

11/30.

$X \in \mathcal{C}at$ .

We have ...

$$\pi_0 \text{Map}_X(x, y) \cong \text{Hom}_{hX}(x, y)$$

Mapping sp. of  $\mathcal{C}at$ .  
11.2.

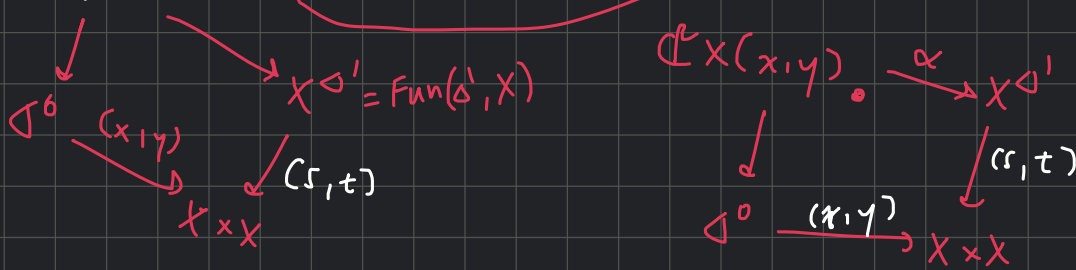
Want

$$\text{Hom}_{h\mathcal{C}X}(x, y) = \pi_0 \mathcal{C}X(x, y)$$

the Kan cpx  $\mathcal{C}X(x, y)$

$\forall x, y \in X$

$$\text{Should have ... } \text{Map}_X(x, y) \stackrel{?}{\cong} \mathcal{C}X(x, y)$$



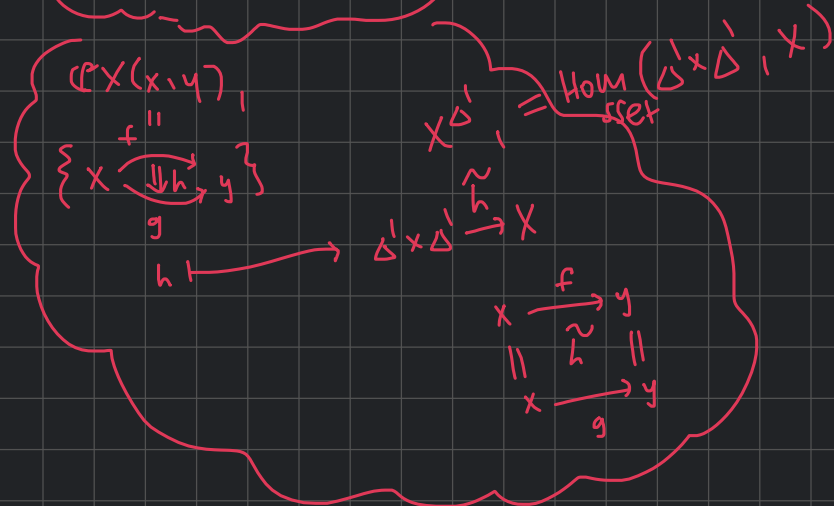
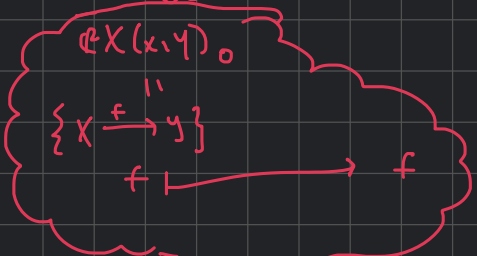
If this is a pushout, then

$$\Delta^0 \xrightarrow{(x, y)} X \times X$$

$$\text{Hom}_{\text{Set}}(S, \mathcal{C}X(x, y)) \stackrel{?}{\cong} \text{Hom}(S, \Delta^0) \times \text{Hom}(S, X^{\Delta^0})$$

$\Delta^0 \times X^{\Delta^0} \cong X \times X$

$$\mathcal{C}X(x, y) \xrightarrow{\alpha} X^{\Delta^0}$$



$$\forall x, y \in X$$

$$\text{Hom}_{hX}(x, y) \xrightarrow{\sim} \text{Hom}_{h\mathcal{C}X}(x, y)$$

but to show  $hX \cong h\mathcal{C}X$  on eq. of cats. you need this correspondence to be compatible w/ composing in each cat.

Maybe mentioned in [HTT, 2.2].  
[HTT, 2.2.0.1].

Q:

# f1. Homotopy theories.

1.1 model cats. — htpy cats.

1.2  $\omega$ -cats.

1.2.1 simp. cats.

↳  $s\text{Cat}$  Bejner.

1.2.2 quasrcats.

↳  $\text{Set}_{\text{Joyal}}$

(Prop if  $\mathcal{C} \in \omega\text{-cat} \Rightarrow \text{Fun}(X, \mathcal{C})$  is an  $\omega\text{-cat}$   
 $\forall X \in \text{Set}$ .)

function  
cpx. ↗

## ~~1.3 Homotopy cats.~~

~~↳ of model cat.~~

~~↳ of s-cats~~

~~↳ of ~~ω-cats~~. q-cats.~~

Construction of the  
f2. underlying ~~construction~~  $\omega$ -cat.

2.1:  $L^H$

2.2:  $\mathbb{R}_B$

2.3:  $N^{hc}$

f2: The underlying

construction.

- 2.1. - 1
- 2.2. ' 1
- 2.3. ' 1

2.4: Facts about

f3: <sup>facts of</sup> the underlying  $\omega$ -cat.

f2 underlying

2.1  $\text{con}^2$

2.1.1  $L^H$

2.1.2  $\mathbb{R}$

2.1.3  $N^{hc}$

2.2 Facts