**Types of Cubes in IBM Planning Analytics**

1. **Regular Cubes**:
   * **Multi-Dimensional Cubes**: These are the standard cubes in Planning Analytics, designed to handle multiple dimensions (such as time, product, location, etc.). Data in these cubes is organized across these dimensions, allowing for complex, multi-faceted data analysis.
   * **Sparse Cubes**: When cubes have a large number of dimensions, many combinations may not contain data. Planning Analytics optimizes storage for these sparse cubes by only storing the data for existing combinations, reducing memory usage.
   * **Dense Cubes**: These cubes have a smaller number of dimensions with most of their cells populated. They generally require more memory and processing power but are quicker for data retrieval.
2. **Control Cubes**:
   * **System Control Cubes**: These cubes store system-related data and configuration settings, such as security settings, logging, and performance data. They are typically managed by administrators and are crucial for the internal functioning of the Planning Analytics environment.
   * **Application Control Cubes**: These cubes store application-specific configurations, such as workflow states, version control, and application settings. They are useful for managing the behavior of specific applications built within Planning Analytics.
3. **Virtual Cubes**:
   * These cubes are created through rules or TurboIntegrator (TI) processes to dynamically pull and aggregate data from other cubes. They do not physically store data but calculate it on the fly, providing a flexible way to create complex analytical views without duplicating data.

**Types of Views in IBM Planning Analytics**

1. **Default View**:
   * **Base View**: The initial view created when a cube is first set up. It typically includes all dimensions in their default state. Users often start with this view to build more customized perspectives.
2. **Private Views**:
   * **User-Specific Views**: Created and saved by individual users, these views allow users to customize how they see the data without affecting other users. Private views can include specific filters, sorting, and formatting that cater to the individual user’s needs.
3. **Public Views**:
   * **Shared Views**: These views are saved and shared across the organization. Public views are useful when a consistent view of data is required by multiple users, such as standardized reports or dashboards.
4. **Dynamic Views**:
   * **Subset and Calculation-Based Views**: These views are created dynamically using subsets (specific portions of a dimension) or calculations based on rules. They provide real-time data retrieval and are often used for performance-sensitive applications.
5. **MDX Views**:
   * **Custom Query-Based Views**: Created using Multi-Dimensional Expressions (MDX), these views allow for complex queries that can pull specific data across dimensions based on advanced filtering, aggregation, and calculation logic. MDX views are powerful for users who need to perform sophisticated data analysis.
6. **Zero-Suppressed Views**:
   * **Condensed Views**: These views exclude rows or columns with zero values, making the data easier to analyze by focusing only on populated cells. They are particularly useful in large, sparse cubes where much of the data might be empty.
7. **Drill-Through Views**:
   * **Detailed Views**: These are views that allow users to drill down from summarized data to more detailed data across dimensions. Drill-through views are essential for tracing high-level KPIs back to the underlying data.