Fundamentals of Data Management

2019HS2 | 101624964 | Jimmy Trac

Past Task 3.1.2

Consider the following table

Training

P_Code	P_Name	Instructor	Term	Duration (Hrs)	Hourly_Rate	Room_NO
P1	Visual Basic	Dennis	15-1	7	20	A1
P1	Visual Basic	Dennis	15-2	7	30	A2
P2	SQL	Jason	15-1	4	10	A4
P2	SQL	Jason	15-2	4	20	A5
P3	C++	Joseph	15-1	5	30	A3
P3	C++	Joseph	15-2	5	20	A7
P4	Java	Rys	15-2	6	10	A9

Identify the most suitable primary key for the table above and explain how this key uniquely defines all other attributes.

The most suitable primary key would be `P_Code` and `Term` for the following reasons:

- `P_Code` relates directly to the name of the programming language, and therefore can be used in the place of the Programming Language Name
  - This also means it would be faster to match `P1` over `Visual Basic` as string-matching compares each character individually
  - `P_Code` is also more concise and allows the `P_Name` to contain any alphanumeric character that may otherwise cause confusion such as ` ` (whitespace) or special characters `#, +`
- `P_Code` directly relates to the intended task -- each tuple represents a class, and therefore does not change compared to the other attributes, such as instructors (as they can be changed with another). Attributes such as Term and Duration are also in the same vein.
- However, `P_Code` is not unique and it can appear more than once, hence, using a **composite** key will allow for better integrity as each `P_Code+Term` is unique.