4.2 Algorithms

Any computing problem can be solved by executing a series of actions in a specific order. A *procedure* for solving a problem in terms of

1. the **actions** to execute and
2. the **order** in which these actions execute

is called an **algorithm**. The following example demonstrates that correctly specifying the order in which the actions execute is important.

Consider the “rise-and-shine algorithm” followed by one executive for getting out of bed and going to work: (1) Get out of bed; (2) take off pajamas; (3) take a shower; (4) get dressed; (5) eat breakfast; (6) carpool to work. This routine gets the executive to work well prepared to make critical decisions. Suppose that the same steps are performed in a slightly different order: (1) Get out of bed; (2) take off pajamas; (3) get dressed; (4) take a shower; (5) eat breakfast; (6) carpool to work. In this case, our executive shows up for work soaking wet. Specifying the order in which statements (actions) execute in a program is called **program control**. This chapter investigates program control using Java’s **control statements**.