

Architecture Technical Test

Betbright consists of a sportsbook product which is responsible for managing sports, events, markets and selections. The below screenshot illustrates sports, events, markets and selections.

The screenshot shows a sportsbook interface with a dark blue header and a light blue sidebar. The main content area is divided into sections. At the top, a red box highlights 'Football' with an arrow pointing to 'Sport'. Below this, another red box highlights 'France v England' with an arrow pointing to 'Event'. The date 'Tuesday, June 13th 20:00' is displayed below the event name. A navigation bar contains links: 'POPULAR', 'GOALSCORER', 'SCORE MARKETS', 'HALF MARKETS', 'TEAM MARKETS', and 'VIEW ALL'. Below the navigation bar, a red box highlights 'Full Time Result' with an arrow pointing to 'Market'. The market is displayed as a table with three columns: 'France' (1.85), 'Draw' (3.40), and 'England' (4.20). A red box highlights the 'Both Teams To Score' market with an arrow pointing to 'Selections'. The 'Both Teams To Score' market is displayed as a table with two columns: 'Yes' (1.91) and 'No' (1.85). Red arrows indicate the flow from 'Football' to 'Sport', 'France v England' to 'Event', 'Full Time Result' to 'Market', and the 'Both Teams To Score' market to 'Selections'.

Fifa International Friendlies 2017, World	
France v England	
Tuesday, June 13th 20:00	
POPULAR GOALSCORER SCORE MARKETS HALF MARKETS TEAM MARKETS VIEW ALL EXPAND ALL	
Full Time Result	
France	1.85
Draw	3.40
England	4.20
Both Teams To Score	
Yes	1.91
No	1.85

A sport contains the following elements:

- Name
- Display Name
- Slug (url friendly version of name)
- Order
- Active (Either true or false)

An event contains the following elements:

- Name
- Event Type (Either preplay or inplay)
- Sport
- Status (Preplay, Inplay or Ended)
- Slug (url friendly version of name)
- Active (Either true or false)

A market contains the following elements:

- Name
- Display Name
- Order
- Active (Either true or false)
- Schema (integer value which controls how market is displayed)
- Columns (number of columns used in display)

A selection contains the following elements:

- Name
- Event
- Market

- Price (Decimal value, to 2 decimal places)
- Active (Either true or false)
- Outcome (Unsettled, Void, Lose, Place, Win)

Implement a system which manages multiple sports, events, markets, and selections.

System Requirements

- A sport may have multiple events
- An event may have multiple markets
- A market may have multiple selections
- When all the selections of a particular market are inactive, the market becomes inactive
- When all the markets of an event are inactive, the event becomes inactive
- When all the events of a sport are inactive, the sport becomes inactive
- Sports, events, markets, and selections need to be persistently stored
- A simple command-line application demonstrating the following functionalities:
 - Creating sports, events, markets or selections
 - Searching for sports, events, markets, or selections
 - The system should be able to combine **N** filters with an **AND** expression
 - Filters may be more or less complex
 - Updating sports, events, markets or selections
 - Deleting sports, events, markets, or selections

Examples of Filters:

- All (sports/events/markets) with a name satisfying a particular regex
- All (sports/events/markets) with a minimum number of active (events/markets/selections) higher than a threshold

NOTES:

- Please provide the **source code** for the solution (Code should be submitted via compressed attachment).
- Candidate should submit solution in their preferred development language.
- Solution should not depend on frameworks but on language features only.

