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## PingPong Program

```
In[47]:= generateExpression[length_] := ToString[N[Pi, length], InputForm]
```

```
PingPongProgram[pass_] := Module[{a, b, oldTime, elapsedTime},
  (* send/wait/receive
    p0 <--> p1,
    p2 <--> p3,
    p4 <--> p5,
    ...
  *)
  a = Evaluate[generateExpression[2^pass]];
  If[0 == Mod[idproc, 2],
    (* note: the third argument is a tag *)
    (* even nodes *)
    mpiSend[a, idproc + 1, idproc, mWorld];
    mpiRecv[b, idproc + 1, idproc + 1, mWorld],
    (* odd nodes *)
    mpiRecv[b, idproc - 1, idproc - 1, mWorld];
    mpiSend[b, idproc - 1, idproc, mWorld];
    mpiGather[{$IdProc, a, b}]
  ]
```

```
In[50]:= PingPongProgram[2]
```

```
Out[50]= {{0, 3.1415926535897932384626433832795028842`4., b$8890},
  {1, 3.1415926535897932384626433832795028842`4., b$8252},
  {2, 3.1415926535897932384626433832795028842`4., b$8252},
  {3, 3.1415926535897932384626433832795028842`4., b$8239},
  {4, 3.1415926535897932384626433832795028842`4., b$8252},
  {5, 3.1415926535897932384626433832795028842`4., b$8252},
  {6, 3.1415926535897932384626433832795028842`4., b$8252},
  {7, 3.1415926535897932384626433832795028842`4., b$8239}}
```