Frame Based Animations and Feedback

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A Purely Input Based Animation

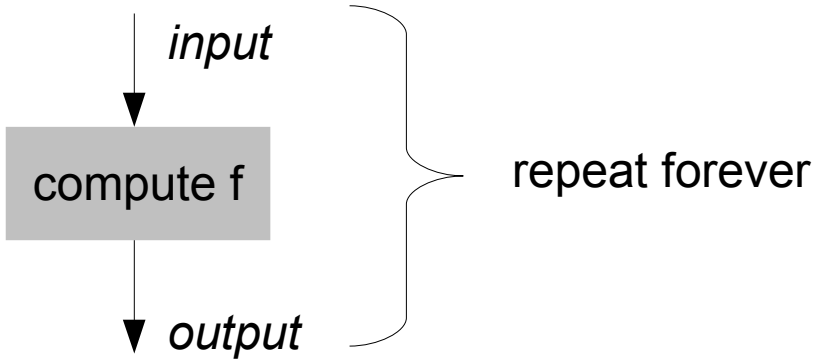
- Needs an input

- The current state depends on the input device only

(The state can be a position of an object in space, its color, its rotation angle etc.)

A purely input based animation can be described as a function 'f' with the input as parameter.

f(input) = output



Examples:

• A patch displaying the frequencies of an audio signal.

A Purely Time Based Animation

- Needs a Clock

- The current state depends on the current time only

A purely timebased animation can be described as a function 'f' on only one parameter: the time 't'.

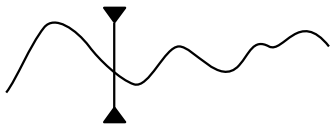
$$f(t) = output$$

It can be seen as an input based animation with the current time as the only Input.

Examples:

• A Video

• Each parameter controlled by a timeline can be seen as a function f(t).



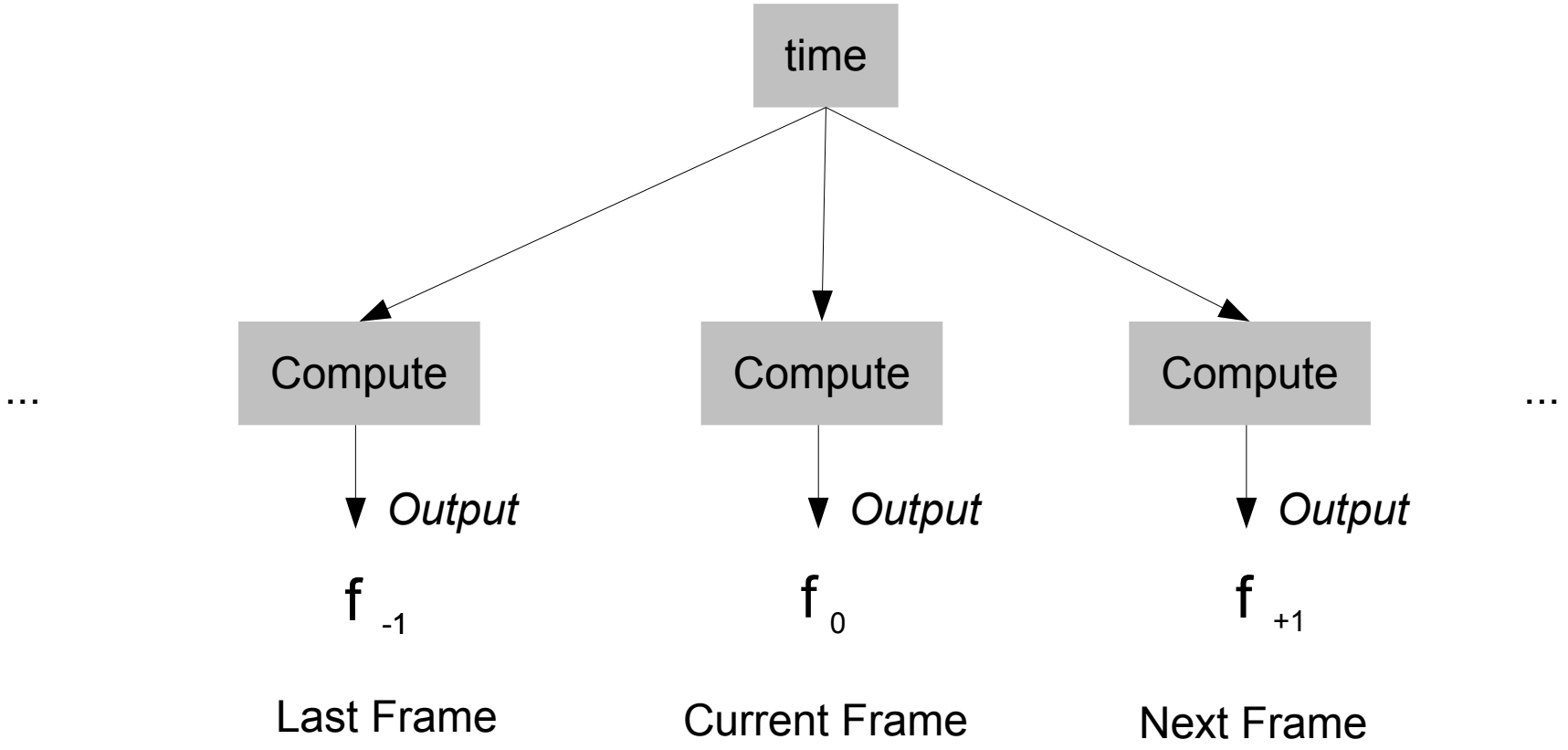
Cursor

• A curve in 3D connected to a clock which is used to sample a point on this curve can be such a f(t):

Curve(t) = Position.xyz

A Purely Time Based Animation

$$f(t) = output$$



A Purely Frame Based Animation

Now we can understand a frame based animation.

- Also called 'recursive system'

- The current state depends on the output of the last frame only (feedback)

- Needs an initial state, which usualy has high influence on the outcome

A purely frame based animation can be described as a function 'f' with the output of the last calculation as parameter.

$$f(f_{-1}) = output$$

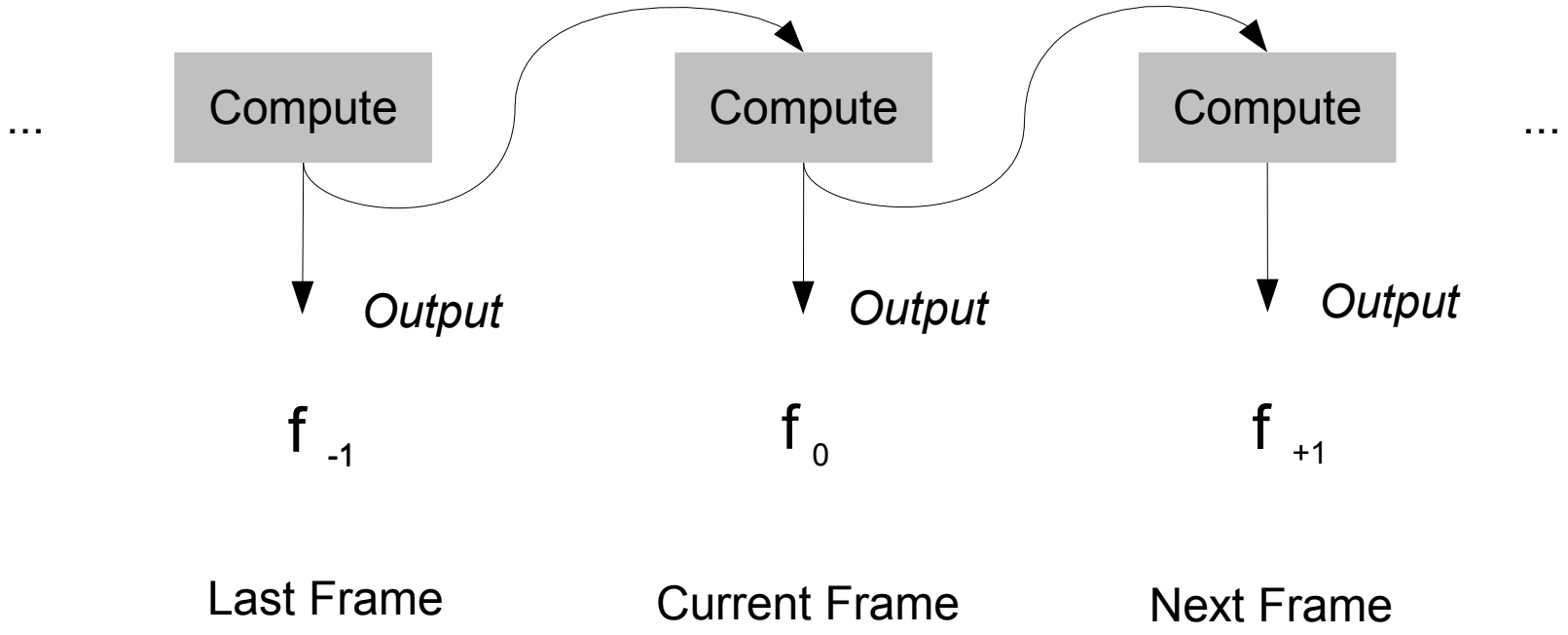
Examples:

• Mouse cursor, its position is saved in memory and updated by the relative movement of the mouse

• Attractor patch, next position depends on the last position

A Purely Frame Based Animation

$$f(f_{-1}) = output$$



A Closer Look At Frame Based Animations in vvvv