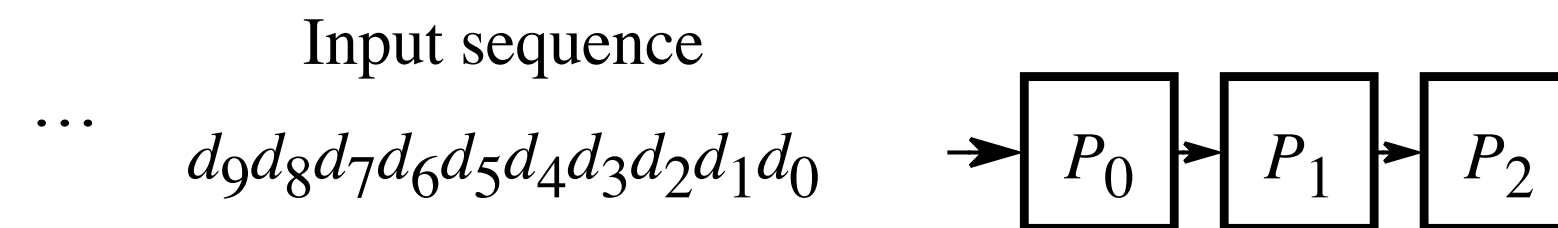


# Worksheet: Analyzing Parallelism in an Actor Pipeline

Consider a three-stage pipeline of actors, set up so that  $P_0.nextStage = P_1$ ,  $P_1.nextStage = P_2$ , and  $P_2.nextStage = null$ . The `process()` method for each actor is shown below.

Assume that 100 non-null messages are sent to actor  $P_0$  after all three actors are started, followed by a null message. What will the total WORK and CPL be for this execution? Recall that each actor has a sequential thread.



```
1.  protected void process(final Object msg) {
2.      if (msg == null) {
3.          exit();
4.      } else {
5.          doWork(1); // unit work
6.      }
7.      if (nextStage != null) {
8.          nextStage.send(msg);
9.      }
10. }
```

