RcppParallel Notes

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27 May, 2018

This document contains notes to myself about learning RcppParallel.

Basic structure

RcppParallel scripts have two main parts, a worker and the main function. The worker is a C++ "struct". The syntax for using it is kind of like a data type. The main function calls `parallelFor` using the struct to get parallel execution.

The worker has the same basic interior format:

1. Declare your input
2. Declare your output
3. Initialize both using a weird (but easy to copy) syntax
4. Declare a "void" operator, inside of which the actual work happens
5. (Optional) Join the result together

An example worker is below

```
struct myWorker : public Worker {

  // input to read from
  const RVector<double> input;

  // output to write to
  double output;

  // initialize input and output
  Sum(const NumericVector input) : input(input), value(0) {}
  Sum(const Sum& sum, Split) : input(sum.input), value(0) {}

  // SquareRoot(const NumericMatrix input, NumericMatrix output)
  //   : input(input), output(output) {}


  // declare the operator
    void operator()(std::size_t begin, std::size_t end) {
     value += std::accumulate(input.begin() + begin, input.begin() + end, 0.0);
  }

  // join result
   void join(const Sum& rhs) {
      value += rhs.value;
};
```

Additional Notes