

# 3D Visualization Proposal

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## Concept

Basically, my idea for the final project is to visualize the most famous 100 cities in the world according to their checked out book in SPL and make a prediction on how hot will these cities be in the following year. Firstly, I search the top 100 cities from public data source online and record their names. Secondly, I query SPL from the year 2006 to 2013 about these cities and visualize the data in two ways. One is visualizing the distribution on world map and compare different the top cities distribution in different continents in every year, and the second way is to draw a overall histogram from the year 2006 to 2013, with x-axis, y-axis and z-axis the values "year", "cities" and "book quantity". Finally, I use model GM(1, 1) to predict the trend of the top cities in the year 2014 and visualize it on world map, then compare the prediction with the actual data in the first two month in 2014 which can be retrieved in SPL.

## Query

```
select  sum(case when (title like '%los angeles%') then 1 else 0 end) as 'los
angeles', sum(case when (title like '%tokyo%') then 1 else 0 end) as
'tokyo',sum(case when (title like '%beijing%') then 1 else 0 end) as 'beijing',
sum(case when (title like '%paris%') then 1 else 0 end) as 'paris', sum(case when
(title like '%new york%') then 1 else 0 end) as 'new york' .....from inraw where
year(cout) = 2006;
```

.....

.....

```
select  sum(case when (title like '%los angeles%') then 1 else 0 end) as 'los
angeles', sum(case when (title like '%tokyo%') then 1 else 0 end) as
'tokyo',sum(case when (title like '%beijing%') then 1 else 0 end) as 'beijing',
sum(case when (title like '%paris%') then 1 else 0 end) as 'paris', sum(case when
(title like '%new york%') then 1 else 0 end) as 'new york' .....from inraw where
year(cout) = 2013;
```

There are eight such queries in total, each representing a year.

## Doodle

