**Problem Statement**

To build a regression model to predict the concrete compressive strength based on the different features in the training data.

**Data Description**

Given is the variable name, variable type, the measurement unit and a brief description.

The concrete compressive strength is the regression problem. The order of this listing

corresponds to the order of numerals along the rows of the database.

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| --- | --- | --- | --- |
| Name | Data Type | Measurement | Description |
| Cement (component 1) | quantitative | kg in a m3 mixture | Input Variable |
| Blast Furnace Slag (component 2) | quantitative | kg in a m3 mixture | Input Variable-- Blast furnace slag is a nonmetallic coproduct produced in the process. It consists primarily of silicates, aluminosilicates, and calcium-alumina-silicates |
| Fly Ash (component 3) | quantitative | kg in a m3 mixture | Input Variable- it is a [coal combustion product](https://en.wikipedia.org/wiki/Coal_combustion_product) that is composed of the [particulates](https://en.wikipedia.org/wiki/Particulates) (fine particles of burned fuel) that are driven out of coal-fired [boilers](https://en.wikipedia.org/wiki/Boiler) together with the [flue gases](https://en.wikipedia.org/wiki/Flue_gas). |
| Water (component 4) | quantitative | kg in a m3 mixture | Input Variable |
| Superplasticizer (component 5) | quantitative | kg in a m3 mixture | Input Variable--Superplasticizers (SP's), also known as high range water reducers, are additives used in making high strength concrete. Their addition to [concrete](https://en.wikipedia.org/wiki/Concrete) or [mortar](https://en.wikipedia.org/wiki/Mortar_(masonry)) allows the reduction of the water to cement ratio without negatively affecting the [workability](https://en.wikipedia.org/wiki/Workability) of the mixture, and enables the production of [self-consolidating concrete](https://en.wikipedia.org/wiki/Self-consolidating_concrete) and high performance concrete |
| Coarse Aggregate (component 6) | quantitative | kg in a m3 mixture | Input Variable-- construction aggregate, or simply "[aggregate](https://en.wikipedia.org/wiki/Aggregate_(composite))", is a broad category of coarse to medium grained particulate material used in [construction](https://en.wikipedia.org/wiki/Construction), including [sand](https://en.wikipedia.org/wiki/Sand), [gravel](https://en.wikipedia.org/wiki/Gravel), [crushed stone](https://en.wikipedia.org/wiki/Crushed_stone), [slag](https://en.wikipedia.org/wiki/Slag), recycled concrete and geosynthetic aggregates |
| Fine Aggregate (component 7) | quantitative | kg in a m3 mixture | Input Variable—Similar to coarse aggregate, the constitution is much finer. |
| Age | quantitative | Day (1~365) | Input Variable |
| Concrete compressive strength | quantitative | MPa | Output Variable |