Management of Organizational Data

Darshan App

A key to pious India

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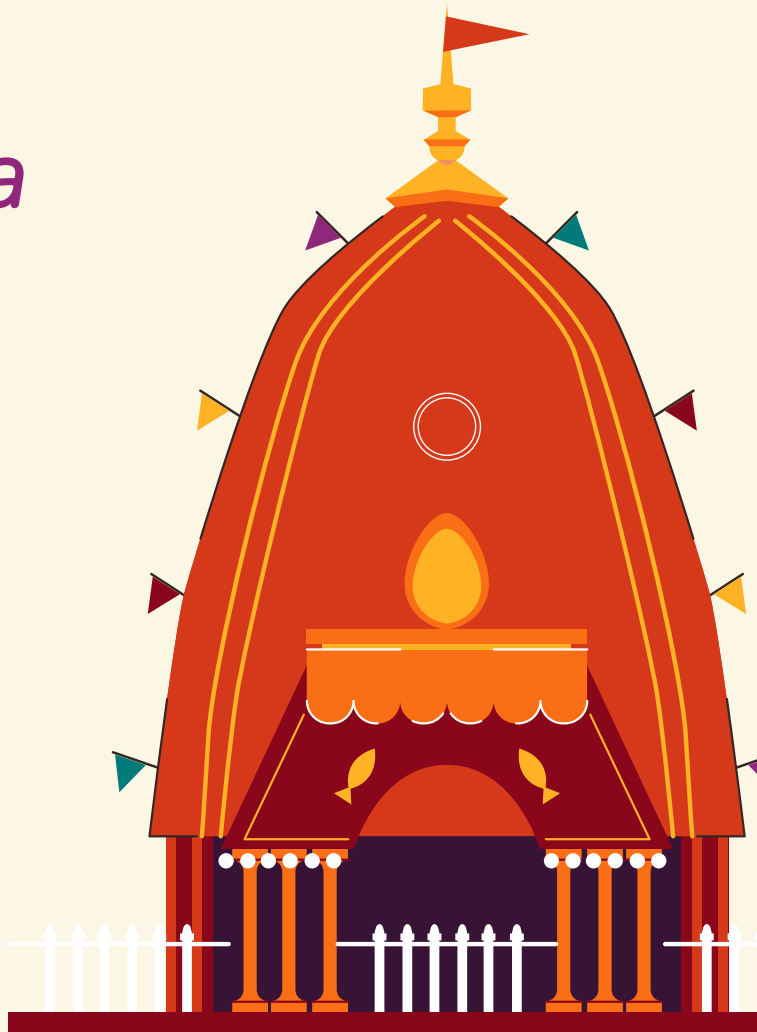

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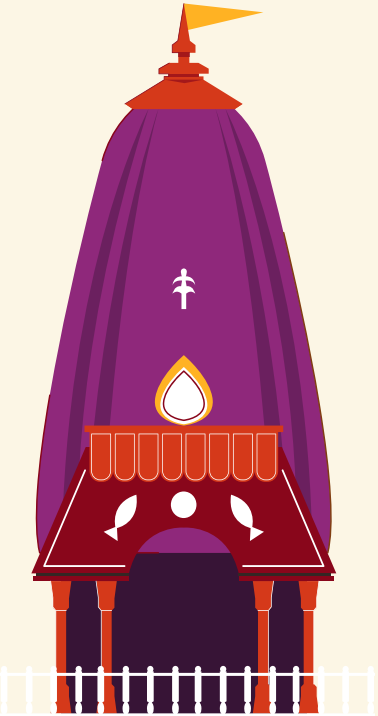
https://darashan.com/

Background



Darshan App: A Beacon of Knowledge for the Spiritually Inclined

Darshan is a spiritual app that caters to the needs of individuals on their spiritual journey. It offers a rich array of resources, such as deity directories, festival calendars, and access to sacred scriptures. As a comprehensive platform, it empowers devotees by providing them with valuable information and tools to enhance their spiritual experiences.

However, despite its valuable content and intentions, Darshan is facing a significant challenge in its current database system. This system, which has been in use, needs to better equip to be capable of meeting the growing demands and complexities of the app's data requirements. The database has become inefficient and struggles to handle the increasing volume of information and user interactions.

This limitation in the database system is adversely affecting Darshan's ability to offer a seamless and user-centric experience to its audience. Users may encounter delays, errors, or difficulties in accessing the information they seek. To maintain and enhance its position as a reliable spiritual resource, Darshan is in need of an upgraded database system that can efficiently manage its expanding data and deliver a smoother experience to its users.

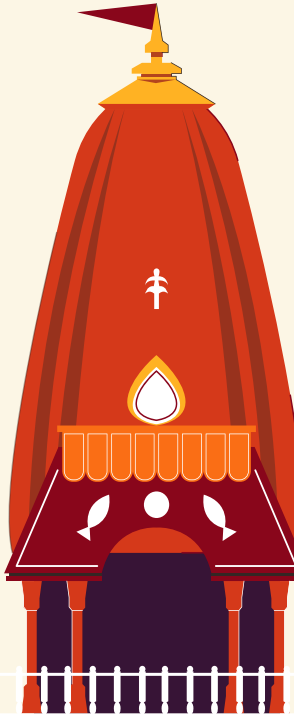
Background

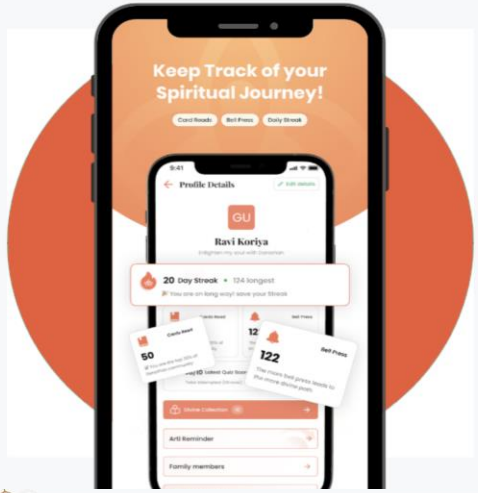
The Need for a New Database

The paradigm shift toward a more expansive and holistic approach to spiritual enlightenment necessitates a database solution that can mirror this transformation. The comprehensive resources that Darshan provides to its users demand a far more sophisticated and versatile database management system.

- Connect the various gods, festivals, and scriptures
- Provide important information on each of them
- Be dynamic and allow devotees to add their own directory
- Be structured in a way that allows the company to answer the most commonly asked questions and queries at a moment's notice
- Improve the user experience
- Increase SEO
- Enable Darshan to develop new features

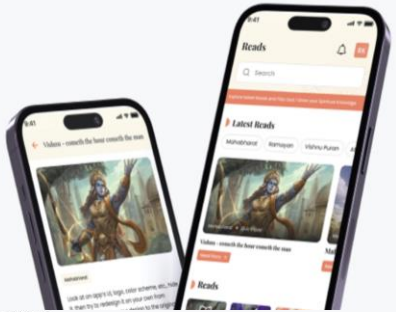
A new database is essential for Darshan to continue to grow and serve its users effectively. The new database will allow Darshan to offer a more seamless and user-centric experience, improve its SEO, and develop new features.





Download the Darashan app for iPhone and Android

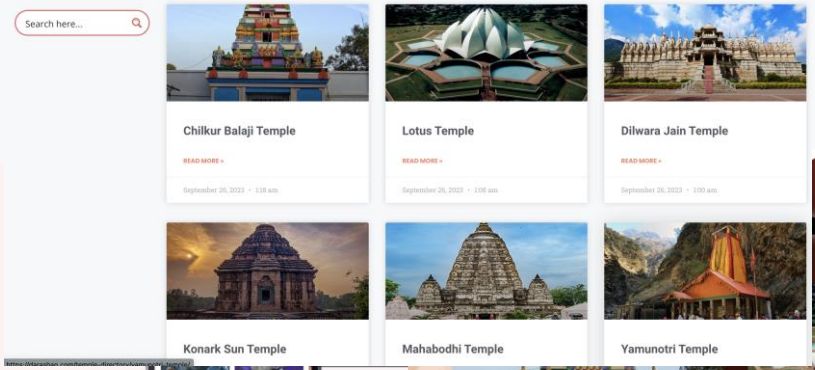
Discover the power of Darashan App to help you regain contro personal development journey. Say goodbye to time-wasting a to purposeful progress. With Darashan, you'll find a seamless access profound spiritual knowledge and stay on track toward inner growth. Embrace the future of personal development wit Darashan – where your spiritual journey becomes a well-organ transformative adventure.



Access Divine Knowledge

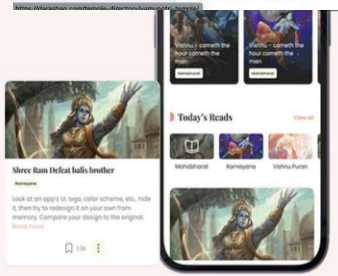
Empowering you to explore the profound teachings of Hinduism with a few clicks on your phone. Access the treasure trove of sacred scriptures, stories, and teachings that were once written in Sanskrit but are now in your language. Our comprehensive collection and intuitive search functionality make it effortless to navigate through the scriptures and find the knowledge you seek.

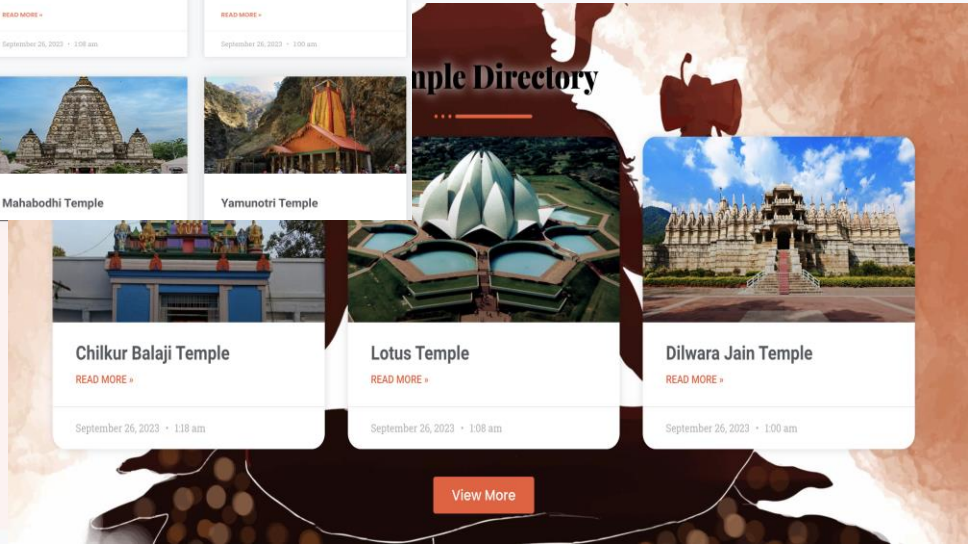
Temple Directory



Choosing a Deity to Guide Your Path

Darashan understands that individual beliefs and spiritual connections are diverse and personal. Fosters a deeper connection with their chosen deity, enabling a more personalized and meaningful journey through the Darashan app.





Introduction

Darshan is a spiritual app that provides users with a variety of resources, including deity directories, festival calendars, and sacred scriptures. The current database system, which is primarily reliant on Microsoft Excel, is no longer adequate to meet the needs of Darshan. The system is inefficient and unable to handle the growing volume and complexity of data. This is preventing Darshan from offering a seamless and user-centric experience.

The objective of this project is to develop a structured database that connects the various gods, festivals, and scriptures and provides important information on each of them. This database will be dynamic and allow devotees to add their own directory. It will also be structured in a way that allows the company to answer the most commonly asked questions and queries at a moment's notice.

Objective

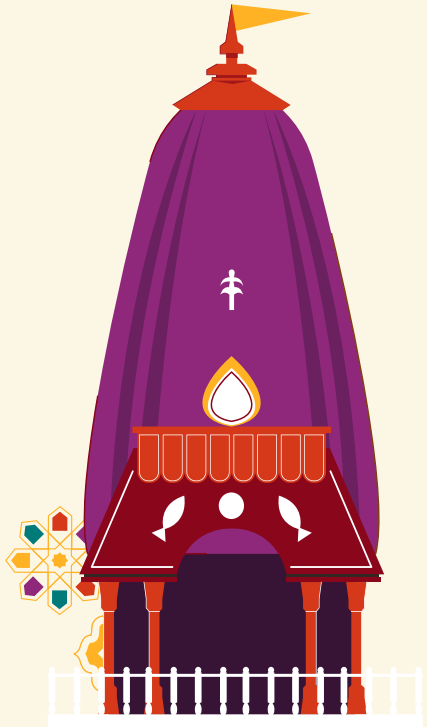
The new database will benefit Darshan in numerous ways:

- **Improved user experience**: The database will allow Darshan to offer a more seamless and user-centric experience. Devotees will be able to easily find the information they need, such as the dates of upcoming festivals, the locations of temples, and the contents of sacred scriptures.

- **Increased SEO**: Darshan can use the database to improve its SEO ranking. For example, when Darshan writes about a temple or god, it can include information about related festivals, puranas, and other scriptures. This will make the Darshan website more informative and relevant to search engine users.

- **New features**: The database will enable Darshan to develop new features, such as a festival calendar and a push notification system. Devotees can use the festival calendar to track upcoming festivals and receive push notifications about important events.

Objective



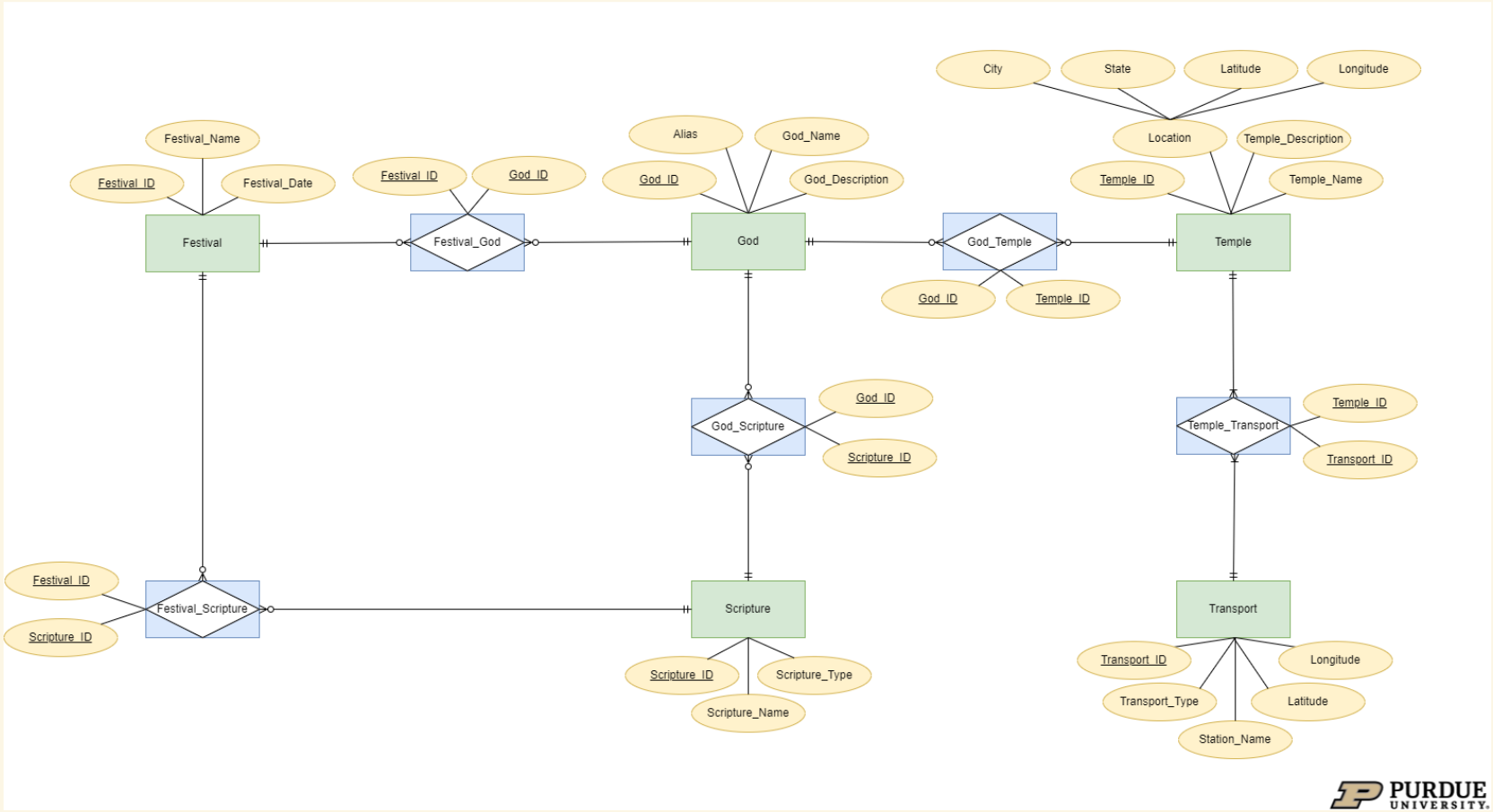
The potential of a robust and versatile database for Darshan goes beyond just efficient data management. It can revolutionize the way the platform serves its users.

- **Personalized Recommendations**: With a new database, Darshan can implement personalized recommendation systems. It could suggest relevant festivals for devotees to attend based on their interests, location, or previous engagements, making it more tailored and engaging.

- **Knowledge Base of Spiritual Wisdom**: It can serve as the foundation for a comprehensive knowledge base of spiritual wisdom for creating informative articles, engaging videos, and other educational content. This content can help users deepen their understanding of their faith and spirituality, fostering a deeper connection.

- **Community Forum**: A database upgrade can also enable the creation of a vibrant community forum within the app. Devotees can connect with each other, share their spiritual experiences, seek advice, and engage in meaningful discussions

Entity Relationship Diagram



PURDUE UNIVERSITY

Understanding the Entity Relationship Diagram

The attached ERD (Entity-Relationship Diagram) is a visual representation of the relationships between the following:

Entities

Temple
Festival
Scripture
God
Transport

Associative Entities

God Temple
God Scripture
Festival God
Festival Scripture
Temple Transport

The relationships between the entities are as follows:

A festival can have many scriptures
A scripture can be associated with many festivals

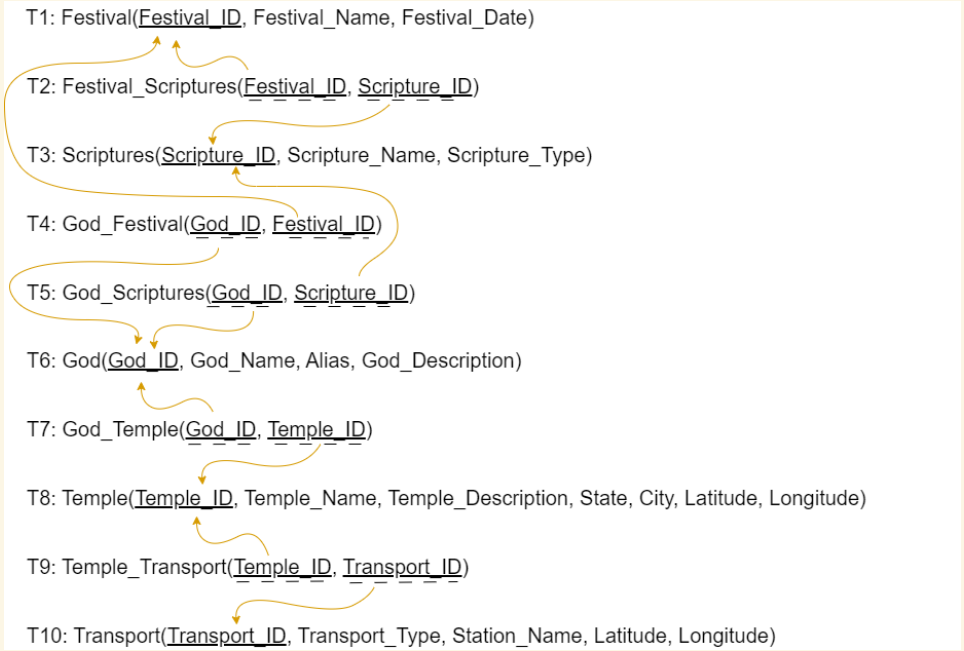
A temple can have many gods
A god can be associated with many temples

A festival can celebrate a lot of gods
A god can be celebrated in various festivals

A god can be associated with many scriptures
A scripture can be associated with many gods

A temple can be reached by various transport options
A transport station can be the starting point of many temples

Relational Schema

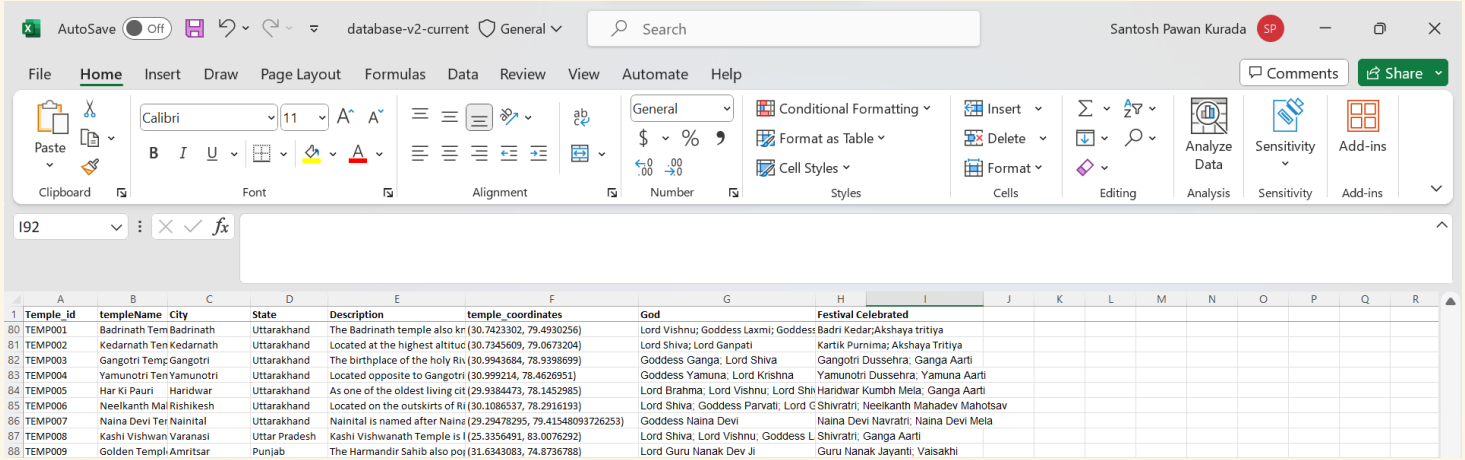


- **The image presents a clear and concise representation of the relational schema, complete with referential integrity constraints and functional dependencies.**
- **This schema serves as a foundational blueprint for organizing and structuring the database, ensuring that data relationships are maintained with precision and accuracy.**
- **The Referential integrity constraints guarantee the consistency and reliability of data by enforcing rules that govern the relationships between tables, while functional dependencies provide valuable insights into how attributes within the schema relate to one another.**

Database Design Technique (1/3)

Below is a snippet of the data that we received from our client.

Table in 0 NF



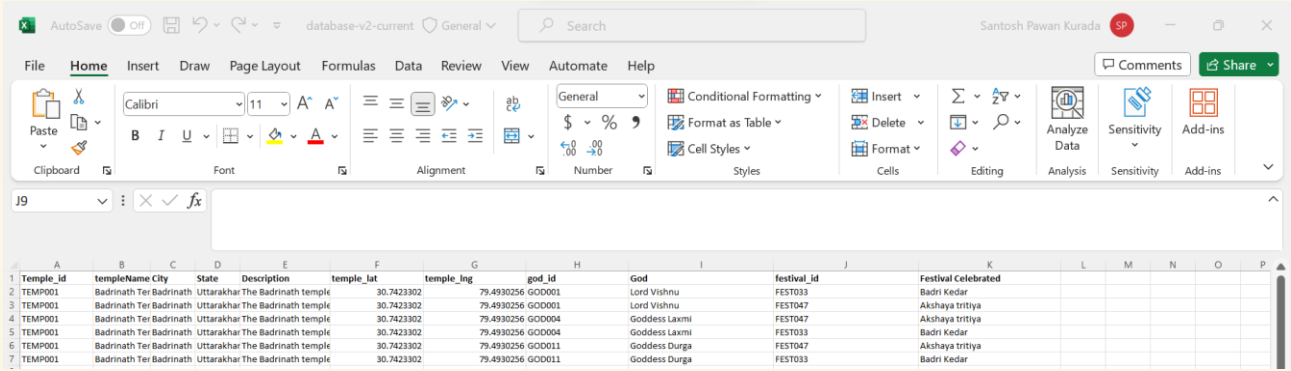
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Temple_id	templeName	City	State	Description	temple_coordinates	God	Festival Celebrated										
80	TEMP001	Badrinath Tem	Badrinath	Uttarakhand	The Badrinath temple also kn	(30.7423302, 79.4930256)	Lord Vishnu; Goddess Laxmi; Goddess	Badri Kedar;Akshaya tritiya										
81	TEMP002	Kedarnath Ten	Kedarnath	Uttarakhand	Located at the highest altitud	(30.7345609, 79.0673204)	Lord Shiva; Lord Ganpati	Kartik Purnima; Akshaya Tritiya										
82	TEMP003	Gangotri Temp	Gangotri	Uttarakhand	The birthplace of the holy Ri	(30.9943684, 78.9398699)	Goddess Ganga; Lord Shiva	Gangotri Dussehra; Ganga Aarti										
83	TEMP004	Yamunotri Ten	Yamunotri	Uttarakhand	Located opposite to Gangotri	(30.999214, 78.4626951)	Goddess Yamuna; Lord Krishna	Yamunotri Dussehra; Yamuna Aarti										
84	TEMP005	Har Ki Pauri	Haridwar	Uttarakhand	As one of the oldest living cit	(29.9384473, 78.1452985)	Lord Brahma; Lord Vishnu; Lord Shi	Haridwar Kumbh Mela; Ganga Aarti										
85	TEMP006	Neelkanth Mal	Rishikesh	Uttarakhand	Located on the outskirts of Ri	(30.1086537, 78.2916193)	Lord Shiva; Goddess Parvati; Lord G	Shivratri; Neelkanth Mahadev Mahotsav										
86	TEMP007	Naina Devi Ter	Nainital	Uttarakhand	Nainital is named after Naina	(29.29478295, 79.41548093726253)	Goddess Naina Devi	Naina Devi Navratri; Naina Devi Mela										
87	TEMP008	Kashi Vishwan	Varanasi	Uttar Pradesh	Kashi Vishwanath Temple is l	(25.3356491, 83.0076292)	Lord Shiva; Lord Vishnu; Goddess L	Shivratri; Ganga Aarti										
88	TEMP009	Golden Templ	Amritsar	Punjab	The Harmandir Sahib also po	(31.6343083, 74.8736788)	Lord Guru Nanak Dev Ji	Guru Nanak Jayanti; Vaisakhi										

It can be observed that the data is in 0 NF because the *God*, *Festivals Celebrated* and *temple coordinates* have more than one value for each tuple. So, we break down the table to achieve 1 NF.

Database Design Technique (2/3)

Post normalizing the tables into 1NF, we checked for 3NF meeting criteria

Table in 1NF



Temple_id	templeName	City	State	Description	temple_lat	temple_lng	god_id	God	festival_id	Festival Celebrated
TEMP001	Badrinath Ter	Badrinath	Uttarakhar	The Badrinath temple	30.7423302	79.4930256	GOD001	Lord Vishnu	FEST033	Badri Kedar
TEMP001	Badrinath Ter	Badrinath	Uttarakhar	The Badrinath temple	30.7423302	79.4930256	GOD001	Lord Vishnu	FEST047	Akshaya tritiya
TEMP001	Badrinath Ter	Badrinath	Uttarakhar	The Badrinath temple	30.7423302	79.4930256	GOD004	Goddess Laxmi	FEST047	Akshaya tritiya
TEMP001	Badrinath Ter	Badrinath	Uttarakhar	The Badrinath temple	30.7423302	79.4930256	GOD004	Goddess Laxmi	FEST033	Badri Kedar
TEMP001	Badrinath Ter	Badrinath	Uttarakhar	The Badrinath temple	30.7423302	79.4930256	GOD011	Goddess Durga	FEST047	Akshaya tritiya
TEMP001	Badrinath Ter	Badrinath	Uttarakhar	The Badrinath temple	30.7423302	79.4930256	GOD011	Goddess Durga	FEST033	Badri Kedar

All tuples in this table are strictly indivisible and there are no partial dependencies, however, there are some transitive functional dependencies that need to be eliminated to achieve 3NF.

Functional dependencies

Temple_ID → Temple_Name, City, State, Description, Temple_Lat, Temple_Lng, God_ID, Festival_ID

Festival_Id → Fest_Name

God_Id → God_Name

Database Design Technique (3/3)

After breaking down the temples to achieve 3 NF and the final relational schema is as below:

Database Implementation

We imported the database from Excel we formed by our research into MySQL without manually creating tables using the Import Data Wizard, follow these steps:

1. **Access Import Data Wizard**: In MySQL Workbench, navigate to the "Server" menu, select "Data Import," and choose "Import from Self-Contained File.”

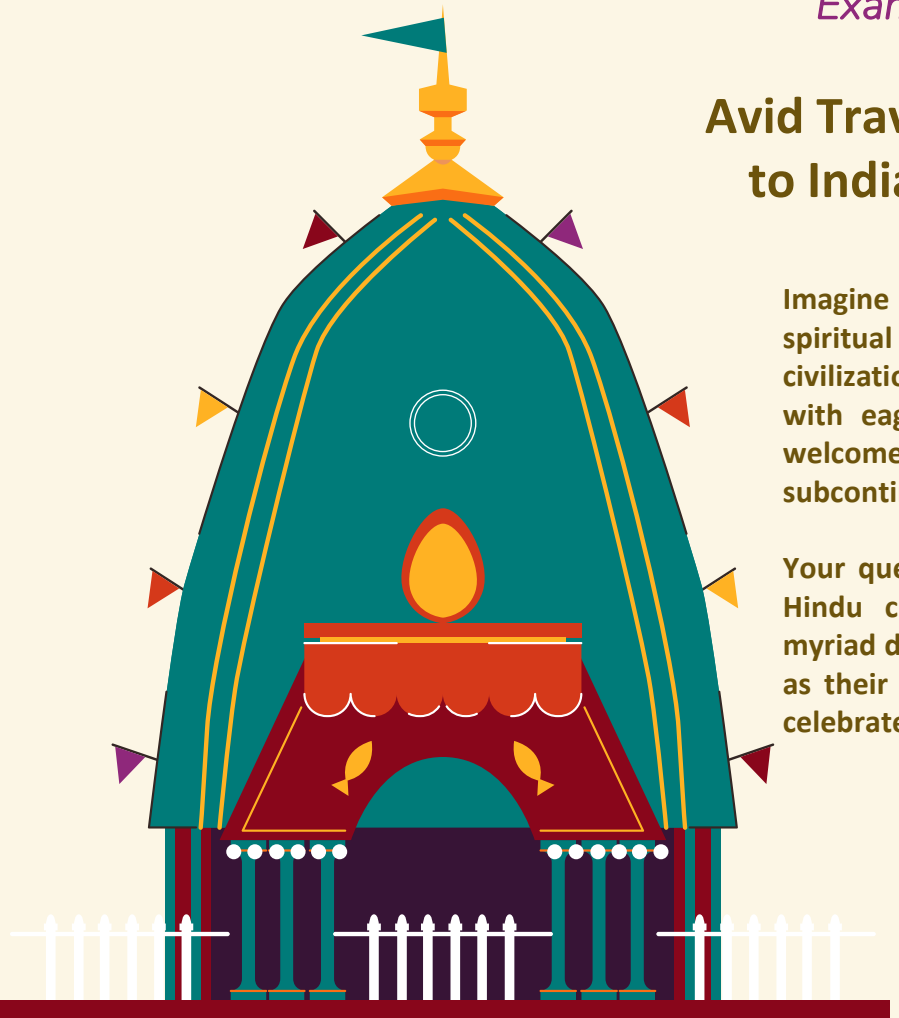
2. **Select Excel File**: Selected the temple directory Excel file

3. Specified Target Schema and Database: Choose the target schema and database where you want to import the data, or create new ones as needed.

4. **Map Columns and Configure Options**: Mapped the columns in our Excel file to the MySQL table, ensuring proper data type alignment. Configure advanced options like handling duplicates, character encoding, and more.

Then, initiated the data import process.

Example of a Simple Use Case



Avid Traveller's Spiritual Expedition to India: A Journey of Discovery

Imagine yourself, an avid traveller, embarking on a spiritual expedition to India, the land of ancient civilizations and diverse cultures. Your heart beats with eager anticipation as you step off the plane, welcomed by the warm embrace of the Indian subcontinent.

Your quest is to delve deep into the rich tapestry of Hindu culture, gaining profound insights into the myriad deities, exploring the sacred temples that serve as their abodes, and uncovering the diverse festivals celebrated at these holy sites.

Queries

SQL Query 1 –

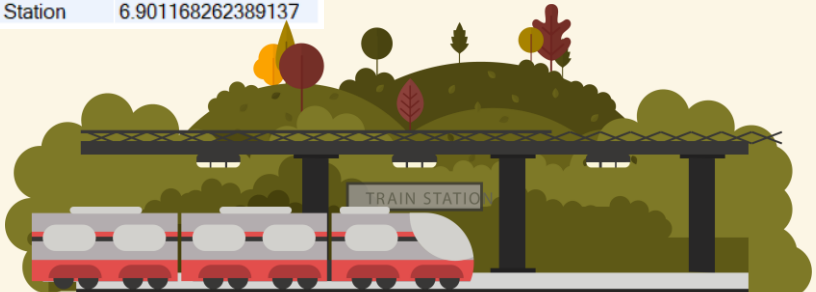
What are the different transport stations near Akshardham temple in Delhi within 7km radium and what's their distance from the temple is ascending order?

```sql
-- Query 1
SELECT
    T.Temple_Name,
    State,
    TR.Station_Name,
    TR.Transport_Type,
    (6371*ACOS(COS(RADIANS(T.latitude))*COS(RADIANS(TR.latitude))*COS(RADIANS(TR.longitude) - RADIANS(T.longitude)) + SIN(RADIANS(T.latitude))*SIN(RADIANS(TR.latitude))))
        AS distancekms
FROM
    Temple T
        INNER JOIN
    temple_transport TT ON T.Temple_ID = TT.Temple_ID
        INNER JOIN
    Transport TR ON TR.Transport_ID = TT.Transport_ID
WHERE
    T.Temple_Name = 'Akshardham Temple '
        AND State = 'Delhi'
        AND (6371*ACOS(COS(RADIANS(T.latitude))*COS(RADIANS(TR.latitude))*COS(RADIANS(TR.longitude) - RADIANS(T.longitude)) + SIN(RADIANS(T.latitude))*SIN(RADIANS(TR.latitude))))
            < 7
ORDER BY distancekms;
```

Temple_Name	State	Station_Name	Transport_Type	distancekms
Akshardham Temple	Delhi	New Delhi Railway Station	Train Station	1.76775241289642
Akshardham Temple	Delhi	Indira Gandhi International Airport	Airport	5.621537821439783
Akshardham Temple	Delhi	Ganesh Nagar	Bus Station	6.638731363412236
Akshardham Temple	Delhi	Akshardham Metro Station	Train Station	6.901168262389137

This SQL query extracts details about transport stations located within a 7-kilometer radius of Akshardham Temple in Delhi. It focuses on finding the nearest stations to the temple, ordering them by distance in ascending order.

Ultimately, this helps our traveller with a concise list of transport stations near the temple, sorted by their proximity to the sacred site.



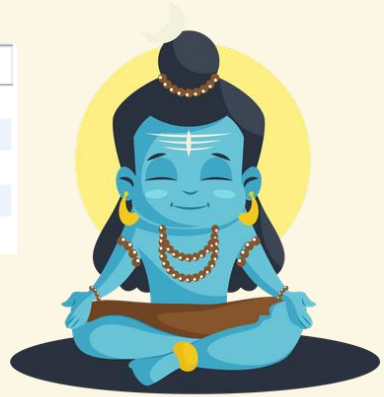
SQL Query 2 –

What are all the temples the traveller can visit to get a darshan of Lord Shiva in these cities: 'Bhubaneshwar', 'Kedarnath', 'Srisailam'?

```sql
-- Query 2
SELECT
    T.Temple_Name, G.God_Name, T.City
FROM
    Temple T
        INNER JOIN
    God_Temple GT ON T.Temple_ID = GT.Temple_ID
        INNER JOIN
    God G ON G.God_ID = GT.God_ID
WHERE
    G.God_Name = 'Lord Shiva'
    AND T.City IN ('Bhubaneshwar' , 'Kedarnath', 'Srisailam');
```

	Temple_Name	God_Name	City
▶	Kedarnath Temple	Lord Shiva	Kedarnath
	Rajarani Temple	Lord Shiva	Bhubaneshwar
	Lingaraj Temple	Lord Shiva	Bhubaneshwar
	Mukteswar Temple	Lord Shiva	Bhubaneshwar
	Mallikarjuna Jyotirlinga In Srisailam	Lord Shiva	Srisailam

This query retrieves a list of temples where the traveller can seek the darshan (blessed sight) of Lord Shiva in the specified cities: 'Bhubaneshwar,' 'Kedarnath,' and 'Srisailam'. It accomplishes this by joining data from the "Temple," "God_Temple," and "God" tables, focusing on the deity 'Lord Shiva.'.

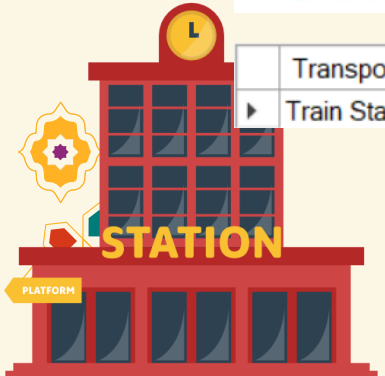


SQL Query 3 –

Help the traveller filter between Railway station vs Metro station to reach a particular temple

```sql
-- Query 3
SELECT
    Transport_Type,
    COUNT(CASE
        WHEN Station_Name LIKE '%Railway%' THEN Station_Name
    END) AS Railway_Station_Count,
    COUNT(CASE
        WHEN Station_Name LIKE '%Metro Station' THEN Station_Name
    END) AS Metro_Station_Count
FROM
    Transport
WHERE
    Transport_Type = 'Train Station'
GROUP BY Transport_Type;
```

Transport_Type	Railway_Station_Count	Metro_Station_Count
Train Station	33	2



This query assists the traveller in deciding between railway stations and metro stations when planning their journey to a particular temple. It counts the number of stations falling under each category and focuses on the 'Train Station' transport type. By presenting a clear count of railway and metro stations, the query enables travelers to make informed choices regarding their transportation options for reaching the temple.

SQL Query 4 –

To see the maximum number no of temples in a region dedicated to a god, when the traveller is attending a festival after September

```
 -- Query 4
SELECT
    T.State, G.God_Name, COUNT(T.Temple_Name) AS Temple_count
FROM
    Temple T
        INNER JOIN
    God_Temple GT ON T.Temple_ID = GT.Temple_ID
        INNER JOIN
    God G ON G.God_ID = GT.God_ID
WHERE
    G.God_Name IN (SELECT DISTINCT
            G.God_Name
        FROM
            God AS G
                INNER JOIN
            God_Festival GF ON G.God_ID = GF.God_ID
                INNER JOIN
            Festival F ON F.Festival_ID = GF.Festival_ID
        WHERE
           Month( Festival_Date) >= 9 )
GROUP BY T.State , G.God_Name
ORDER BY Temple_count DESC
LIMIT 1;
```

	State	God_Name	Temple_count
▶	Tamil Nadu	Lord Shiva	7

This query serves to determine the region with the highest number of temples dedicated to a specific god when the traveller is planning to attend a festival after September. It accomplishes this by counting the temples devoted to the chosen deity within each state, considering festival timings. The results are then sorted in descending order of temple count, revealing the region with the most temples for the traveller to explore.

SQL Query 5 –

The traveller wants to know are there any other names Lord Shiva, Lord Vishnu and Lord Ganapathi are referred by and how many scriptures associated with these gods for better understanding?

```sql
-- Query 5
SELECT
    G.God_Name,
    G.Alias,
    COUNT(S.Scripture_Name) AS No_of_Scriptures
FROM
    God G
        INNER JOIN
    God_scripture GS ON G.God_ID = GS.God_ID
        INNER JOIN
    Scriptures S ON S.Scripture_ID = GS.Scripture_ID
WHERE
    G.God_Name IN ('Lord Shiva' , 'Lord Vishnu', 'Lord Ganesha')
GROUP BY G.God_Name , G.Alias;
```

	God_Name	Alias	No_of_Scriptures
▶	Lord Ganesha	Lord Ganapati	2
	Lord Shiva	Lord Mahadeva	28
	Lord Vishnu	Lord Hari	13

This query assists the traveller in discovering alternative names for Lord Shiva, Lord Vishnu, and Lord Ganapati while also providing insights into the number of scriptures associated with these deities. This information enriches the traveller's understanding of these revered deities and their references in various scriptures, making it easier to explore their diverse aspects and significance.

SQL Query 6 –

The traveller wants to see if there are other temples you can visit from Chandigarh airport where he can worship more than 5 gods at these temples

```
 -- Query 6
SELECT
    TR.Station_Name,
    T.Temple_Name,
    COUNT(G.God_Name) AS No_Gods_Worshiped
FROM
    Temple T
        INNER JOIN
    temple_transport TT ON T.Temple_ID = TT.Temple_ID
        INNER JOIN
    Transport TR ON TR.Transport_ID = TT.Transport_ID
        INNER JOIN
    God_Temple GT ON T.Temple_ID = GT.Temple_ID
        INNER JOIN
    God G ON G.God_ID = GT.God_ID
WHERE
    TR.Station_Name = 'Chandigarh Airport'
GROUP BY TR.Station_Name , T.Temple_Name
HAVING No_Gods_Worshiped >=5
ORDER BY No_Gods_Worshiped DESC;
```

Station_Name	Temple_Name	No_Gods_Worshiped
Chandigarh Airport	ISKON Temple	7
Chandigarh Airport	Birla Mandir	5

This query aids the traveller in identifying temples in proximity to Chandigarh Airport, where they can engage in worship of more than five different gods. By connecting data from multiple tables, including "Temple," "Temple_Transport," "Transport," "God_Temple," and "God," the query establishes links between temples, modes of transportation, gods, and their worship practices. It narrows down the results to temples near Chandigarh Airport, ensuring convenient access for travellers.

SQL Query 7 –

The traveller wants to know which gods will have at least 2 festivals if he visits between 5th and 25th of the October

```sql
-- Query 7
SELECT DISTINCT
    G.God_Name,
    COUNT(DISTINCT F.Festival_Name) AS Festival_Count
FROM
    God AS G
        INNER JOIN
    God_Festival GF ON G.God_ID = GF.God_ID
        INNER JOIN
    Festival F ON F.Festival_ID = GF.Festival_ID
WHERE
    MONTH(Festival_Date) = 10
        AND DAY(Festival_Date) BETWEEN 5 AND 25
GROUP BY G.God_Name
HAVING Festival_Count >= 2
ORDER BY Festival_Count;
```

God_Name	Festival_Count
Lord Hanuman	2
Lord Rama	2
Lord Ganesha	3
Lord Krishna	3
Lord Shiva	7

This query assists the traveller in identifying gods associated with at least two festivals that coincide with a visit between the 5th and 25th of October. The query focuses on festivals occurring within the month of October and between the specified date range. After grouping the results by god name, it filters out gods with fewer than two festivals. The query finally presents the results in ascending order of festival count, revealing the deities with multiple festivals during the traveller's intended visit period.

SQL Query 8 –

A traveller seeks to determine the month with the most festivals dedicated to Lord Krishna to plan their travel schedule accordingly.

```sql
-- Query 8
SELECT
    MONTH(Festival_Date) AS Month_Name,
    COUNT(DISTINCT Festival_Name) AS Festival_Count
FROM
    Festival AS F
        INNER JOIN
    God_Festival GF ON F.Festival_ID = GF.Festival_ID
        INNER JOIN
    God G ON G.God_ID = GF.God_ID
WHERE
    G.God_Name = 'Lord Krishna'
GROUP BY Month_Name
ORDER BY Festival_Count DESC
LIMIT 1;
```

	Month_Name	Festival_Count
▶	10	3

This query assists the traveller in pinpointing the month with the highest number of festivals dedicated to Lord Krishna, aiding them in planning their travel schedule accordingly. Armed with this insight, the traveller can align their visit to immerse in the vibrant festivities and spiritual experiences associated with Lord Krishna during the peak festival month.

SQL Query 9 –

Out of curiosity the traveller wants to know the Total Number Gods and Goddesses in India

```
-- Query 9
SELECT
  SUM(IF(god_name LIKE '%Lord%', 1, 0)) AS lord_count,
  SUM(IF(god_name LIKE '%goddess%', 1, 0)) AS goddess_count
FROM
  God;
```

	lord_count	goddess_count
▶	43	33

This query serves the traveller's curiosity by calculating the total number of gods and goddesses in India. It achieves this by distinguishing between male deities with names ending in '%Lord' and female deities with names containing 'goddess.' Drawing data from the "God" table, the query provides a comprehensive count of gods and goddesses, offering insights into the rich and diverse pantheon of deities worshipped in India.

SQL Query 10 –

Our traveller seems to be a devotee of “Lord Vishnu” and wants to know the state that has the most number of temples for the god “Lord Vishnu”

```sql
-- Query 10
SELECT
    T.State, G.God_Name, COUNT(temple_name) AS count_temple
FROM
    Temple T
        INNER JOIN
    God_Temple GT ON T.Temple_ID = GT.Temple_ID
        INNER JOIN
    God G ON G.God_ID = GT.God_ID
WHERE
    G.God_Name = 'Lord Vishnu'
GROUP BY State , God_Name
ORDER BY count_temple DESC
LIMIT 1;
```

	State	God_Name	count_temple
▶	Orissa	Lord Vishnu	3

This query is designed for the devoted traveller of Lord Vishnu, aiming to uncover the Indian state with the greatest number of temples dedicated to "Lord Vishnu." By combining data from the "Temple," "God_Temple," and "God" tables through inner joins, the query counts the temples associated with this deity in each state. It then identifies the state with the highest temple count for "Lord Vishnu," allowing the traveller to plan a meaningful and spiritually enriching journey to a region known for its devotion to this revered god.

Thank You

Q & A