

Question :

Show, how Insertion sort sorts the array E A S Y Q U E S T I O N.

Solution :

Consider a loop which iterates for the length of array times

- I = 1. Since A is smaller than E, swap A and E. Now the array is

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

- I = 2. E is in the right position. So no change in the array

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

- I = 3. S is in the right position. So no change in the array

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

- I = 4. Y is in the right position. So no change in the array

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

- I = 5. Q is kept after E and all the elements are shifted one position ahead. Now the array is

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

- I = 6. U is kept after S and all the elements are shifted one position ahead. Now the array is

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

- I = 7. E is kept after E and all the elements are shifted one position ahead. Now the array is

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

- I = 8. S is kept after S and all the elements are shifted one position ahead. Now the array is

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

- I = 9. T is kept after S and all the elements are shifted one position ahead. Now the array is

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

- I = 10. I is kept after E and all the elements are shifted one position ahead. Now the array is

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

- I = 11. O is kept after I and all the elements are shifted one position ahead. Now the array is

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

- I = 12. N is kept after I and all the elements are shifted one position ahead. Now the array is

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