Cumulative Algorithms

Cumulative algorithms such as sum, average, standard deviation, and so on, visit each element in the array and then add, multiply or otherwise process it.

Here is an example which adds all of the **even numbers** in an array named `a`:

- The array `a` is `const`, since the elements won't be changed.
- The **accumulator** `sum` is `double` so it doesn't overflow.
- Only the **even** elements (those where `n % 2 == 0`) are added.

```
double addEvens(const int a[], size_t len)
{
    double sum{0};
    for (size_t i = 0; i < len; ++i)
    {
        if (a[i] % 2 == 0) { sum += a[i]; }
    }
    return sum;
}
```