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| --- |
| #include <iostream> |
|  | using namespace std; |
|  |  |
|  | //Function to find the mean |
|  | float mean(float newArray[], int arraySize) { |
|  | float x = 0; |
|  | for (int i = 0; i <= arraySize - 1; i++) { |
|  | x += newArray[i]; |
|  | } |
|  | return x/arraySize; |
|  | } |
|  |  |
|  | //Function to find the largest element |
|  | int largest(float newArray[], int arraySize) { |
|  | int x = newArray[0]; |
|  | for (int i = 1; i <= arraySize - 1; i++) { |
|  | if (x < newArray[i]) { |
|  | x = newArray[i]; |
|  | } |
|  | } |
|  | return x; |
|  | } |
|  |  |
|  | //Function to find the position of the largest element |
|  | int largestPos(float newArray[], int arraySize) { |
|  | int x = newArray[0]; |
|  | int pos = 0; |
|  | for (int i = 1; i <= arraySize - 1; i++) { |
|  | if (x < newArray[i]) { |
|  | x = newArray[i]; |
|  | pos = i; |
|  | } |
|  | } |
|  | return pos; |
|  | } |
|  |  |
|  | //Function to find the smallest element |
|  | int smallest(float newArray[], int arraySize) { |
|  | int x = newArray[0]; |
|  | for (int i = 1; i <= arraySize - 1; i++) { |
|  | if (x > newArray[i]) { |
|  | x = newArray[i]; |
|  | } |
|  | } |
|  | return x; |
|  | } |
|  |  |
|  | //Function to find the median |
|  | float median(float newArray[], int arraySize) { |
|  | for (int i = arraySize; i >= 1; i--) { |
|  | int x = largest(newArray, i); |
|  | newArray[largestPos(newArray, i)] = newArray[i - 1]; |
|  | newArray[i - 1] = x; |
|  | } |
|  | if (arraySize % 2 == 1) { |
|  | return newArray[(arraySize-1)/2]; |
|  | } |
|  | else { |
|  | return (newArray[arraySize/2]+newArray[(arraySize/2) - 1])/2; |
|  | } |
|  | } |
|  |  |
|  | //Function to find the mode |
|  | float mode(float newArray[], int arraySize) { |
|  | median(newArray, arraySize); |
|  | int x = 0; |
|  | int y = 0; |
|  | int pos = 0; |
|  | for (int i = 0; i <= arraySize - 2; i++) { |
|  | if (newArray[i] == newArray[i+1]) { |
|  | x++; |
|  | } |
|  | else { |
|  | if (x > y) { |
|  | y = x; |
|  | pos = i; |
|  | } |
|  | x = 0; |
|  | } |
|  | } |
|  | return newArray[pos]; |
|  | } |
|  |  |
|  | int main() { |
|  |  |
|  | int arraySize; |
|  | cout << "Enter the size of the array: "; |
|  | cin >> arraySize; |
|  |  |
|  | float newArray[arraySize]; |
|  |  |
|  | for (int i = 0; i <= arraySize - 1; i++) { |
|  | cout << "Enter element number " << i+1 << ": "; |
|  | cin >> newArray[i]; |
|  | } |
|  |  |
|  | cout << "The largest element of the array is " << largest(newArray, arraySize) << "."<< endl; |
|  | cout << "The smallest element of the array is " << smallest(newArray, arraySize) << "."<< endl; |
|  | cout << "The mean of the elements of the array is " << mean(newArray, arraySize) << "."<< endl; |
|  | cout << "The median of the elements of the array is " << median(newArray, arraySize) << "."<< endl; |
|  | cout << "The mode of the elements of the array is " << mode(newArray, arraySize) << "."<< endl; |
|  |  |
|  | return 0; |
|  | } |