

- N 个共享缓冲区读写问题

```
semaphore mutex = 1, Sb = N, Sa = 0;
CP()
{
    while(true)
    {
        get a result;
        P(Sb);
        P(mutex);
        push into buffer;
        V(mutex);
        V(Sa);
    }
}
IOP()
{
    while(true)
    {
        P(Sa);
        P(mutex);
        read result from buffer;
        V(mutex);
        V(Sb);
        print the result;
    }
}
main()
{
    while(true)
    {
        CP();
        IOP();
    }
}
```

- 吃水果问题

```
semaphore mutex = 1, S = N, Ss = 0, Sd = 0;
Father()
{
    while(true)
    {
        P(S);          // 水果数量+1
        P(mutex);
        Put a fruit to the plate;
        V(mutex);
        if(fruit == orange)
        {
            V(Ss);      // 儿子吃橘子
        }
        else
        {
            V(Sd);      // 女儿吃苹果
        }
    }
}
Son()
{
    while(true)
    {
        P(Ss);
        P(mutex);
        get the orange;
        V(mutex);
        V(S);
        eat the orange;
    }
}
Daughter()
{
    while(true)
    {
        P(Sd);
        P(mutex);
        get the apple;
        V(mutex);
        V(S);
        eat the apple;
    }
}
main()
{
    while(true)
    {
        Father();
        Son();
        Daughter();
    }
}
```