6. Session no. 6

Learning goals: Continue with the previous week's learning goals

1. Write a function that computes the factorial of a number and check your function in a program.

2. Write a function to check whether a year is a leap year and check your function in a program.

3. Write a program to play the game stone-paper-scissors. The program should generate a random value and ask the user for his or her choice. Declare as winner who first has won three rounds.

4. Write a program with functions that finds the roots of a polynomial of degree 2 ($ax^2 + bx + c = 0$). Asks the user for the coefficients as floating point numbers.

5. Write a program that uses a function to convert polar coordinates to rectangular coordinates.

6. Write a program that uses functions to convert cylindric coordinates to rectangular coordinates and the other way round. Use your functions to check whether your implementation is correct, as we have

$$cyl2rec(rec2cyl(x, y, z)) = (x, y, z)$$

don't we?