**Date: 07 January, 2021 Total Marks: 20**

You’re given an essay containing letters (a-z, A-Z), numbers (0-9), whitespaces and commonly used symbols (,./-;” ”). Your task is to sort this essay in a specific order and search for a particular character from the sorted list.

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| **Method** | **Task** | **Marks** |
| void sortString(char \* st) | It will receive the base address of the character array where the essay is stored. The function will get rid of the whitespaces and symbols. Then it will sort the character array in the following order -  Numbers(According to their ASCII values) - Letters (Alphabetically).  The order of letters and numbers in the sorted array should be preserved.  See sample input/output for clarification. | 10 |
| int findValue(char ch, char \* st) | This function will search for a character in the sorted array. If the given character is found then it will return the last position of the character in the list otherwise -1.  See sample input/output for clarification. | 10 |

**Constraints**

1 <= length(st) <= 106

**Sample Input/Output**

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| --- |
| "Quote", MiSsiPPI 74 5496 88AAaa A asgard  1  44567889AAaaAaadegiiIMoPPQrSsstu  2  8  Character '8' found at 6  2  A  Character 'A' found at 12  2  a  Character 'a' found at 14  2  S  Character 'S' found at 27  2  i  Character 'i' found at 19  2  J  Character ‘J’ not found.  3 |

**Code Template**

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| --- |
| #include <iostream>  #include <algorithm>  #include <cstring>  using namespace std;  void printString(char \* st){  for(int i = 0; i < strlen(st); i++)  cout << st[i];  cout << endl;  }  void sortString(char \* st){  /\*\* GRADED CODE \*\*/  /// write your code here with comment  }  int findValue(char ch, char \* st){  /\*\* GRADED CODE \*\*/  /// write your code here with comment  }  int main(){  char st[1000000];  cin.get(st, 1000000);  int n = strlen(st);  sortString(st); /// The essay is sorted  while(1) {  int choice;  cin >> choice;  if(choice == 3)  break;  switch(choice){  case 1:  printString(st); /// Prints the sorted Array.  break;  case 2:  char cs;  cin >> cs;  int ret = findValue(cs, st);  if(ret != -1)  cout << "Character \'" << cs << "\' found at " << ret << endl;  else  cout << "Character \'" << cs << "\' not found." << endl;  break;  }  }  } |

**Hints**

Will be provided upon the progress but obviously at the cost of some marks.