

## Model Development Phase Template

Date	10 July 2024
Team ID	740004
Project Title	Rising Waters: Machine Learning Approach To Flood Prediction
Maximum Marks	5 Marks

## Feature Selection Report Template

In the forthcoming update, 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
Temp	Measures the temperature of the air.	Yes	Temperature variations can affect the rate of evaporation and precipitation, which are crucial factors in flood prediction.
Humidity	Represents the amount of water vapor in the air.	Yes	High humidity levels can indicate the likelihood of heavy rainfall, which is a critical factor in flooding.
Cloud Cover	Measures the fraction of the sky covered by clouds.	Yes	Cloud cover can be indicative of impending weather conditions such as storms, which are significant in predicting floods.

Rainfall	Amount of rain that falls over a given period.	Yes	Directly influences the likelihood of floods; higher rainfall increases the risk of rising water levels.
Soil Moisture	Amount of moisture present in the soil.	Yes	High soil moisture can reduce the ground's ability to absorb additional rainfall, increasing runoff and flood risk.
Wind Speed	Measures the speed of the wind.	No	While wind speed can influence weather patterns, it is less directly correlated with flooding compared to other features like rainfall and river levels.
Precipitation	Total precipitation, including rain, snow, sleet, and hail.	Yes	Like rainfall, total precipitation is critical in assessing the potential for floods.
Urbanization	Percentage of land covered by urban infrastructure.	Yes	Urban areas with impermeable surfaces can lead to increased runoff and higher flood risk.
Vegetation	Type and density of vegetation cover.	No	While vegetation can affect runoff and soil absorption, its impact is more indirect compared to other features like rainfall and soil moisture.
Groundwater Levels	Measures the level of water present in underground aquifers.	Yes	Rising groundwater levels can contribute to surface flooding, especially in low-lying areas.
Drainage Density	Length of all the streams and rivers in a drainage basin divided by the area of the basin.	Yes	High drainage density can indicate a higher potential for flooding as water is collected and channeled more quickly through the drainage network.

Pus cell clumps	Pus cell clumps, also known as white blood cell (WBC) clumps, are aggregations of white blood cells typically seen in the urine.	No	The above we get the required, so we don't need to consider this.
Bacteria	Bacteria in the urine, also known as bacteriuria, is a common finding that can indicate a urinary tract infection (UTI) or other urinary system issues.	No	The above we get the required, so we don't need to consider this.
Sugar	Sugar, specifically glucose, in the urine (glycosuria) can be an important diagnostic marker.	No	The above we get the required, so we don't need to consider this.
Blood urea	Urea is a waste product formed in the liver as a result of protein metabolism and is normally excreted by the kidneys.	No	The above we get the required, so we don't need to consider this.
Serum Creatinine	It is a waste product produced from the normal metabolism of muscle cells and is usually excreted by the kidneys.	No	The above we get the required, so we don't need to consider this.
Sodium	Sodium is an essential electrolyte that plays several crucial role.	No	The above we get the required, so we don't need to consider this.
Potassium	Potassium is a vital mineral and electrolyte in the human body.	No	The above we get the required, so we don't need to consider this.

Hemoglobin	Hemoglobin is a protein in red blood cells responsible for transporting oxygen from the lungs to the rest of the body and returning carbon dioxide from the tissues back to the lungs.	No	The above we get the required, so we don't need to consider this.
Packed cell volume	Packed Cell Volume (PCV), also known as Hematocrit, is a medical laboratory measurement that indicates the proportion of blood that is made up of red blood cells.	No	The above we get the required, so we don't need to consider this.
White blood cell count	White Blood Cell Count (WBC) measures the number of white blood cells in a given volume of blood.	No	The above we get the required, so we don't need to consider this.
Red blood cell count	Red Blood Cell Count (RBC) measures the number of red blood cells in a given volume of blood.	No	The above we get the required, so we don't need to consider this.
Hypertension	Hypertension, or high blood pressure, is a chronic medical condition where the force of the blood against the artery walls is consistently too high.	No	The above we get the required, so we don't need to consider this.
Appetite	Appetite refers to the natural desire to eat food.	No	The above we get the required, so we don't need to consider this.

Pedal edema	Pedal Edema refers to the swelling of the feet and ankles due to the accumulation of fluid in the tissues.	No	The above we get the required, so we don't need to consider this.
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