Setup

This note only applies if you use the JaCoP solver. Make sure JaCoP is correctly set up. Earlier years several students have had long search times in assignment 4 (If you have, test with the Gecode solver). This is likely due to an incorrect configuration of JaCoP. During the JaCoP installation you downloaded minizink.zip. This zip file contains a directory called jacop. This is where minizincs "Solver library path" most refer to. If you unzip minizink.zip i a directory called Jacop, "Solver library path" should end with "Jacop/jacop" (make sure the "Solver library path" contains several .mzn files)

Assignment

The data-flow graph for the auto regression filter is depicted on the figure bellow. It consists of 16 multiplications and 12 additions. These operations need to be scheduled on multipliers and adders. Write a program which will optimize the schedule length for different amount of resources as specified in the table bellow. Each node must be assigned both a start time and a resource, i.e. which adder/multiplier. Fill the table with results obtained from your program. Assume that multiplication takes two clock cycles and addition only one, but write your program in such a way that you can easily specify otherwise. Make your program data independent, that is generate the constraints from the data input file. Do not hardwire the graph in the figure bellow into your .mzn file.

Task 1: Write a program to solve the scheduling and allocation problem described above. Fill the table. Optimal means that you have proved that there do not exist a shorter schedule.