Data:

X – number of letters in the surname
Y – number of letters in the name

take-off mass (m_{TO}) = (X+Y)*150 kg
wing span = 10+0.5*SQR((X-Y)^2)
wing area = 10+(X+Y)/5
taper ratio = 0.95*Y/(X+Y)
C_{L_max} = 1.4+(X+Y)/100
air density ρ = 1.225 kg/m^3
gravity acceleration g = 9.81 m/s^2

To be computed:

- Airplane parameters:
  - Minimum airspeed
  - Wing aspect ratio
  - Wing chords:
    - root chord,
    - tip chord,
    - mean geometric chord,
    - mean aerodynamic chord.

- lift coefficient distribution C_z (Schrenk's distribution) for **lift coefficient equal to 1** (divide wing in 4 slices) – attention - it must be lift coefficient distribution, not lift force!

- estimate max. value of bending moment and shearing force in the root (cantilever wing), assuming max. load factor n=7 (neglect mass of the wing)

- compute bending moment and shearing force distribution for n=1, assuming that wing mass is equal to 15% m_{TO} and is distributed according to the wing area. First two segments contain fuel tanks. Their mass with fuel is equal to 15% m_{TO} and is distributed also according to the wing area. Moreover there is additional fuel tank at the wingtip. It contains 100 kg of fuel.