Cristina Bautista
Pablo Ruiz

Sistema de Tipos

Reglas de Inferencia

Números Enteros

$$\emptyset \vdash \{\mathbf{0}-\mathbf{9}\} *: \boldsymbol{int}$$

Suma

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: int}{x + y: int}$$
$$\therefore 5 + 1 = 6$$

Resta

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: int}{x - y: int}$$

Multiplicación

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: int}{x \times y: int}$$

División

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: int}{x \div y: float}$$

*En YAPL existe float?

Sentencias booleanas

$$\emptyset \vdash \boldsymbol{true}: \boldsymbol{bool}$$
$$\emptyset \vdash \boldsymbol{false}: \boldsymbol{bool}$$

Suma

$$\frac{\Gamma \vdash x: bool \quad \Gamma \vdash y: bool}{x + y: int}$$

Resta

$$\frac{\Gamma \vdash x: bool \quad \Gamma \vdash y: bool}{x - y: int}$$

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Multiplicación

$$\frac{\Gamma \vdash x: bool \quad \Gamma \vdash y: bool}{x \times y: int}$$

División

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: int}{x \div y: float}$$

*En YAPL existe float?

Cadenas de texto

$$\emptyset \vdash \text{"}\{\text{a-zA-Z0-9}\}\text{"} *: \boldsymbol{str}$$

Suma

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: str}{x + y: str}$$

Resta

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: str}{x - y: Error}$$

Multiplicación

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: str}{x \times y: Error}$$

División

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: str}{x \div y: Error}$$

Operaciones entre distintos tipos de datos

Str + Int

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: int}{x + y: Error}$$

Str – Int

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: int}{x - y: Error}$$

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Str * Int

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: int}{x \times y: str}$$

a $* 2 = aa$

Str / Int

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: int}{x \div y: Error}$$

Str + bool

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: bool}{x + y: Error}$$

Str – bool

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: bool}{x - y: Error}$$

Str * bool

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: bool}{x \times y: Error}$$

Str / bool

$$\frac{\Gamma \vdash x: str \quad \Gamma \vdash y: bool}{x \div y: Error}$$

Int + bool

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: bool}{x + y: int}$$

Int – bool

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: bool}{x - y: int}$$

Int * bool

$$\frac{\Gamma \vdash x: int \quad \Gamma \vdash y: bool}{}$$

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$$x \times y : int$$
$$\mathrm{a} * 2 = aa$$

Int / bool

$$\frac{\Gamma \vdash x : int \quad \Gamma \vdash y : bool}{x \div y : float}$$

*En YAPL existe float?