Worksheet for Session 11

1. Birthdays

Show and explain your solution to your partner. How did you arrive to your solution? Discuss and write below: what are the biggest differences in your solutions?

Do your programs work correctly? Test your programs exhaustively. Try to find a test case where the program doesn’t work correctly. Do your programs work, for example, if the birthday is on a leap year or if the birthday falls on February 29th or if the birthday lays far in the past or far in the future? Write below what tests you performed to check the correctness of your programs. Find out the reasons of errors and correct them.

Modify and improve

1. Modify your program so that it prints out the weekday that has the most number of birthdays. Here is a larger file for testing: https://courses.cs.ut.ee/SVNC.00.054/2018_fall/uploads/Main/birthdays.txt

2. Modify your program so that it outputs together with numbers of people also the percentages of people who have been born on each weekday, in decreasing order. If the birthdays are random, each percentage should be ≈ 1/7 * 100%.

3. Python module Matplotlib allows to create graphs and diagrams from data (https://matplotlib.org/tutorials/introductory/pyplot.html). Add a possibility to your program to show the graph of the numbers of people who have been born on each weekday. Is the birthday distribution really completely random?
2. Dictionary

Explain your solutions to each other. What was the most difficult issue that you had to solve while writing the program at home? How did you solve that issue?

Test your programs exhaustively. Find out the reasons of errors and correct them. Write below what did you correct in your programs.

Does each of you think that the code of your partner's program is easily understandable? How does your partner rate the structure of code, names of variables, commenting of the code etc?

Modify and improve

Add to your program the possibility to test the user on words in the dictionary. The program chooses random word from the dictionary, prints it out and asks the user to enter its translation. If the user enters the translation correctly, then the program gives the user 1 point, otherwise it takes away 1 point. Then it chooses next random word. When the user gets 10 points, he wins. When the use has −10 points, he dies.

When you are finished with the worksheet, please start solving the problems at https://courses.cs.ut.ee/2018/nkp/fall/Main/During11