

# Cheat sheet

Philip Wadler

University of Edinburgh

AIPL, Heriot Watt

Tuesday 19 August 2014

# Cheat sheet: getting started

```
yourmachine: ssh yourname@osiris.macs.hw.ac.uk
```

```
password:
```

```
-bash-4.1$ export PATH=/home/others/philw/links:$PATH
```

```
-bash-4.1$ export LINKS_LIB=/home/others/philw/links
```

```
-bash-4.1$ rlwrap links
```

```
  _      _  _      _  _      _  _  
/ |    | | \ | | | / / / . _ \  
| |    | | , \ | |   / \ \  
| | ___ | | | \ \ | | \ \ _ \  
|___|_|_| \_|_| \_|_|/
```

```
Welcome to Links with session types
```

```
links> 1+2;
```

```
3 : Int
```

# Cheat sheet: types

- **Type**

$\text{type } X = T$

- **Output**

$! T . S$

- **Input**

$! T . S$

- **Offer** ( $n \geq 0$ )

$[\& \mid L_1 : S_1, \dots, L_n : S_n \mid \&]$

- **Select** ( $n \geq 0$ )

$[+ \mid L_1 : S_1, \dots, L_n : S_n \mid +]$

- **Recursion**

$\text{mu } X . S[X]$

# Cheat sheet: terms

- **Output**

`var  $s'$  = send( $t, s$ )`

- **Input**

`var ( $x, s'$ ) = receive( $s$ )`

- **Offer** ( $n \geq 0$ )

```
offer( $s$ ) {  
  case  $L_1 \rightarrow s_1$   
  case  $L_n \rightarrow s_n$   
}
```

- **Select** ( $n \geq 0$ )

`select  $L s$`

# Cheat sheet: functions

- **Functions** ( $n \geq 0$ )

```
sig f : (T1, ..., Tn) ~> T
```

```
fun f (x1, ..., xn) {
```

```
  ...
```

```
}
```

- **Fork**

```
sig fork : ( s ~> EndBang ) ~> ~s
```

- **Print**

```
sig print : ( String ) ~> ()
```

- **Error**

```
sig error : ( String ) ~> t
```