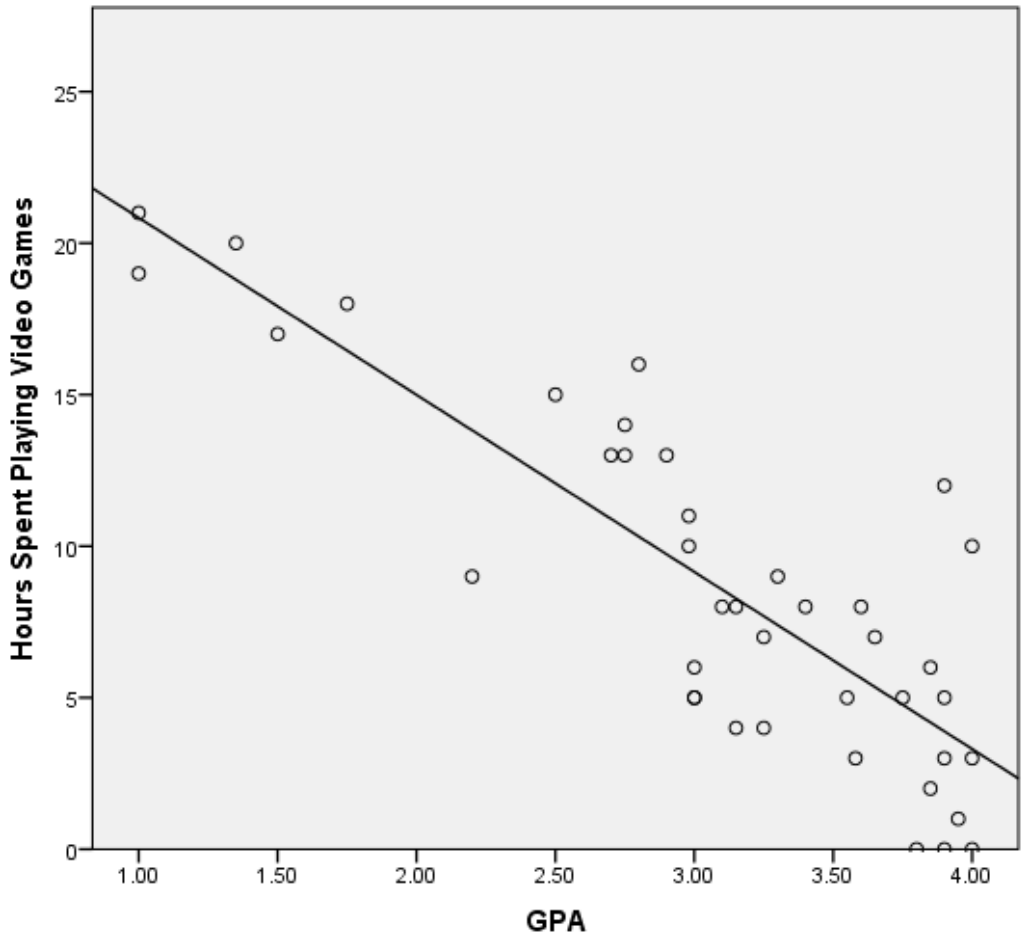
Regression (Supervised)

The goal of regression is to predicting continuous-valued feature associated with a sample.

Continuous-valued meaning small small changes in the input result in small changes in the output. Imagine hiking from Portland, OR to Seattle, WA. As time progresses, your distance from Portland increases and your distance to Seattle decreases. Even though you stop for meals and to rest, these distance values transition smoothly. Throughout the course of your hiking, there is never an instance where you were 100 miles to Seattle and then at the next instance of time, you magically are *teleported* 75 miles to Seattle. Rather, you incrementally made you way over piecemeal. With regression, you want to model a mathematic relationship for your samples so that as you gently alter one feature, another feature responds by being altered as well.



More Examples

- Calculate an equation to predict the size of a house given its price; or alternatively, the price of a house given its size.
- Explore if a correlation exists between hours a student spends studying, spends watching TV, and their final exam score.
- Estimate how many power plants need to be built in the next 50 years, based upon the historical

energy consumption per household.

- Figure out how many days a person has left to live based on the severity of their symptoms.

Regression falls into the realm of supervised learning because in order for it to work, you have to provide the computer with samples. It then attempts to fit an equation to samples' features.