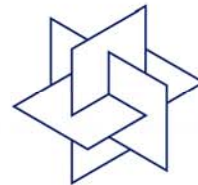


Real World Data

CO@Work Berlin

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DFG Research Center MATHEON
Mathematics for key technologies



Task: Collecting Data for the Optimal Seat Allocation

- ▶ We want to compute the optimal seat allocation for the lecture hall.
- ▶ To do this we need your preferences.
- ▶ Everyone should send me an email with a data file.
- ▶ We will see how long it will take.

- ▶ ASCII text with only a LF (ASCII 10) as line separator.
- ▶ Fields are separated by a single space (ASCII 32)
- ▶ Line 1: **ParticipantNo HasLaptop EmailAddress**
e.g. `67 1 koch@zib.de`
0 = has no Laptop, 1 = has a Laptop
- ▶ Lines 2-???: **SeatNumber PreferenceValue**
 - ▶ Seat numbers start down at the low entrance, left to right, row by row.
 - ▶ The highest numbered seat is at the window side at the top.
 - ▶ Count only seats that are physically there.
 - ▶ The seat numbers in the file should be monotonically increasing.
 - ▶ The preference values should be between 0 and 100.

e.g. `12 55`
`13 40`
`14 35 ...`

Rules Regarding Preference Values

- ▶ Allowed values are between 0 and 100
- ▶ Only seats which are not available for the participants are allowed to get a value of 0
- ▶ All numbers 1-100 have to be used at least once
- ▶ The average has to be between 40-60
- ▶ The difference to an adjacent seat has to be < 40
- ▶ The difference to a neighboring seat has to be < 20
- ▶ The data should not be randomly generated

Specifying Preference Offsets

- ▶ Lines ???-???: **ParticipantNo PreferenceOffset**

List indicating persons which you would like or not like to be your seat neighbor. (You have to know the ParticipantNo of the person.)

- ▶ A ParticipantNo of 0 indicates an empty seat.
- ▶ The PreferenceOffset is between -20 and 20 and will be added to your PreferenceValue if the person with the given ParticipantNo is your neighbor.

e.g. 55 17
 27 -5
 72 8
 0 -10 ...

- ▶ This list can have as many entries as you like, but there should be at least 2 entries, and the occurring participant numbers have to be unique and valid.

How To Submit

- ▶ **Submission of this file is required for the course**
- ▶ The name of the file has to be *ParticipantNo.txt*
- ▶ It should be attached to an email
- ▶ Send the email to koch@zib.de
- ▶ The subject of the email should be *CO@Work: SeatData for ParticipantNo*
- ▶ *Please, as soon as possible.*

2 Days after the lecture

- ▶ Mails received : 13
- ▶ Different Subjects : 4 (10 1 1 1)
- ▶ Wrong field spacing : 4
- ▶ Seat counts : 2 (12 1)
- ▶ Missing data : 1
- ▶ Too much data : 1
- ▶ Ok, from first view : 5 out of 13

3 Days after the lecture

- ▶ Mails received : 23
- ▶ Different Subjects : 6 (17 2 1 1 1 1)
- ▶ Wrong field spacing : 4
- ▶ Seat counts : 4 (19 1 1)
- ▶ Missing data : 2
- ▶ Too much data : 0
- ▶ Ok, from first view : 10
- ▶ Corrected : 1

Add to the specification:

- ▶ A seat without a desk is not allowed for the participants
- ▶ Seats with a 0 preference value are not relevant for the adjacency/neighbors difference rules.

4 Days after the lecture

- ▶ Mails received : 37
- ▶ Wrong subject : 11
- ▶ Wrong field spacing : 8
- ▶ Strange seat counts : 5
- ▶ Missing data : 2
- ▶ Corrected : 3