

Original Question History

Ranking

Ranking	Points	Player Id	Tours	...
1	9,985	3	11	...

Matches

Id	Tourney	Winner Id	Year	...
1	Australian Open	3	2018	...

Players

Name	Nation	Id	Continent	...
Djokovic	Serbia	1	Europe	...
Osaka	Japan	2	Asia	...
Federer	Switzerland	3	Europe	...

Q1: How many players are there?

A1: SELECT COUNT(DISTINCT name) FROM players

Q2: Which ones won in the tourney Australian Open?

A2: SELECT name FROM players JOIN matches WHERE tourney = 'Australian Open'

Q3: Return the points of these players who come from Europe?

A3: ?

Structure-Aware Annotator

Input with Structure Mark

[Table] **[H]** Matches | Ranking | **[M]** **[H]** Players
 [Column] **[M]** Ranking.Player_id | ... | **[H]** Players.name
 [Graph] **(Ranking -> Matches)** | **(Players -> Matches)**
 [History] How many players are there? Which ones
 [Question] Return the points of these players who come from Europe?

[Table] Matches | Ranking | Players
 [Column] Ranking.Player_id | ... | Players.name
 [History] How many players are there? Which ones
 [Question] Return the points of these players who come from Europe?

(a) Flatten Question and Schema

Q3: Return the points of these **players**...

Ranking

...	Player Id	Tours
	1	
	2	
	3	

Players

Name	Nation	...

[Table] Matches | Ranking | **[M]** Players | ...
 [Column] **[M]** Ranking.Player_id | ... | Players.name

(b) Schema Linking



[Graph] **(Ranking -> Matches)** | **(Players -> Matches)**

(c) Database Structure

A2: SELECT **name** FROM **players** JOIN **matches**
 WHERE tourney = 'Australian Open'

Players

Name	Nation	...

Matches

Id	Tourney	...

[Table] **[H]** Matches | Ranking | **[H]** Players | ...
 [Column] Ranking.Player_id | ... | **[H]** Players.name

(d) Discourse Structure