## Decision Table to Decide Data Type for a Column

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **General Considerations** | | | | | | | | | | | | | | | | | | | |
| Must this Column always have data | | | | | | | | | | | | | Will this column seldom have data 20% - 40% empty | | | | | | |
| **Yes** 🡪 set to Null | | | | | **No** 🡪 Set to Allow Null | | | | | | | | **Yes** 🡪 set to Sparse | | | | | | **No** 🡪 Do not set to Sparse |
| **Type Considerations** | | | | | | | | | | | | | | | | | | | |
| **Text Data** | | | | | | | | | | | | | | | | | | | |
| Local Text | | International Text | | | | <= 20 characters or always fixed no of characters | | | | | > 20 characters < 8000 characters variable length | | | | | | | > 8000 characters variable length | |
| **Yes** 🡪Non Unicode | | **Yes** 🡪Unicode | | | | **Yes** 🡪 (n)char | | | | | **Yes** 🡪 (n)varchar | | | | | | | **Yes** 🡪(n)varchar(max) | |
| **Numeric Data** | | | | | | | | | | | | | | | | | | | |
| Money Data | | | | | | | | | | | | | | | | | | | |
| < +/- 214,748.3648 | | | | | | | | | | >+/- 922,337,203,685,477.5807 | | | | | | | | | |
| Smallmoney | | | | | | | | | | Money | | | | | | | | | |
| **Whole Number Data** | | | | | | | | | | | | | | | | | | | |
| **0 to 255** | | | | **+/- 32,767** | | | | | **+/- 2,147,483,647** | | | | | | **+/- 9,223,372,036,854,775,807** | | | | |
| Tinyint | | | | Smallint | | | | | Int | | | | | | Bigint | | | | |
| **Decimal Data** | | | | | | | | | | | | | | | | | | | |
| Scientific Data | | | | | | | | | | Precise data | | | | | | | | | |
| float | | | | Real | | | | | | Decimal | | | | | | Numeric | | | |
| **Date Time Data** | | | | | | | | | | | | | | | | | | | |
| 0001-01-01 through 9999-12-32 | | | | | | | 24 hour clock | | | Date and time | | | | | | Time zone aware | | | |
| Date | | | | | | | Time | | | Datetime2 | | | | | | Datetimeoffset | | | |
| **Special Types** | | | | | | | | | | | | | | | | | | | |
| True or false | Xml | | x,y co-ordinates flat earth | | | | | x,y co-ordinates globe | | | | Picture | | Tree structure | | | Miscellaneous | | |
| Bit | Xml | | Geometry | | | | | Geography | | | | Image | | Hyerarchid | | | cursor, timestamp, table, sql\_variant | | |