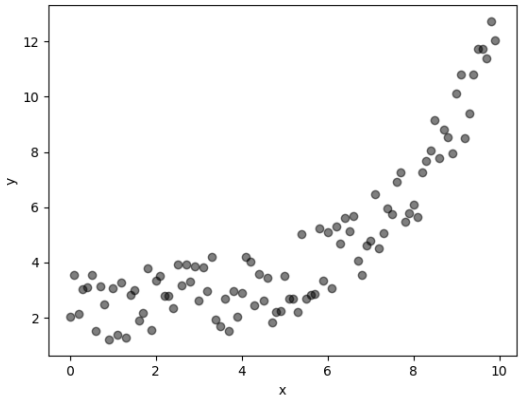
Homework1

Give the training set $T = \{(x_i, y_i)\}$, $0 \leq i \leq 99$. Please use the nonlinear model $y = \alpha e^{\beta x}$ to find the regression parameter α and β which minimize the prediction error.



Basic Requirement

1. You must use **linear regression** to solve the nonlinear model.
2. You must use **variable transformation** (On the other hand, You need to create some variables which aren't in the regression model).
3. Find the **original regression parameter α and β.**
4. **Draw the training set points with black color and draw nonlinear model with the α and β you found with red color.**

Program Requirement

1. If you use some program libraries which contain the algorithm logic about the homework, your score will be a lower than others.
2. Please attaching a readme.doc file which describes the progam langauge you used, e.g. the name, the version, the enviroment, the IDE etc.

Attaching .zip file

1. The program file (if more than one, put them in a folder).
2. A readme.doc file which describes the progam langauge you used.
3. A homework1.doc file which must contain the program execution screenshot and a simple description of your implementation.
4. A picture with the training set points with black color and draw nonlinear model with the α and β you found with red color.
5. Compress above 4 items into a ZIP file using the same name as your student NO. Upload this compressed file to Moodle.

Resource

The training set is attached on moodle. Its file name is **hw1_data.csv**. The first column represents x_i. The second column represents y_i. The first row is the name of each column.

Notice

The score is based on the degree of your program implementation which written by yourself.