POO

1966 → BCPL

1967 → SIMULA : La 1ère langage de programmation POO

1969 → Language B

1978 → K & R C "The C programming language" => UNIX

1989 → C 89

1980 → C++

1985 → C++ + inline + Strong typing + Argument défaut

1998 → ISO C++ 98

2003 → C++ 03

2011 → C++ 11

2014 → C++ 14

2017 → C++ 17

2020 → C++ 20

2023 → C++ 23

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16 - 10 - 2024 TAS // SAP Cours

- Filter design and implementation

Filter structure :

- The filtering equation in time-space :

$$\boxed{y(n) = h(n) * x(n)}$$

$$\boxed{y(n) = \sum_{i=-\infty}^{+\infty} h(i)\, x(n-i)}$$

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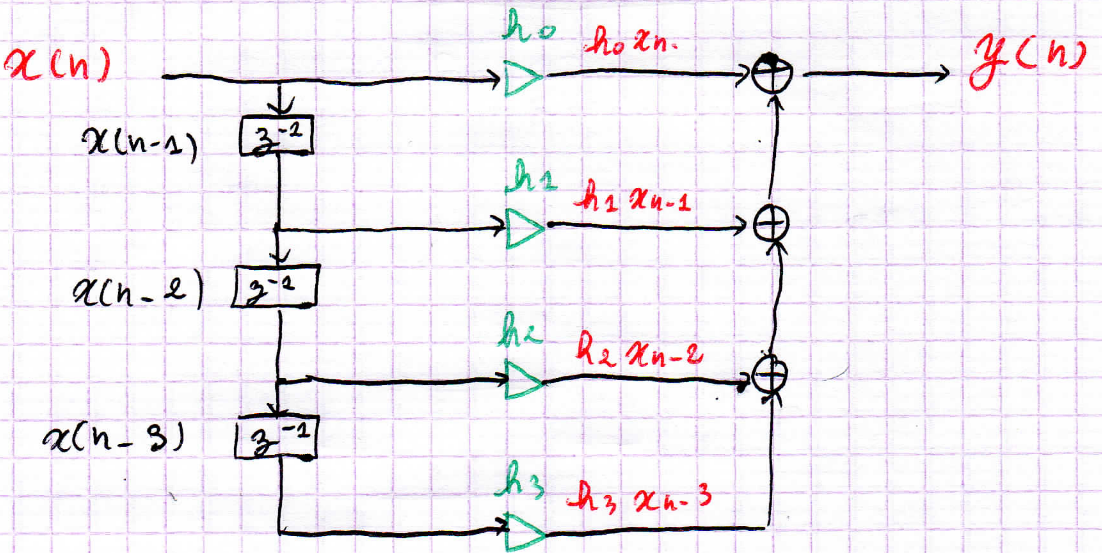
=> In practice we have to truncate

$$\boxed{y(n) = \sum_{i=0}^{P-1} h(i)\, x(n-i)}$$

- Since P is finit, then the filter will be called ("FIR") Finite Impuls response

if $P = 4$ then $\quad y(n) = h_0(x(n)) + h_1 x(n-1) + h_2 (x(n-2)) + h_3\, x(n-3)$



~~Recalling ZT~~

$\cancel{x(n) \xrightarrow{Z} X(z) = \sum x}$

$x(n) \to \boxed{H} \to y(n)$

$$H(z) = \frac{Y(z)}{X(z)}$$

$x(n) \to x(n-n_0)$

$X(z) \to z^{-n_0} X(z) = Z[x(n-n_0)]$

for a ~~sys~~ systeme where

$x_n \to \boxed{z^{-1}} \to x_{n-1} \qquad H(z) = \dfrac{z^{-1}(\cancel{X(z)})}{\cancel{X(z)}} = z^{-1}$