Exercise 1: Execution of trace abstraction  
Consider the following program and the corresponding control automaton $A_P$.

```c
int x, y, z, w;
void foo()
{
    do {
        z = 0;
        x = y;
        if (w == 17) {
            x++;
            z = 1;
        }
    } while (x != y)
    assert (z != 1);
}
```

Give two error traces $\pi_1, \pi_2$ and construct corresponding interpolant automata $A_1, A_2$ such that the inclusion $L(A_P) \subseteq L(A_1) \cup L(A_2)$ holds.

Remark: We call a trace $\pi$ infeasible if $post(true, \pi) = false$ holds.

Exercise 2: Interpolant automata  
Prove that an interpolant automaton accepts only infeasible traces.