

Partitioning Algorithms Solutions

Partitioning

- Explain what is meant by partitioning the elements of a container
 - Partitioning the elements of a container divides the elements into two groups
 - One group, which is at the front of the container, consists of elements which have a given property
 - The other group, which is at the back of the container, consists of elements which do not have that property
- What is a partition point?
 - The partition point marks the boundary between the two groups of elements

partition()

- Describe the partition algorithm function
 - `partition()` moves all elements for which a predicate is true to the front of the range
 - It moves all elements for which the predicate is false to the back of the range
- What arguments does `partition()` take?
 - `partition()` takes the iterator range to be partitioned and a predicate function
- Write a simple program which uses `partition()`

stable_partition()

- Describe the `stable_partition` algorithm function
 - `stable_partition()` is the same as `partition()`, except that the elements in each group retain their relative order
- What arguments does `partition()` take?
 - `stable_partition()` takes the iterator range to be partitioned and a predicate function
- Write a simple program which uses `stable_partition()`

is_partitioned()

- Describe the is_partitioned algorithm function
 - is_partitioned() returns a bool, depending on whether the elements are partitioned by the given predicate function
- What arguments does is_partitioned() take?
 - is_partitioned() takes an iterator range and a predicate function
- Write a simple program which uses is_partitioned()

partition_point()

- Describe the partition_point algorithm function
 - partition_point() returns an iterator to the first element for which the given predicate is false
- What arguments does partition_point() take?
 - partition_point() takes an iterator range and a predicate function
- Write a simple program which uses partition_point()