Algorithm: Newton's divided difference method for polynomial fitting

Input : $n+1$ data points (x_i,y_i), i=0, 1, 2,..., n
Output: Divided differences $f_{i,i}$, i=0, 1, 2,..., n

for $i \leftarrow 0$ **to** n **do**
  $f_{i,0} = y_i$
end
for $i \leftarrow 0$ **to** n **do**
  for $j \leftarrow 0$ **to** i **do**
    $f_{i,j} = \frac{F_{i,j-1} - F_{i-1,j-1}}{x_i - x_{i-j}}$
  end
end
output($f_{i,i}$, i=0, 1, 2,..., n)