

(2, 5), (3, 8), (5, 10), (4, 11), (6, 14).

Question: If the stocks are affected by the same industry trends, will their prices rise or fall together?

3 Data Transformation

3.1 Min-max normalization

Χρησιμοποιώντας τη Min-max normalization, κανονικοποιείστε τα δεδομένα από το αρχικό εύρος τιμών 30-50 στο τελικό εύρος τιμών 0-1.

4 Data compression

4.1 Huffman compression

X	p(X)
a	0.171
b	0.031
c	0.057
d	0.092
e	0.274
f	0.052
g	0.042
h	0.130
i	0.149
l	0.002

5 Outlier detection

5.1. Παράδειγμα ανίχνευσης outliers με Grubbs' Test για τα δεδομένα
=[10, 15, 30, 22, 16, 74]

$$Z = \frac{|mean - Value|}{\sigma} \rightarrow \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$$

Critical values for Z. Look up the critical value of Z in the table below, where N is the number of values in the group. If your value of Z is higher than the tabulated value, the P value is less than 0.05.

N	Critical Z
3	1.15
4	1.48
5	1.71
6	1.89
7	2.02
8	2.13
9	2.21

2. Παράδειγμα ανίχνευσης outliers με box plot

The data set of $N = 90$ ordered observations as shown below is examined for outliers:

30, 171, 184, 201, 212, 250, 265, 270, 272, 289, 305, 306, 322, 322, 336, 346, 351, 370, 390, 404, 409, 411, 436, 437, 439, 441, 444, 448, 451, 453, 470, 480, 482, 487, 494, 495, 499, 503, 514, 521, 522, 527, 548, 550, 559, 560, 570, 572, 574, 578, 585, 592, 592, 607, 616, 618, 621, 629, 637, 638, 640, 656, 668, 707, 709, 719, 737, 739, 752, 758, 766, 792, 792, 794, 802, 818, 830, 832, 843, 858, 860, 869, 918, 925, 953, 991, 1000, 1005, 1068, 1441