CLRS Algorithm Analysis Report

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Chapter 1

Insertion Sort

Pseudocode

```
procedure INSERTION-SORT(A[1..n])
  for j = 2 to n
    key = A[j]
    i = j - 1
    while i > 0 and A[i] > key
      A[i + 1] = A[i]
      i = i - 1
    A[i + 1] = key
```

Implementation

Listing 1.1: Rust implementation for `insertion_sort`

```
pub fn insertion_sort<T>(arr: &mut [T])
where
    T: Ord + Clone,
{
    for i in 1..arr.len() {
        let key = arr[i].clone();
        let mut j = i;

        // Move elements greater than key one position ahead.
        while j > 0 && arr[j - 1] > key {
            arr[j] = arr[j - 1].clone();
            j -= 1;
        }

        arr[j] = key;
    }
}
```