Exercise sheet 1 - Exercise 6

Christophe Marciot

15 septembre 2020

Suppose we have a natural transformation $\tau : F \to G$. We want to associate to τ a functor $H_\tau : \mathscr{C} \times [1] \to \mathscr{D}$ in a meaningful way. In fact we want that this association to remind us of the notion of homotopy in regular homotopy theory.

We propose the follwing definition : For an object $(c, x) \in \mathrm{Ob}\mathscr{C} \times [1]$ and an arrow $(f, p) \in \mathrm{Ob}\mathscr{C} \times [1]((c, x), (c', x'))$.