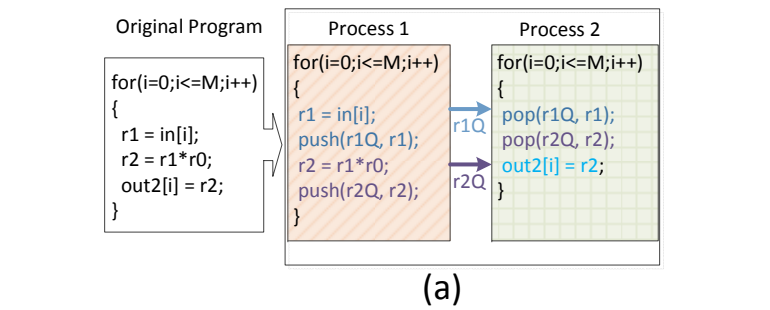
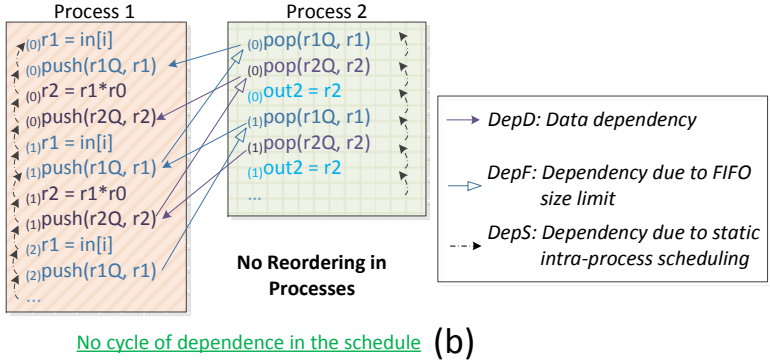
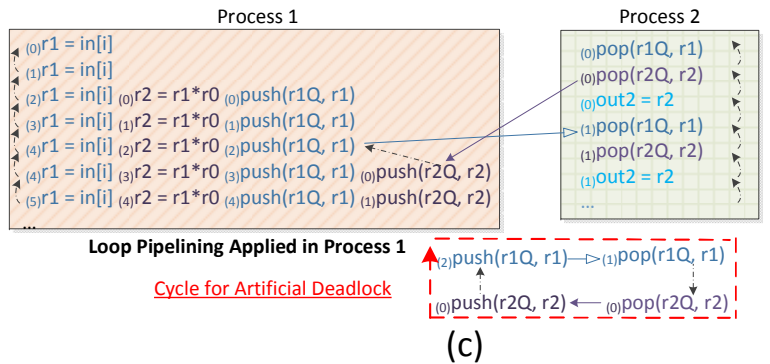

Original Program
for(i=0;i<=M;i++)
{
r1 = in[i];
r2 = r1*r0;
out2[i] = r2;
}
Process 1
for(i=0;i<=M;i++)
{
r1 = in[i];
push(r1Q, r1);
r2 = r1*r0;
push(r2Q, r2);
}
r1Q
r2Q
Process 2
for(i=0;i<=M;i++)
{
pop(r1Q, r1);
pop(r2Q, r2);
out2[i] = r2;
}
(a)


Process 1
(0)r1 = in[i]
(0)push(r1Q, r1)
(0)r2 = r1*r0
(0)push(r2Q, r2)
(1)r1 = in[i]
(1)push(r1Q, r1)
(1)r2 = r1*r0
(1)push(r2Q, r2)
(2)r1 = in[i]
(2)push(r1Q, r1)
...
Process 2
(0)pop(r1Q, r1)
(0)pop(r2Q, r2)
(0)out2 = r2
(1)pop(r1Q, r1)
(1)pop(r2Q, r2)
(1)out2 = r2
...
No Reordering in Processes
DepD: Data dependency
DepF: Dependency due to FIFO size limit
DepS: Dependency due to static intra-process scheduling
No cycle of dependence in the schedule
(b)


Process 1
(0)r1 = in[i]
(1)r1 = in[i]
(2)r1 = in[i] (0)r2 = r1*r0 (0)push(r1Q, r1)
(3)r1 = in[i] (1)r2 = r1*r0 (1)push(r1Q, r1)
(4)r1 = in[i] (2)r2 = r1*r0 (2)push(r1Q, r1)
(4)r1 = in[i] (3)r2 = r1*r0 (3)push(r1Q, r1) (0)push(r2Q, r2)
(5)r1 = in[i] (4)r2 = r1*r0 (4)push(r1Q, r1) (1)push(r2Q, r2)
...
Process 2
(0)pop(r1Q, r1)
(0)pop(r2Q, r2)
(0)out2 = r2
(1)pop(r1Q, r1)
(1)pop(r2Q, r2)
(1)out2 = r2
...
Loop Pipelining Applied in Process 1
Cycle for Artificial Deadlock
(2)push(r1Q, r1)
(1)pop(r1Q, r1)
(0)push(r2Q, r2)
(0)pop(r2Q, r2)
(c)