Tutorial 4

Question 1

Show in the style of the example trace with selection sort, how selection sort sorts the array

E A S Y Q U E S T I O N

Note: An example of a trace is given in the appendix.

An example trace of selection sort

Iteration	Array
	S O R T E X A M P L E
0	A O R T E X S M P L E
1	A E R T O X S M P L E
2	A E E T O X S M P L R
3	A E E L O X S M P T R
...	

Question 2

What is the maximum number of exchanges involving any particular item during selection sort? What is the average number of exchanges involving an item?

Question 3

Show in the style of the example trace with insertion sort, how insertion sort sorts the array

E A S Y Q U E S T I O N

Question 4

Give traces, in the style of the trace given in the appendix, showing how the keys E A S Y Q U E S T I O N are sorted with merge sort.

Question 5

Show, in the style of the quicksort trace, how quicksort sorts the array

E A S Y Q U E S T I O N

Note that the first element is chosen as the pivot. In the trace, only show the output of partition. You do not need to show the trace for the partition process.