

Model Development Phase Template

Date	11 July 2024
Team ID	SWTID1720160264
Project Title	Predicting Compressive Strength Of Concrete Using Machine Learning
Maximum Marks	5 Marks

Feature Selection Report Template

Each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

Feature	Description	Selected (Yes/No)	Reasoning
Cement	Primary Binder and Strength Contributor	Yes	It significantly influences the material's overall strength and durability. Its chemical properties directly impact the hydration process
Blast Furnace Slag	Cement substitute, Industrial byproduct	Yes	Its inclusion can improve long-term strength and reduce permeability, contributing to more sustainable construction practices.
Fly ash	Coal byproduct	Yes	Its ability to improve concrete workability and increase long-term strength while reducing the heat of hydration.

Water	Mixing agent, Hydration catalyst	Yes	It initiates the chemical reaction (hydration) necessary for cement to bind the aggregates, forming concrete. Its amount directly affects the workability, strength, and durability of the concrete mix.
Superplasticizer	Flow enhancer	Yes	It is selected to significantly improve the workability of concrete without increasing the water content, allowing for easier placement and compaction. It also helps achieve high-strength concrete by reducing the water-cement ratio.
Coarse aggregate	Large particles, Structural filler	Yes	It is selected for its role in providing compressive strength and bulk to the concrete, improving its structural integrity. It also reduces shrinkage and increases the concrete's durability.
Fine aggregate	Small particles, Filler material	Yes	It is selected to fill voids between coarse aggregates, providing a smooth finish and improving the workability of the concrete mix. It also contributes to the overall strength and durability of the concrete.
Age	Curing time, Strength development	Yes	It is selected because it represents the time elapsed since the concrete was cast, which directly influences its compressive strength. Longer curing times allow for continued hydration and increased strength over time.

