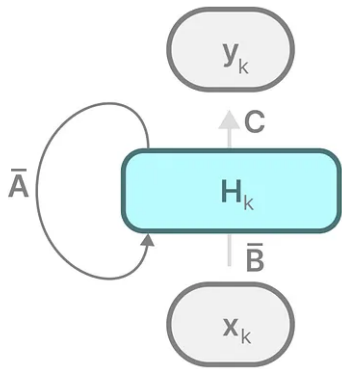
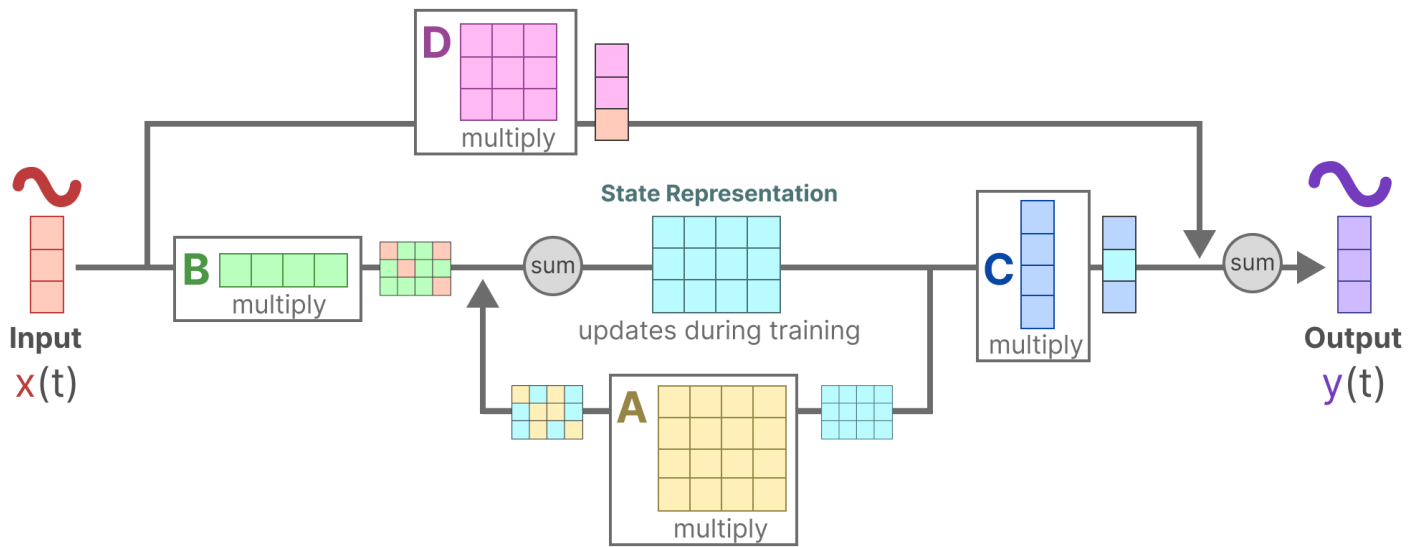


# Mamba

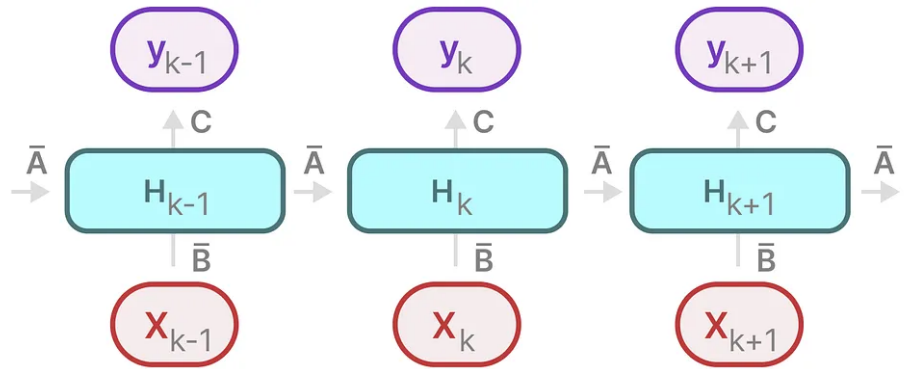
SSM

$$h'(t) = Ah(t) + Bx(t)$$

$$y(t) = Ch(t)$$



**SSM**  
(Recurrent)



**SSM**  
(Recurrent + Unfolded)

Mamba???

1. SSM/S4





## Step size ( $\Delta$ )

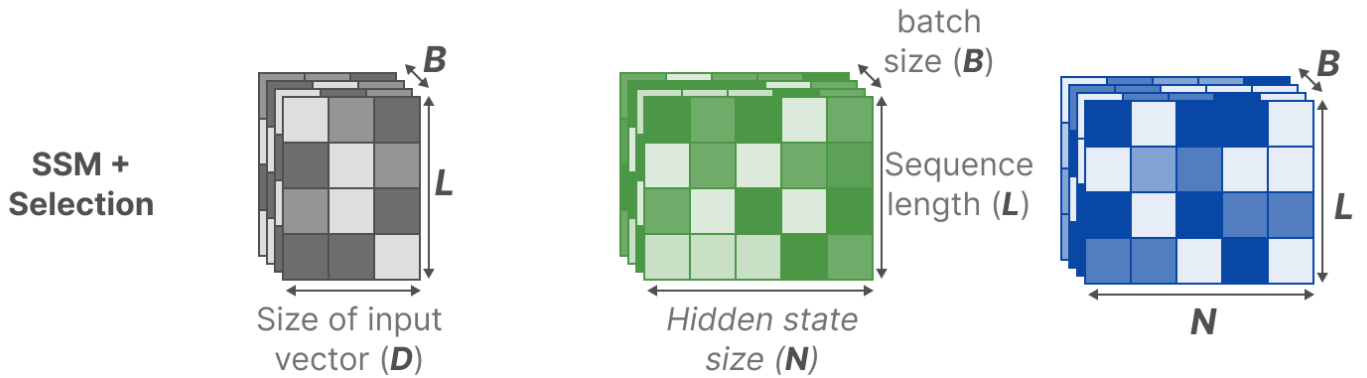
Resolution of the **input**  
(discretization parameter)

## Matrix B

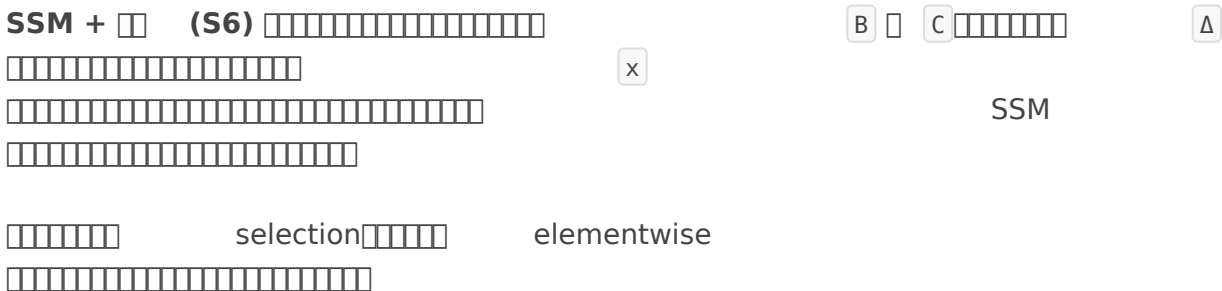
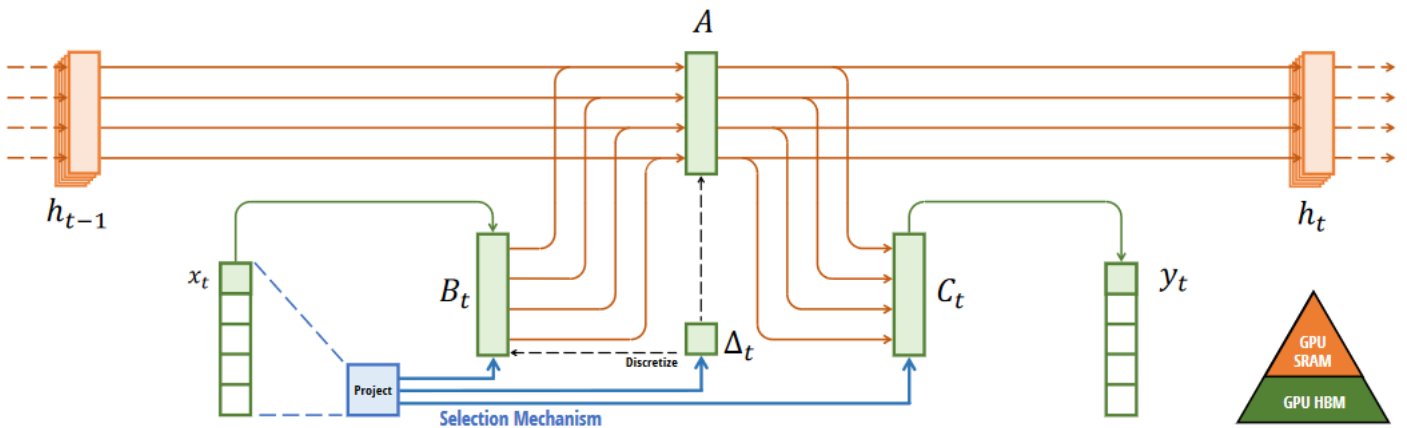
How the **input**  
influences the state

## Matrix C

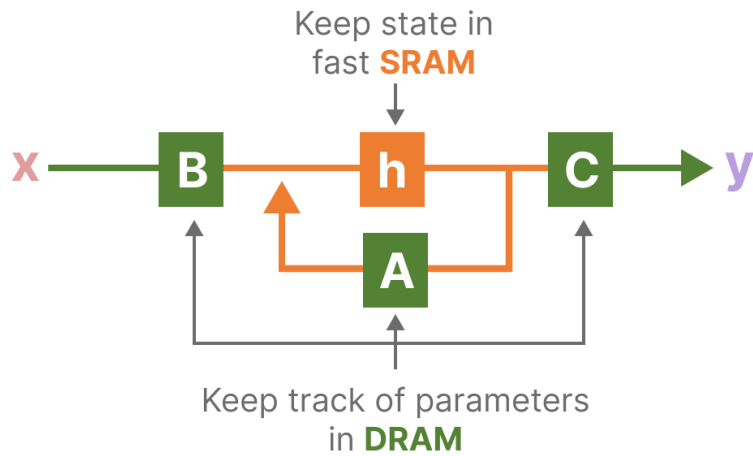
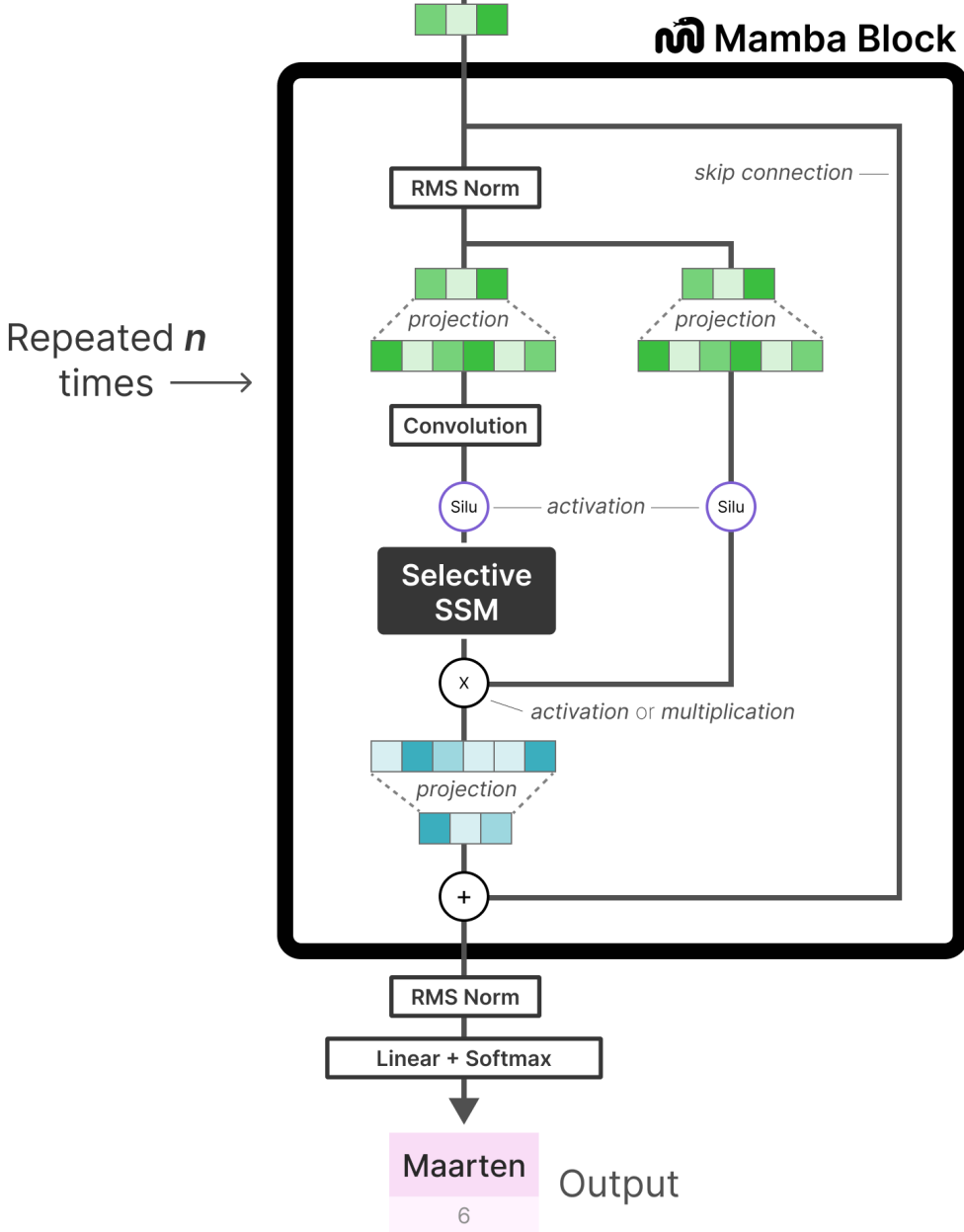
How the **current state**  
translates to the **output**



### Selective State Space Model with Hardware-aware State Expansion



Hello	!	My	name	is	Input
1	2	3	4	5	



<https://newsletter.maartengrootendorst.com/p/a-visual-guide-to-mamba-and-state#%C2%A7what-is-a-state-space>

# Vision Mamba

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Revision #1

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