Real World Data

CO@Work Berlin

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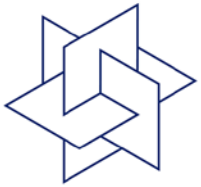

DFG Research Center MATHEON
Mathematics for key technologies

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.

File Format

- 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 hightest 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/neighboring difference rules.