Assignment: Sprint competition

There is a sprint competition in the school where the time of the race is recorded in seconds. They need to find the 3 fastest runners to declare the winner. Could you please help Mr. David, the physical education instructor of the school with the same?

Assume the maximum size of an array can be 10.
Write a Pseudocode for this scenario.

Sample Input 1
Enter value for n
6
Enter time taken
19
12
7
23
15
11
Sample Output 1 :
7
11
12

Explanation

Declare variable to store the array, say arr

DECLARE variable arr[10], n

Get the value of n.

READ n

Read the values for the array

FOR i in 0 to n-1 DO

READ arr[i]

END FOR

Arrange the array in ascending order.

Suppose the elements of the array are 19 12 7 23 15 1,
To sort in ascending.

Let i=0, j=0
Compare if arr[j]>arr[j+1]. Means arr[0]>arr[1]. 19>12. If yes swap. Else don't swap.

As 19>12, swap. Now array is 12 19 7 23 15 1.

Next j=j+1=1. So arr[1]>arr[2]. 19>7, swap. Now array is 12 7 19 23 15 1.
Next j=2. 19>23, Don't swap. Array is 12 7 19 23 15 1.
Next j=3. 23>15, swap. Array is 12 7 19 15 23 1
Next j=4. 23>1, swap. Array is 12 7 19 15 1 23. When j=5 stop loop. Hence the largest element is pushed to the right end.

Next i=1, j=0. Array is 12 7 19 15 1 23.
compare if arr[j]>arr[j+1]. 12>7 swap. Array is 7 12 19 15 1 23.
Next j=j+1=1. 12>19, Don't swap.
Next j=2. 19>15, swap. Array is 7 12 15 19 1 23.
Next j=3. 19>1, swap. Array is 7 12 15 1 19 23.

Next j=4. When j=4 stop loop as it is already set. Hence next largest element 19 is pushed to the right end.

Continue this process to get the array sorted.

Pseudocode for sorting the array is

```
FOR i IN 0 to n-1 DO
    FOR j IN 0 to n-1-i DO
        IF a[j]>a[j+1] THEN ---------->swap
            temp=a[i]
            a[i]=a[j+1]
            a[j+1]=temp
        END IF
    END FOR
END FOR
```

This will sort the array

To display the 3 fastest runners : As the array is in ascending order, the first three values will be the fastest runners score as they have taken minimum time in the race.

So to print the ouput

```
FOR i in 0 to 2 DO
    PRINT arr[i]
END FOR
```

Submission status

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```
BEGIN

DECLARE arr[10], n

 READ n

FOR i in 0 to n-1 DO
      READ arr[i]
  END FOR

FOR i IN 0 to n-1 DO
          FOR j IN 0 to n-1-i DO
             IF a[j]>a[j+1] THEN ------------>swap
                temp=a[i]
                a[i]=a[j+1]
               a[j+1]=temp
            END IF
         END FOR
      END FOR

FOR i in 0 to 2 DO
         PRINT arr[i]
     END FOR

END
```

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