Model Development Phase Template

Date	9 July 2024
Team ID	SWTID1720096271
Project Title	Machine learning approach for Predicting the price of natural gas
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

Price_lag1	The price one day before.	Yes	Captures the immediate past value of the price, which can be useful in predicting the next day's price.
			
			 ```#feature engineering```
			```# Create lagged features```
			```data['Price_lag1'] = data['Price'].shift(1)```
			```data['Price_lag7'] = data['Price'].shift(7)```

Price_lag7	The price seven days before.	Yes	Captures weekly patterns and trends in the data, providing a longer-term perspective.
			
			 ```#feature engineering```
			```# Create lagged features```
			```data['Price_lag1'] = data['Price'].shift(1)```
			```data['Price_lag7'] = data['Price'].shift(7)```

Price_rolling_mean7	The 7-day rolling mean of the price.	Yes	Helps smooth out short-term fluctuations and highlight longer-term trends.
			
			``python
			# Create rolling mean features
			data['Price_rolling_mean7'] = data['Price'].rolling(window=7).mean()
			``

Date	The original date of the observation.	No	The date itself is not predictive of the price; the temporal aspect is captured through lagged and rolling features.
Price_rolling_mean30	The 30-day rolling mean of the price.	No	While longer-term trends are valuable, a 30-day window might be too long for short-term price prediction.