CS181b 2005/06 Lecture 2

- CHP (contd.)
Procedures and Functions

Procedures have three type of parameters:

i. value

ii. result

iii. valres

```pro
procedure p (value a : int; valres b : int; result c : int) chp { S }
```

Functions only have value parameters. The function name is an implicit result parameter.

```pro
function f (a,b : int) chp { S }
```
Replication Construct

Syntactic operator used to *clone* a program fragment into a number of instances.

\[ \langle \text{op } i : n..m : S_i \rangle \]
Reactive Process Structure

\[
*[[G_1 \rightarrow S_1][G_2 \rightarrow S_2] \ldots [G_n \rightarrow S_n]]
\]

Repeat forever: Wait for some \(G_i\) to hold and execute corresponding \(S_i\).
Channels and Ports

Processes communicate with each other through communication commands on ports.
A pair of ports are connected to form a channel.
A port is either an input port or output port.
\[ Y!\text{expr} : \text{send} \]
\[ X?a : \text{receive} \]
\[ \overline{X} : \text{probe} \]