials are being organized?
4. Who are the authors publishing papers at this conference?
5. How many people have registered to attend the conference?

Workshop Organizers: Organizers of a workshop in the conference, are assigned to the main organizer to maintain the flow of information

1. Who are the volunteers working for my workshop?
2. Who is the organizer that I report to?
3. Which workshop papers are being published in my workshop?
4. Who are the authors publishing papers in my workshop?
5. Which all papers won an award in my workshop?

Authors: People who have published in the main track and/or the various workshops present in the conference.

1. Did any of my papers win any award? If yes, which award(s)?
2. How many papers were published from my affiliation?
3. Who are the youngest authors at this conference?
4. Which author published the most number of papers?
5. Did any of my co-authors' papers win the award at the conference in the main track and workshop respectively?

Tutors: People who are invited to the conference to give major talks and tutorials regarding the progeressive concepts of the research. Report to organizers

1. How many people have registered in the tutorial/talk I am conducting?
2. How many people were present in my tutorial?
3. What are the details of the tutorial that I am tutoring? (Scheduling details.)
4. How many total attendees are from my affiliation who attended the tutorial?
5. How many of my attendees published in this conference?

Volunteers: People who are the subordinates to the organizer, who in team are assigned to an event/workshop, report to organizers

1. Who are the people that I report to?
2. Whom should I contact in order to coordinate with, for timely presentations/tutorials/events that I am assigned to volunteer in?
3. How many external attendees are present at the conference?
4. How many authors are attending the conference?
5. Who are my fellow volunteers(if any) for the event that I am assigned to?

External Attendees: People who registered to attend the conference presentations, talks and tutorials

1. What is the schedule of tutorials?
2. What are the contact details of volunteers and organizers pertaining to talks/tutorials?
3. Which papers won which awards?
4. What were the different workshops and how many papers were published in it?
5. What are the top 5 institutions who published in this conference?

Idea Map: Please find it attached below this doc

ER Diagram: Please find it attached below this doc

Phase 3: Creating and Organizing the DB

Coding the Schema

```
create database Spectrum;
USE Spectrum;

CREATE TABLE Authors(
AuthorID INT auto_increment,
AuthorName TEXT NOT NULL,
Age INT NOT NULL,
Nationality TEXT NOT NULL,
Email TEXT NOT NULL,
Present CHAR NOT NULL,
Affiliation TEXT NOT NULL,
PRIMARY KEY(AuthorID),
CHECK(Age > 0));

CREATE TABLE Organizers(
```

```
OrganizerID INT auto_increment,
OrgName TEXT NOT NULL,
Age INT NOT NULL,
Affiliation TEXT NOT NULL,
OrgRole TEXT NOT NULL,
PhoneNumber TEXT NOT NULL,
Email TEXT NOT NULL,
Nationality TEXT NOT NULL,CHECK(Age > 0),
PRIMARY KEY(OrganizerID));

CREATE TABLE Workshops(
WorkshopID INT auto_increment,
WName TEXT NOT NULL,
PRIMARY KEY(WorkshopID));

CREATE TABLE Tutorials(
TutorialID INT auto_increment,
Topic TEXT NOT NULL,
TutDate DATE NOT NULL,
Timing TIME NOT NULL,
PRIMARY KEY (TutorialID));

CREATE TABLE ExternalAttendees(
AttendeeID INT auto_increment,
AttendeeName TEXT NOT NULL,
Age INT NOT NULL,
CHECK(Age > 0),
Affiliation TEXT NOT NULL,
Email TEXT NOT NULL,
Present CHAR NOT NULL,
Country TEXT NOT NULL,
PRIMARY KEY(AttendeeID));

CREATE TABLE AuthorAttendsTutorial(
TutorialID INT NOT NULL,
AuthorID INT NOT NULL,
Present CHAR NOT NULL,
FOREIGN KEY(TutorialID) REFERENCES Tutorials(TutorialID) on delete cascade,
FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID) on delete cascade
);

CREATE TABLE MainTrackPapers (PaperID INT auto_increment,
Title TEXT NOT NULL,
PRIMARY KEY(PaperID));

CREATE TABLE WorkshopPapers (WPaperID INT auto_increment,
Title TEXT NOT NULL,
WorkshopID INT NOT NULL,
```

```
FOREIGN KEY (WorkshopID) REFERENCES Workshops(WorkshopID) on delete cascade,
PRIMARY KEY(WPaperID));

CREATE TABLE WorkshopOrganizers(
WOID INT auto_increment,
WOName TEXT NOT NULL,
Affiliation TEXT NOT NULL,
Email TEXT NOT NULL,
AuthorID INT,
OrganizerID INT,
PRIMARY KEY(WOID),
FOREIGN KEY (OrganizerID) REFERENCES Organizers(OrganizerID) on delete cascade,
FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID) on delete cascade);

CREATE TABLE Volunteers(VolunteerID INT auto_increment,
VolunteerName TEXT NOT NULL,
Affiliation TEXT NOT NULL,
Age INT NOT NULL,
Country TEXT NOT NULL,
Email TEXT NOT NULL,
PhoneNumber TEXT,
WOID INT,
FOREIGN KEY (WOID) REFERENCES WorkshopOrganizers(WOID) on delete cascade,
PRIMARY KEY(VolunteerID),
CHECK(Age > 0));

CREATE TABLE MainTrackAuthors(
AuthorID INT not null,
PaperID INT not null,
FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID) on delete cascade,
FOREIGN KEY (PaperID) REFERENCES MainTrackPapers(PaperID) on delete cascade
);

CREATE TABLE WkshpPaperAuthors(
AuthorID INT not null,
WPaperID INT not null,
FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID) on delete cascade,
FOREIGN KEY (WPaperID) REFERENCES WorkshopPapers(WPaperID) on delete cascade);

CREATE TABLE Awards(
AwardID INT auto_increment,
AwardName TEXT NOT NULL,
PRIMARY KEY(AwardID),
PaperID INT,
WPaperID INT,
FOREIGN KEY (PaperID) REFERENCES MainTrackPapers(PaperID) on delete cascade,
FOREIGN KEY (WPaperID) REFERENCES WorkshopPapers(WPaperID) on delete cascade);
```

```
CREATE TABLE Tutors(
TutorID INT auto_increment,
TutorName TEXT NOT NULL,
Age INT NOT NULL,
CHECK(Age > 0),
Affiliation TEXT NOT NULL,
Email TEXT NOT NULL,
Nationality TEXT NOT NULL,
PRIMARY KEY (TutorID),
AuthorID INT,
TutorialID INT,
FOREIGN KEY (TutorialID) REFERENCES Tutorials(TutorialID) on delete cascade,
FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID) on delete cascade);

CREATE TABLE AttendeeAttendsTutorial(
TutorialID INT NOT NULL,
AttendeeID INT NOT NULL,
Present CHAR NOT NULL,
FOREIGN KEY (TutorialID) REFERENCES Tutorials(TutorialID) on delete cascade,
FOREIGN KEY (AttendeeID) REFERENCES ExternalAttendees(AttendeeID) on delete cascade
);

CREATE TABLE VolunteerReportsToOrganizers(
VolunteerID INT NOT NULL,
OrganizerID INT NOT NULL,
FOREIGN KEY (VolunteerID) REFERENCES Volunteers(VolunteerID) on delete cascade,
FOREIGN KEY (OrganizerID) REFERENCES Organizers(OrganizerID) on delete cascade
);

CREATE TABLE WorkOrgOrganizesWorkshop(
WOID INT NOT NULL,
WorkshopID INT NOT NULL,
FOREIGN KEY (WOID) REFERENCES WorkshopOrganizers(WOID) on delete cascade,
FOREIGN KEY (WorkshopID) REFERENCES Workshops(WorkshopID) on delete cascade
);
```

Data to be used

We are going to be using a subset of the International Conference of Machine Learning 2020 Database for populating the authors, accepted papers, tutorials, tutors, workshops, and the organizers. We will be simulating the data for the volunteers and awards will be partially simulated.
https://icml.cc/virtual/2020/papers.html?filter=keywords

Data Loader:

We loaded our data into CSV files and imported them into the tables using the following commands:

```
USE SPECTRUM;

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/authors.csv'
INTO TABLE Authors FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (AuthorID,AuthorName,Age,Affiliation,Nationality,Email,Present);

LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/maintrack_papers.csv'
INTO TABLE MainTrackPapers FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (PaperID,Title);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/workshops.csv'
INTO TABLE Workshops FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (WorkshopID,WName);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/wkshp_papers.csv'
INTO TABLE WorkshopPapers FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (WPaperID,Title,WorkshopID);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/organizers.csv'
INTO TABLE Organizers FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (OrganizerID, OrgName, Age, Affiliation, OrgRole, PhoneNumber, Email,
Nationality);


LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/workshop_organizers.csv'
INTO TABLE WorkshopOrganizers FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (WOID, WOName, Affiliation, Email, @vAuthorID, @vOrganizerID)
SET
AuthorID = NULLIF(@vAuthorID, 0),
OrganizerID = NULLIF(@vOrganizerID, 0);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/volunteers.csv'
INTO TABLE Volunteers FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS
(VolunteerID,VolunteerName,Affiliation,Age,Country,Email,PhoneNumber,@vWOID)
SET
WOID = NULLIF(@vWOID, 0);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/awards.csv'
INTO TABLE Awards FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (AwardID, AwardName, @vPaperID,@vWPaperID)
SET
```

```
PaperID = NULLIF(@vPaperID, 0),
WPaperID = NULLIF(@vWPaperID, 0);

LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/external_attendees.csv'
INTO TABLE ExternalAttendees FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (AttendeeID,AttendeeName,Age,Affiliation,Email,Present,Country);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/tutorials.csv'
INTO TABLE Tutorials FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (TutorialID,Topic,TutDate, Timing);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/tutors.csv'
INTO TABLE Tutors FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS
(TutorID,TutorName,Age,Affiliation,Email,Nationality,@vAuthorID,@vTutorialID)
SET
AuthorID = NULLIF(@vAuthorID, 0),
TutorialID = NULLIF(@vTutorialID, 0);

LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/maintrack_authors.csv'
INTO TABLE MainTrackAuthors FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (AuthorID,  PaperID);

LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/wkshp_paper_authors.csv'
INTO TABLE WkshpPaperAuthors FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (AuthorID,  WPaperID);

LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/volunteers_to_organizers.csv'
INTO TABLE MainTrackAuthors FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (VolunteerID, OrganizerID);

LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/authors_attends_tut.csv'
INTO TABLE AuthorAttendsTutorial FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (TutorialID, AuthorID, Present);

LOAD DATA LOCAL INFILE '/Users/lohanis/Desktop/DBMS-project/data/wo_to_wkshp.csv'
INTO TABLE AuthorAttendsTutorial FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n'
IGNORE 1 ROWS (TutorialID, AuthorID, Present);

LOAD DATA LOCAL INFILE
'/Users/lohanis/Desktop/DBMS-project/data/attendees_to_tuts.csv'
INTO TABLE AttendeeAttendsTutorial FIELDS TERMINATED BY ',' LINES TERMINATED BY
'\n'
```

```
IGNORE 1 ROWS (TutorialID, AttendeeID,Present);

select * from AttendeeAttendsTutorial;
select * from AuthorAttendsTutorial;
select * from MainTrackPapers;
select * from MainTrackAuthors;
select * from Authors;
select * from Awards;
select * from WkshpPaperAuthors;
select * from WorkshopPapers;
select * from Tutors;
select * from Tutorials;
select * from Workshops;
select * from WorkshopOrganizers;
select * from Organizers;
select * from Volunteers;
select * from VolunteerReportsToOrganizers;
select * from WorkOrgOrganizesWorkshop;
select * from ExternalAttendees;
select * from AttendeeAttendsTutorial;
```

Descriptions of Tables:

```
mysql> show tables
    -> ;
+-------------------------------+
| Tables_in_Spectrum            |
+-------------------------------+
| AttendeeAttendsTutorial       |
| AuthorAttendsTutorial         |
| Authors                       |
| Awards                        |
| ExternalAttendees             |
| MainTrackAuthors              |
| MainTrackPapers               |
| Organizers                    |
| Tutorials                     |
| Tutors                        |
| VolunteerReportsToOrganizers  |
| Volunteers                    |
| WkshpPaperAuthors             |
| WorkOrgOrganizesWorkshop      |
| WorkshopOrganizers            |
| WorkshopPapers                |
| Workshops                     |
+-------------------------------+
17 rows in set (0.00 sec)
```

```
mysql> desc AttendeeAttendsTutorial;
+------------+---------+------+-----+---------+-------+
| Field      | Type    | Null | Key | Default | Extra |
+------------+---------+------+-----+---------+-------+
| TutorialID | int(11) | NO   | MUL | NULL    |       |
| AttendeeID | int(11) | NO   | MUL | NULL    |       |
| Present    | char(1) | NO   |     | NULL    |       |
+------------+---------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

```
mysql> desc Tutorials;
+------------+---------+------+-----+---------+----------------+
| Field      | Type    | Null | Key | Default | Extra          |
+------------+---------+------+-----+---------+----------------+
| TutorialID | int(11) | NO   | PRI | NULL    | auto_increment |
| Topic      | text    | NO   |     | NULL    |                |
| TutDate    | date    | NO   |     | NULL    |                |
| Timing     | time    | NO   |     | NULL    |                |
+------------+---------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> desc Tutors;
+-------------+---------+------+-----+---------+----------------+
| Field       | Type    | Null | Key | Default | Extra          |
+-------------+---------+------+-----+---------+----------------+
| TutorID     | int(11) | NO   | PRI | NULL    | auto_increment |
| TutorName   | text    | NO   |     | NULL    |                |
| Age         | int(11) | NO   |     | NULL    |                |
| Affiliation | text    | NO   |     | NULL    |                |
| Email       | text    | NO   |     | NULL    |                |
| Nationality | text    | NO   |     | NULL    |                |
| AuthorID    | int(11) | YES  | MUL | NULL    |                |
| TutorialID  | int(11) | YES  | MUL | NULL    |                |
+-------------+---------+------+-----+---------+----------------+
8 rows in set (0.00 sec)

mysql> desc VolunteerReportsToOrganizers;
+-------------+---------+------+-----+---------+-------+
| Field       | Type    | Null | Key | Default | Extra |
+-------------+---------+------+-----+---------+-------+
| VolunteerID | int(11) | NO   | MUL | NULL    |       |
| OrganizerID | int(11) | NO   | MUL | NULL    |       |
+-------------+---------+------+-----+---------+-------+
2 rows in set (0.01 sec)
```

```
mysql> desc Authors;
+-------------+---------+------+-----+---------+----------------+
| Field       | Type    | Null | Key | Default | Extra          |
+-------------+---------+------+-----+---------+----------------+
| AuthorID    | int(11) | NO   | PRI | NULL    | auto_increment |
| AuthorName  | text    | NO   |     | NULL    |                |
| Age         | int(11) | NO   |     | NULL    |                |
| Nationality | text    | NO   |     | NULL    |                |
| Email       | text    | NO   |     | NULL    |                |
| Present     | char(1) | NO   |     | NULL    |                |
| Affiliation | text    | NO   |     | NULL    |                |
+-------------+---------+------+-----+---------+----------------+
7 rows in set (0.00 sec)

mysql> desc Awards;
+-----------+---------+------+-----+---------+----------------+
| Field     | Type    | Null | Key | Default | Extra          |
+-----------+---------+------+-----+---------+----------------+
| AwardID   | int(11) | NO   | PRI | NULL    | auto_increment |
| AwardName | text    | NO   |     | NULL    |                |
| PaperID   | int(11) | YES  | MUL | NULL    |                |
| WPaperID  | int(11) | YES  | MUL | NULL    |                |
+-----------+---------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> desc ExternalAttendees;
+--------------+---------+------+-----+---------+----------------+
| Field        | Type    | Null | Key | Default | Extra          |
+--------------+---------+------+-----+---------+----------------+
| AttendeeID   | int(11) | NO   | PRI | NULL    | auto_increment |
| AttendeeName | text    | NO   |     | NULL    |                |
| Age          | int(11) | NO   |     | NULL    |                |
| Affiliation  | text    | NO   |     | NULL    |                |
| Email        | text    | NO   |     | NULL    |                |
| Present      | char(1) | NO   |     | NULL    |                |
| Country      | text    | NO   |     | NULL    |                |
+--------------+---------+------+-----+---------+----------------+
7 rows in set (0.00 sec)
```

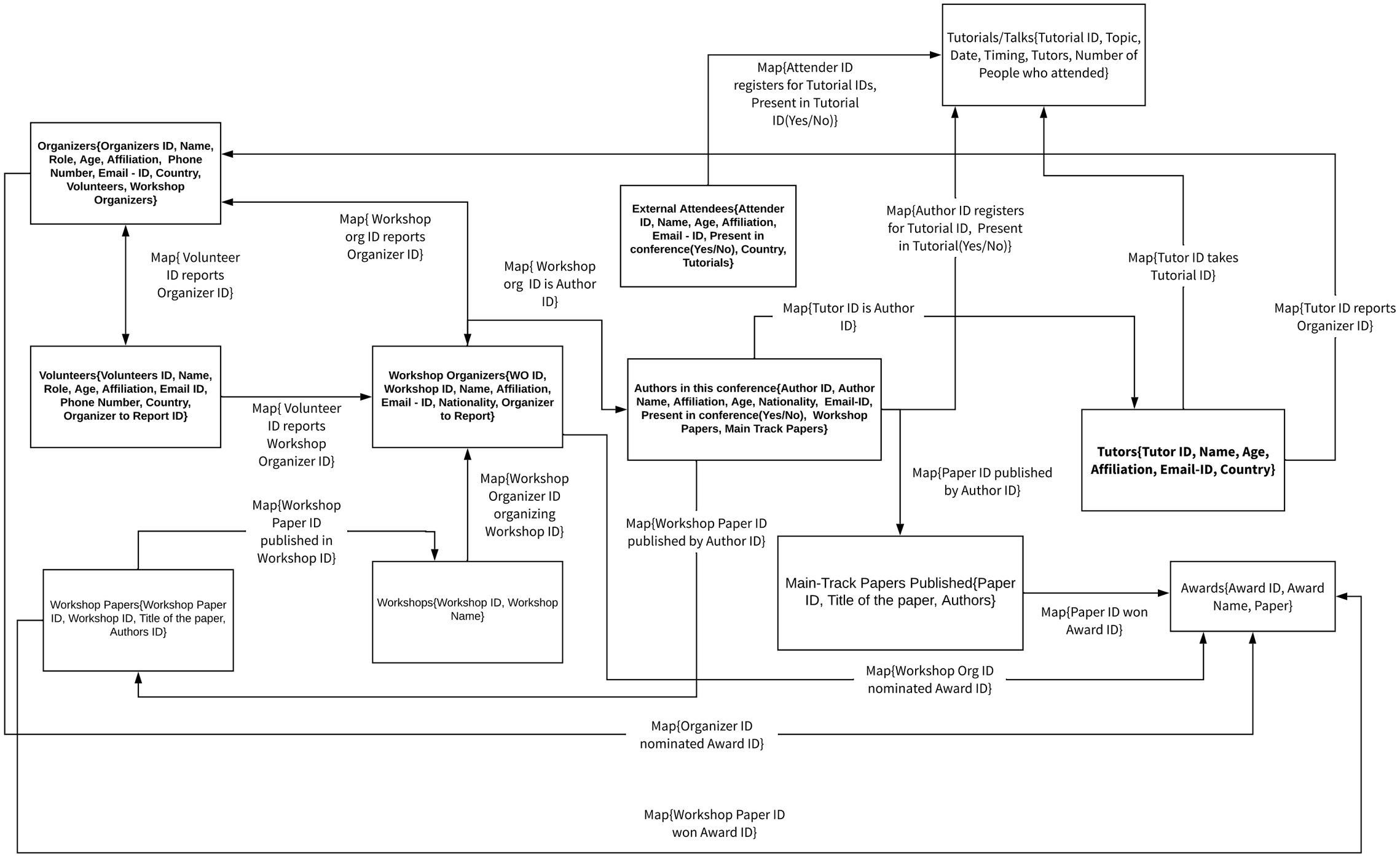
```
mysql> desc MainTrackAuthors;
+----------+---------+------+-----+---------+-------+
| Field    | Type    | Null | Key | Default | Extra |
+----------+---------+------+-----+---------+-------+
| AuthorID | int(11) | NO   | MUL | NULL    |       |
| PaperID  | int(11) | NO   | MUL | NULL    |       |
+----------+---------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc MainTrackPapers;
+---------+---------+------+-----+---------+----------------+
| Field   | Type    | Null | Key | Default | Extra          |
+---------+---------+------+-----+---------+----------------+
| PaperID | int(11) | NO   | PRI | NULL    | auto_increment |
| Title   | text    | NO   |     | NULL    |                |
+---------+---------+------+-----+---------+----------------+
2 rows in set (0.00 sec)

mysql> desc Organizers;
+-------------+---------+------+-----+---------+----------------+
| Field       | Type    | Null | Key | Default | Extra          |
+-------------+---------+------+-----+---------+----------------+
| OrganizerID | int(11) | NO   | PRI | NULL    | auto_increment |
| OrgName     | text    | NO   |     | NULL    |                |
| Age         | int(11) | NO   |     | NULL    |                |
| Affiliation | text    | NO   |     | NULL    |                |
| OrgRole     | text    | NO   |     | NULL    |                |
| PhoneNumber | text    | NO   |     | NULL    |                |
| Email       | text    | NO   |     | NULL    |                |
| Nationality | text    | NO   |     | NULL    |                |
+-------------+---------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

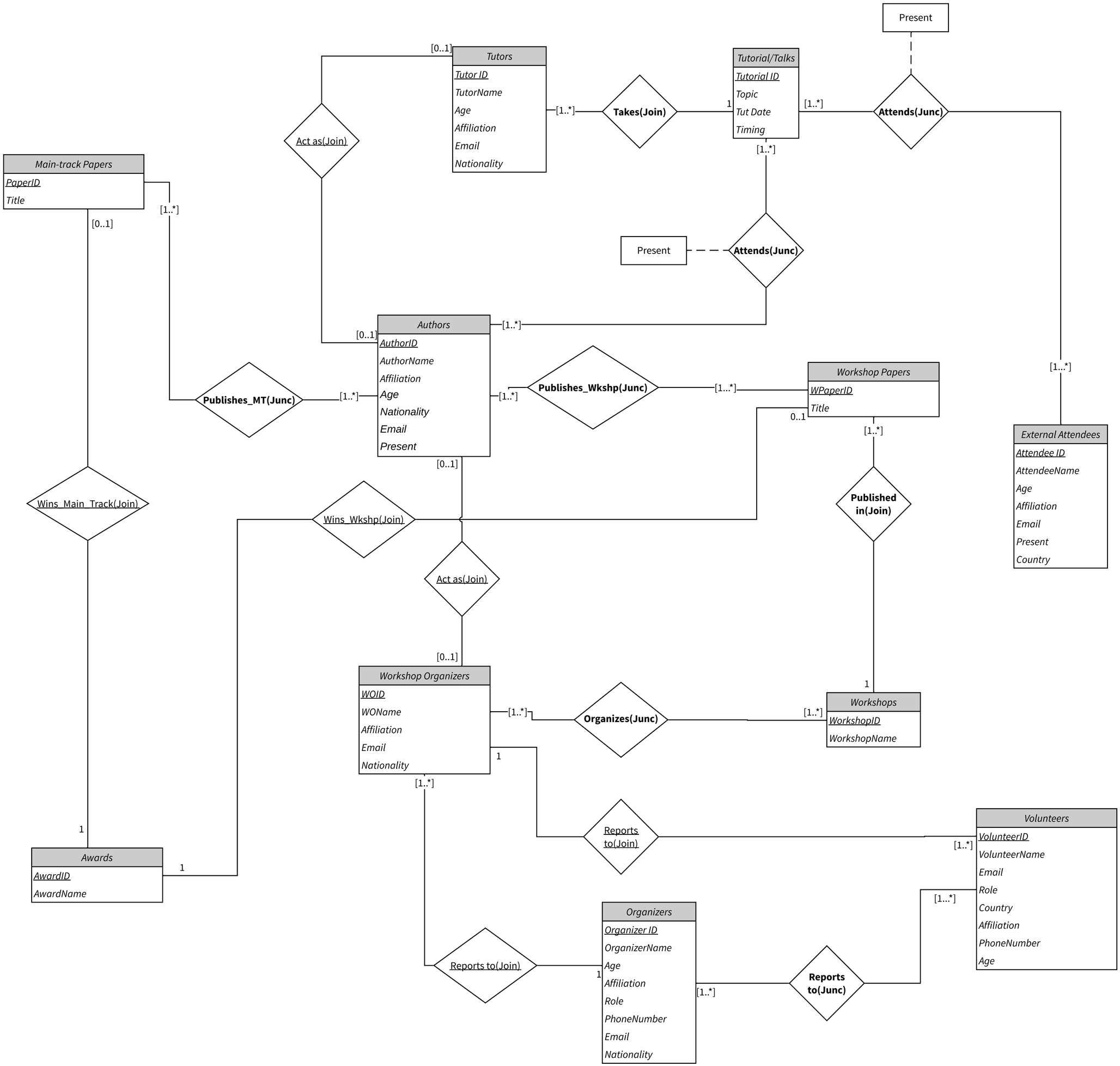
```
mysql> desc WorkshopOrganizers;
+--------------+---------+------+-----+---------+----------------+
| Field        | Type    | Null | Key | Default | Extra          |
+--------------+---------+------+-----+---------+----------------+
| WOID         | int(11) | NO   | PRI | NULL    | auto_increment |
| WOName       | text    | NO   |     | NULL    |                |
| Affiliation  | text    | NO   |     | NULL    |                |
| Email        | text    | NO   |     | NULL    |                |
| AuthorID     | int(11) | YES  | MUL | NULL    |                |
| OrganizerID  | int(11) | YES  | MUL | NULL    |                |
+--------------+---------+------+-----+---------+----------------+
6 rows in set (0.00 sec)

mysql> desc WorkshopPapers;
+-------------+---------+------+-----+---------+----------------+
| Field       | Type    | Null | Key | Default | Extra          |
+-------------+---------+------+-----+---------+----------------+
| WPaperID    | int(11) | NO   | PRI | NULL    | auto_increment |
| Title       | text    | NO   |     | NULL    |                |
| WorkshopID  | int(11) | NO   | MUL | NULL    |                |
+-------------+---------+------+-----+---------+----------------+
3 rows in set (0.00 sec)

mysql> desc Workshops;
+-------------+---------+------+-----+---------+----------------+
| Field       | Type    | Null | Key | Default | Extra          |
+-------------+---------+------+-----+---------+----------------+
| WorkshopID  | int(11) | NO   | PRI | NULL    | auto_increment |
| WName       | text    | NO   |     | NULL    |                |
+-------------+---------+------+-----+---------+----------------+
2 rows in set (0.00 sec)
```

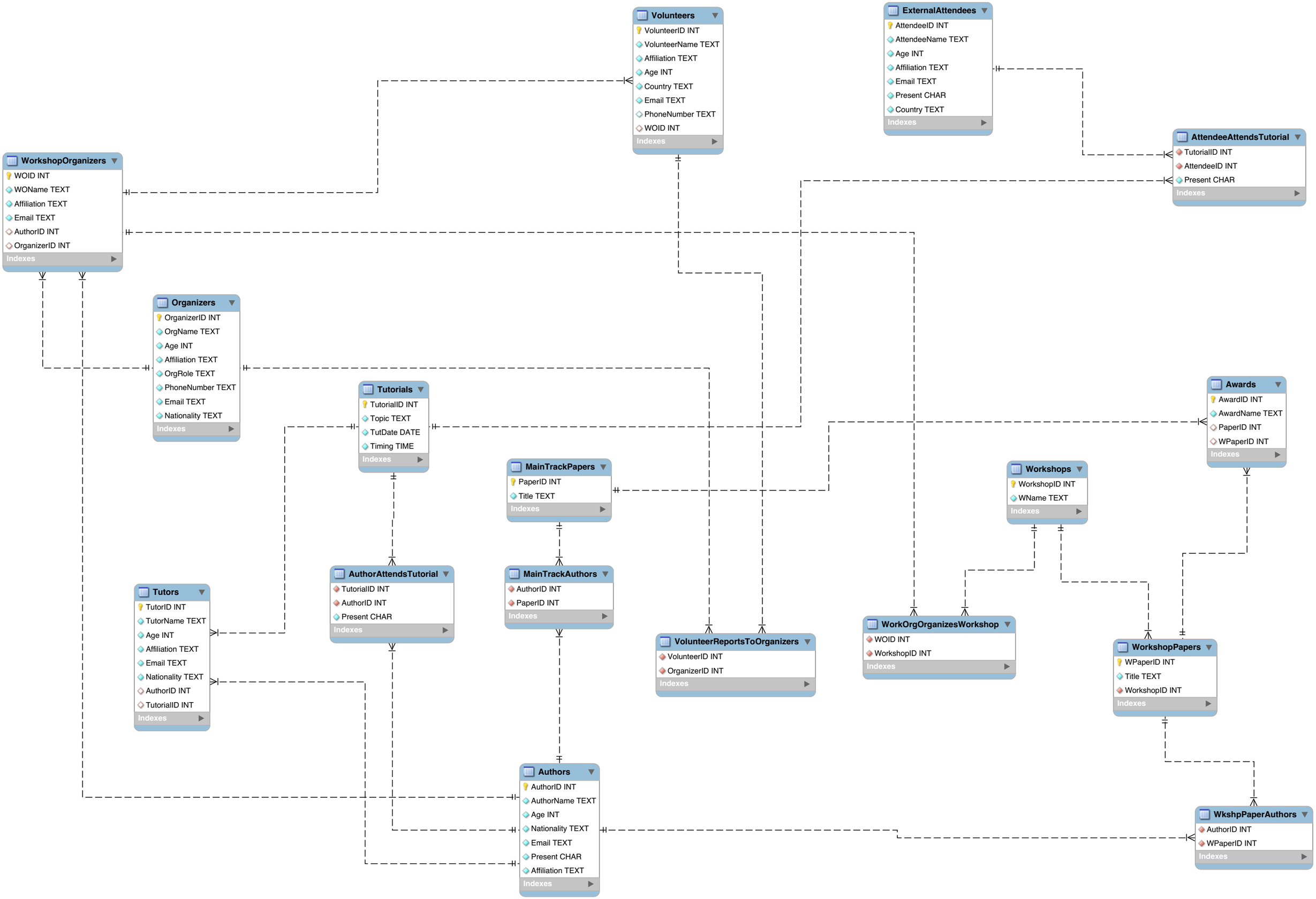
```
mysql> desc Volunteers;
+---------------+---------+------+-----+---------+----------------+
| Field         | Type    | Null | Key | Default | Extra          |
+---------------+---------+------+-----+---------+----------------+
| VolunteerID   | int(11) | NO   | PRI | NULL    | auto_increment |
| VolunteerName | text    | NO   |     | NULL    |                |
| Affiliation   | text    | NO   |     | NULL    |                |
| Age           | int(11) | NO   |     | NULL    |                |
| Country       | text    | NO   |     | NULL    |                |
| Email         | text    | NO   |     | NULL    |                |
| PhoneNumber   | text    | YES  |     | NULL    |                |
| WOID          | int(11) | YES  | MUL | NULL    |                |
+---------------+---------+------+-----+---------+----------------+
8 rows in set (0.00 sec)

mysql> desc WkshpPaperAuthors;
+----------+---------+------+-----+---------+-------+
| Field    | Type    | Null | Key | Default | Extra |
+----------+---------+------+-----+---------+-------+
| AuthorID | int(11) | NO   | MUL | NULL    |       |
| WPaperID | int(11) | NO   | MUL | NULL    |       |
+----------+---------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc WorkOrgOrganizesWorkshop;
+------------+---------+------+-----+---------+-------+
| Field      | Type    | Null | Key | Default | Extra |
+------------+---------+------+-----+---------+-------+
| WOID       | int(11) | NO   | MUL | NULL    |       |
| WorkshopID | int(11) | NO   | MUL | NULL    |       |
+------------+---------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

```
mysql> desc AuthorAttendsTutorial;
+-------------+---------+------+-----+---------+-------+
| Field       | Type    | Null | Key | Default | Extra |
+-------------+---------+------+-----+---------+-------+
| TutorialID | int(11) | NO   | MUL | NULL    |       |
| AuthorID    | int(11) | NO   | MUL | NULL    |       |
| Present     | char(1) | NO   |     | NULL    |       |
+-------------+---------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

Idea Map


Tutorials/Talks{Tutorial ID, Topic, Date, Timing, Tutors, Number of People who attended}
Map{Attender ID registers for Tutorial IDs, Present in Tutorial ID(Yes/No)}
Organizers{Organizers ID, Name, Role, Age, Affiliation, Phone Number, Email - ID, Country, Volunteers, Workshop Organizers}
External Attendees{Attender ID, Name, Age, Affiliation, Email - ID, Present in conference(Yes/No), Country, Tutorials}
Map{Author ID registers for Tutorial ID, Present in Tutorial(Yes/No)}
Map{Tutor ID takes Tutorial ID}
Map{Tutor ID reports Organizer ID}
Map{ Volunteer ID reports Organizer ID}
Map{ Workshop org ID reports Organizer ID}
Map{ Workshop org ID is Author ID}
Map{Tutor ID is Author ID}
Volunteers{Volunteers ID, Name, Role, Age, Affiliation, Email ID, Phone Number, Country, Organizer to Report ID}
Workshop Organizers{WO ID, Workshop ID, Name, Affiliation, Email - ID, Nationality, Organizer to Report}
Authors in this conference{Author ID, Author Name, Affiliation, Age, Nationality, Email-ID, Present in conference(Yes/No), Workshop Papers, Main Track Papers}
Tutors{Tutor ID, Name, Age, Affiliation, Email-ID, Country}
Map{ Volunteer ID reports Workshop Organizer ID}
Map{Workshop Organizer ID organizing Workshop ID}
Map{Paper ID published by Author ID}
Map{Workshop Paper ID published in Workshop ID}
Map{Workshop Paper ID published by Author ID}
Workshop Papers{Workshop Paper ID, Workshop ID, Title of the paper, Authors ID}
Workshops{Workshop ID, Workshop Name}
Main-Track Papers Published{Paper ID, Title of the paper, Authors}
Awards{Award ID, Award Name, Paper}
Map{Paper ID won Award ID}
Map{Workshop Org ID nominated Award ID}
Map{Organizer ID nominated Award ID}
Map{Workshop Paper ID won Award ID}


Present
Tutors
Tutor ID
TutorName
Age
Affiliation
Email
Nationality
[0..1]
[1..*]
Takes(Join)
1
Tutorial/Talks
Tutorial ID
Topic
Tut Date
Timing
[1..*]
Attends(Junc)
[1..*]
Act as(Join)
Main-track Papers
PaperID
Title
[1..*]
[0..1]
Present
Attends(Junc)
Authors
AuthorID
AuthorName
Affiliation
Age
Nationality
Email
Present
[0..1]
[1..*]
[1..*]
Publishes_MT(Junc)
[1..*]
Publishes_Wkshp(Junc)
[1...*]
Workshop Papers
WPaperID
Title
0..1
[1..*]
[1...*]
External Attendees
Attendee ID
AttendeeName
Age
Affiliation
Email
Present
Country
Wins_Main_Track(Join)
Wins_Wkshp(Join)
Act as(Join)
Published in(Join)
[0..1]
Workshop Organizers
WOID
WOName
Affiliation
Email
Nationality
[1..*]
Organizes(Junc)
[1..*]
Workshops
WorkshopID
WorkshopName
1
1
[1..*]
Reports to(Join)
Volunteers
VolunteerID
VolunteerName
Email
Role
Country
Affiliation
PhoneNumber
Age
[1..*]
[1...*]
Reports to(Join)
Organizers
Organizer ID
OrganizerName
Age
Affiliation
Role
PhoneNumber
Email
Nationality
1
[1..*]
Reports to(Junc)
1
Awards
AwardID
AwardName
1


Volunteers
VolunteerID INT
VolunteerName TEXT
Affiliation TEXT
Age INT
Country TEXT
Email TEXT
PhoneNumber TEXT
WOID INT
Indexes
ExternalAttendees
AttendeeID INT
AttendeeName TEXT
Age INT
Affiliation TEXT
Email TEXT
Present CHAR
Country TEXT
Indexes
AttendeeAttendsTutorial
TutorialID INT
AttendeeID INT
Present CHAR
Indexes
WorkshopOrganizers
WOID INT
WOName TEXT
Affiliation TEXT
Email TEXT
AuthorID INT
OrganizerID INT
Indexes
Organizers
OrganizerID INT
OrgName TEXT
Age INT
Affiliation TEXT
OrgRole TEXT
PhoneNumber TEXT
Email TEXT
Nationality TEXT
Indexes
Tutorials
TutorialID INT
Topic TEXT
TutDate DATE
Timing TIME
Indexes
MainTrackPapers
PaperID INT
Title TEXT
Indexes
Awards
AwardID INT
AwardName TEXT
PaperID INT
WPaperID INT
Indexes
Workshops
WorkshopID INT
WName TEXT
Indexes
Tutors
TutorID INT
TutorName TEXT
Age INT
Affiliation TEXT
Email TEXT
Nationality TEXT
AuthorID INT
TutorialID INT
Indexes
AuthorAttendsTutorial
TutorialID INT
AuthorID INT
Present CHAR
Indexes
MainTrackAuthors
AuthorID INT
PaperID INT
Indexes
VolunteerReportsToOrganizers
VolunteerID INT
OrganizerID INT
Indexes
WorkOrgOrganizesWorkshop
WOID INT
WorkshopID INT
Indexes
WorkshopPapers
WPaperID INT
Title TEXT
WorkshopID INT
Indexes
Authors
AuthorID INT
AuthorName TEXT
Age INT
Nationality TEXT
Email TEXT
Present CHAR
Affiliation TEXT
Indexes
WkshpPaperAuthors
AuthorID INT
WPaperID INT
Indexes