03. Lay the foundation of MI - numerical predict

03-1. Inqure about Linear regresstion , prepare data

* Linear regression is basic of deep learning (regression algorithm : nomal equation, decide tree, support vector machine )

1. Fution to understand Linear regression. (Linear function)
   * y=ax+b
   * We can make model through a,b(data set)
   * Y\_hat=wx+b-> input data of x through we can predict y(y\_hat)
   * But this model need to increase accuracy.
   * When we prepare (diabetes)data 'data','target'properity is saved numpy array.
   * Each other size check -> numpy arrary size check fuction that shape
   * data properity: 2Darray row: sample col: characteristic of sample
   * Target propertity: row: same row of data col:one
   * One sample data is one target but numerical analysis do work exporter

03-2. modeling to maked gradient descent

* Modeling through Exsiting data and then predict value about new input data and model update
  1. High accuracy model through Predict value
     1. w and b reset reandomly (Initial rules need)
     2. x[0] input then y\_hat value derive.
     3. Modulate w value
        + w\_inc=w+0.1
        + X[0] input theny \_hat\_inc derive
     4. y\_hat spare y\_hate\_spare then derive w\_rate=> w\_rate=x[0]
     5. **Problem: when w\_rate is statement plus, minus How disitinguish?**

**>> No problem. w\_inc=w+w\_rate(x[0])**

1. Update w,b with changerate
   * w\_new=w+w\_rate
   * b\_new=b+1.0
   * Problem
     1. Y\_hat>y :y\_hat don't decrease.
     2. When y\_hat and y value is a big difference, w,b value don't revised(Because don't have stand of rate)

>> This way is passive

>> Let's look'오차 역전파'to actively update

1. Rate More appropriaty upgrade Used '오차 역전파'