Self-Test: While Loops

You should take this self-test after listening to the presentations. Try it out on your own before you look at the solutions.

1. First let make sure you know how for-loops work. Calculate $\displaystyle\sum_{i=1}^{10} \frac{i^3}{i \cdot (i+2)}$.

2. Now use an equivalent while loop to calculate the same sum. You have to initialize the iteration variable i and you have to increment it during the loop.

3. Now let us find the smallest n such that $\displaystyle\sum_{i=1}^{n} i^2 > 10000$. Use a while loop.

The last problem is slightly tricky since we increment i after calculating the accumulator. You need to watch closely what the current value of i is going to be and how it relates to the accumulator.