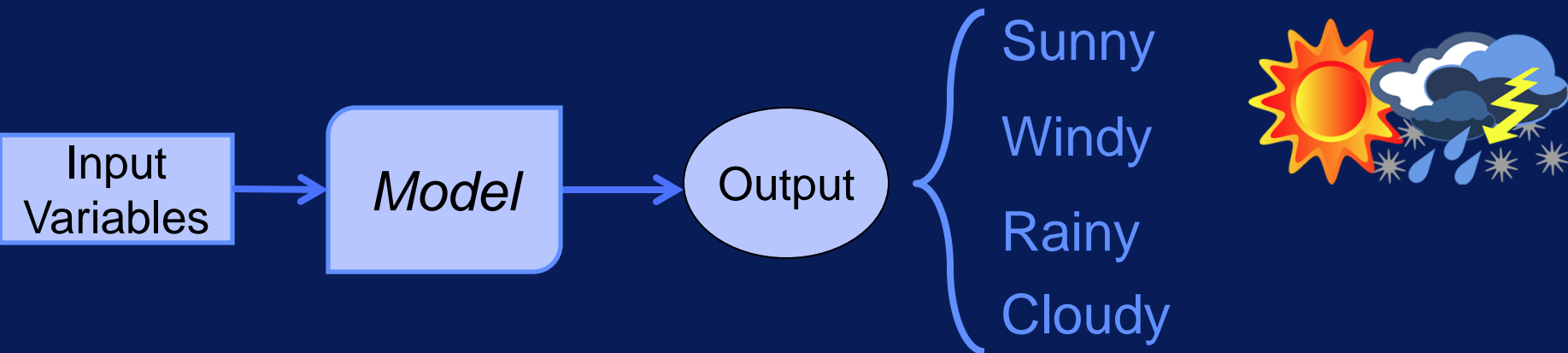


# Regression

# After this video you will be able to..

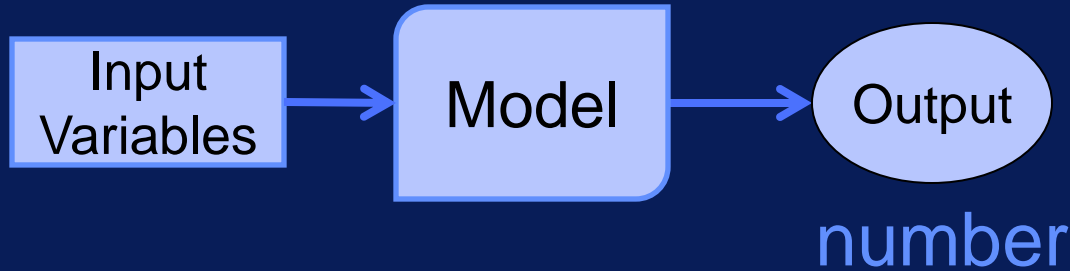
- Define what regression is
- Explain the difference between regression and classification
- Name some applications of regression

# Classification Review



Classification:  
Given input variables,  
predict category

# Regression



Regression:  
Given input variables,  
predict numeric value

# Regression Examples

- **Forecast** high temperature for next day
- **Estimate** average house price for a region
- **Determine** demand for a new product
- **Predict** power usage

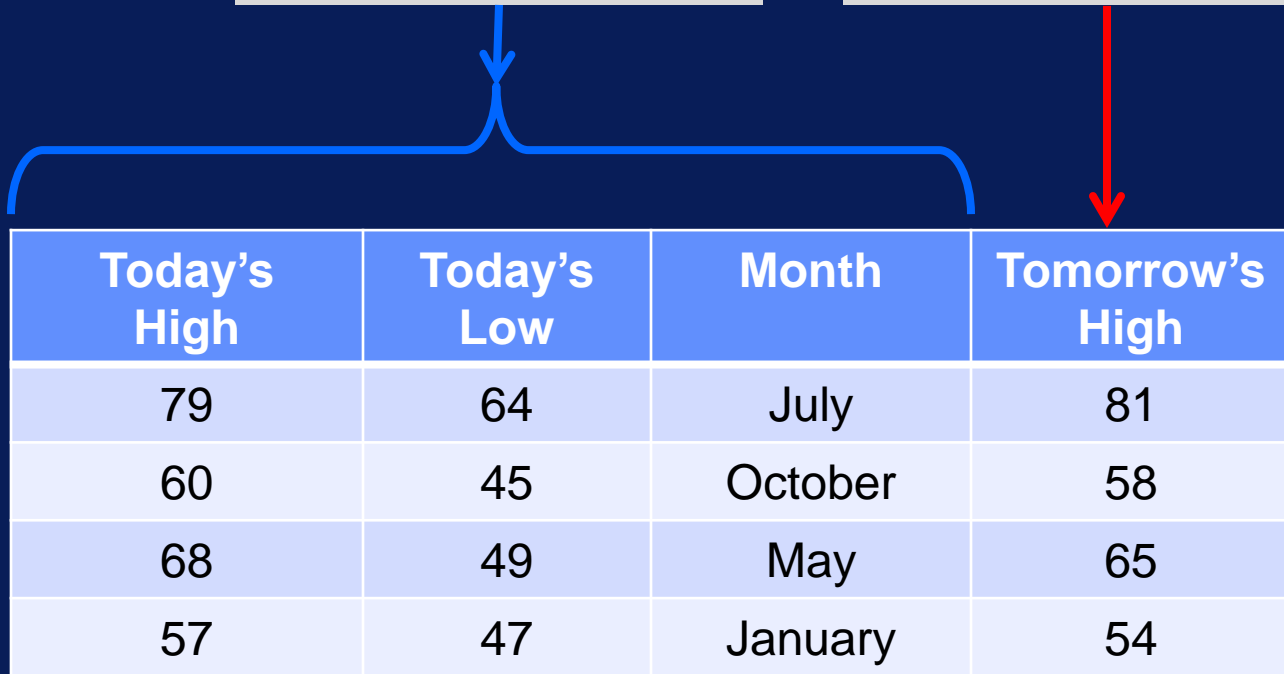


# Regression is Supervised

**Input Variables**

**Target Variable**

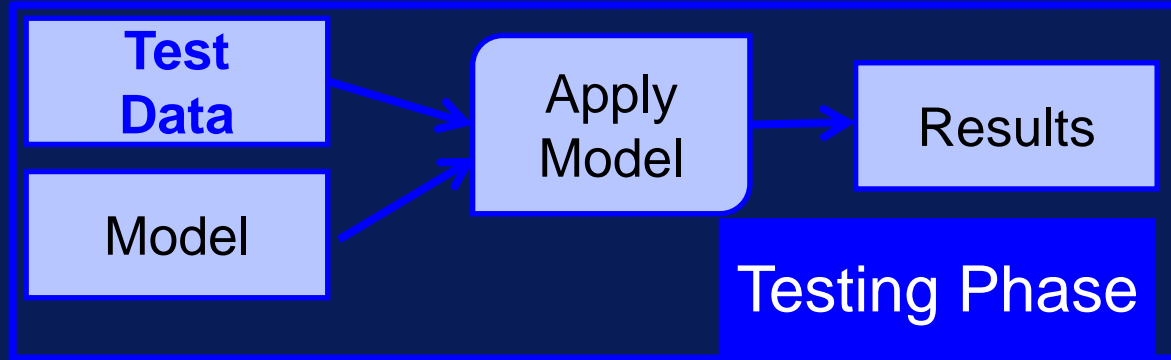
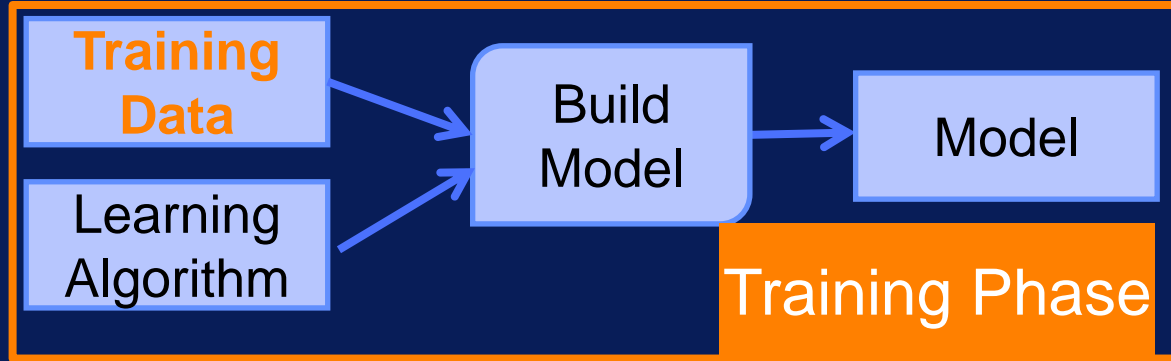
Target is  
provided



The diagram illustrates a supervised regression model. A blue bracket groups the first three columns of the table as 'Input Variables'. A red arrow points from the 'Target Variable' label to the fourth column, 'Tomorrow's High'. The text 'Target is provided' is written in yellow to the right of the table.

Today's High	Today's Low	Month	Tomorrow's High
79	64	July	81
60	45	October	58
68	49	May	65
57	47	January	54

# Training vs. Testing Phases



# Datasets

**Training  
Data**

Adjust model  
parameters

**Validation  
Data**

Determine  
when to stop  
training (avoid  
overfitting)

Estimate  
generalization  
performance

**Test  
Data**

Evaluate  
performance  
on new data



# Regression Main Points

- Predict number from input variables
- Regression is a supervised task
- Target variable is numerical

