# Algorithm: Newton's Backward Interpolation

- Read n

// Read elements
- For i = 0 to (n-1) in steps of 1 do
  - Read $x_{arr[i]}$, $y_{arr[i]}$

  End for

// Create Backward difference table
- For j = o to (n-2) in steps of 1 do
  - For j = 0 to (n-j-2) in steps of 1 do
    - If (j == 0) then
      - d[i][j] = $y_{arr[i+1]} - y_{arr[i]}$

      Else
      - d[i][j] = $d[i+1][j-1] - d[i][j-1]$

      End if

    End for

  End for

// Backward Interpolation Formula
- Read x
- Set h = $x_{arr[1]} - x_{arr[0]}$
- Set u = $\left(x - \frac{x_{arr[n-1]}}{h}\right)$
- Set result = $y_{arr[n-1]}$
- For i = 0 to (n-2) in steps of 1 do
  - $result \mathrel{+}= \left(\frac{num(u,i)}{fac(i+1)}\right) * d[n-2-i][i]$

  End for
- Print result

  END

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