mergesort_function.cpp

```cpp
void mergesort(vector<int>& array, size_t left, size_t right)
{
  if (left != right)
  {
    size_t mid = (left + right) / 2;
    mergesort(array, left, mid);
    mergesort(array, mid + 1, right);
    merge(array, left, mid, right);
  }
}
```