

Kempe Type System

Vanessa McHale

March 27, 2021

Contents

0.1	Introduction	1
0.2	Syntax	1
0.3	Judgments	1

0.1 Introduction

This presents the Kempe type system.

0.2 Syntax

$$\begin{array}{lcl} \langle kind \rangle & ::= & \langle type \rangle \\ & | & \langle kind \rangle \langle kind \rangle \end{array}$$
$$\begin{array}{lcl} \langle type \rangle & ::= & \langle int \rangle \\ & | & \langle word \rangle \\ & | & \langle bool \rangle \end{array}$$

0.3 Judgments

$$\frac{\Gamma \vdash x : \alpha_1 \cdots \alpha_n - -\beta_1 \cdots \beta_m \gamma_1 \cdots \gamma_k \quad \Gamma \vdash y : \gamma_1 \cdots \gamma_k - -\delta_1 \cdots \delta_l}{\Gamma \vdash xy : \alpha_1 \cdots \alpha_n - -\beta_1 \cdots \beta_m \delta_1 \cdots \delta_l} \quad (\text{CONCAT})$$
$$\frac{\Gamma \vdash x : \alpha_1 \cdots \alpha_n - -\beta_1 \cdots \beta_m}{\Gamma \vdash x : a\alpha_1 \cdots \alpha_n - -a\beta_1 \cdots \beta_m} \quad (\text{GENERALIZE})$$