**ALI HASSAN 03-135211-005**

**ASSIGNMENT 2**

**TASK 1:**

#include <iostream>

using namespace std;

int main()

{

int vowels = 0;

int consonents = 0;

char arr[10] = { 'a', 'c', 'e', 'b', 'd', 'f', 'g', 'i', 'o', 'p' };

char\* ptr = &arr[0];

for (int i = 0; i < 10; i++) {

\*ptr = \*(ptr + i);

if ((\*ptr == 'a' || \*ptr == 'e' || \*ptr == 'i' || \*ptr == 'o' || \*ptr == 'u')) {

vowels++;

}

else

consonents++;

}

cout << "Entries: a,c,e,b,d,f,g,i,o,p" << endl;

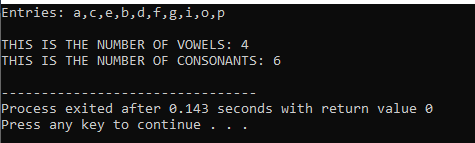
cout << "\nTHIS IS THE NUMBER OF VOWELS: " << vowels << endl;

cout << "THIS IS THE NUMBER OF CONSONANTS: " << consonents << endl;

return 0;

}

**OUTPUT:**



**Task 2:**

#include <iostream>

using namespace std;

int main()

{

char alphabet[27];

char\* ptr;

ptr = alphabet;

for (int i = 0; i < 26; i++) {

\*ptr = i + 'a';

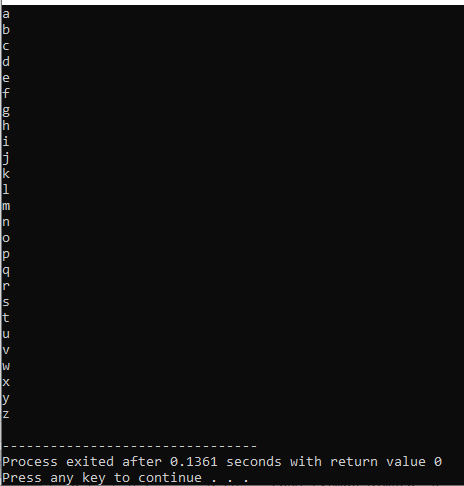
cout << \*ptr << endl;

}

return 0;

}

**Output:**



**Task 3:**

#include <iostream>

using namespace std;

int main()

{

char array[7];

cout << "Please enter your string: ";

cin >> array;

char\* ptr;

cout << "Your entry: " << array << endl;

cout << "REVERSED: ";

for (int i = 7; i >= 0; i--) {

ptr = &array[i];

array[i] = \*ptr;

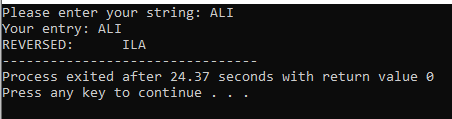
cout << array[i];

}

return 0;

}

**Output:**



**Task 4:**

#include <iostream>

using namespace std;

class List {

private:

int arr[50];

int index;

public:

List();

void add(int a);

void remove(int a);

void removeAt(int key);

void addAt(int a, int index);

void search(int a);

void addAtStart(int a);

void addAtLast(int a);

void display();

};

List::List() {

//constructor

index = 0;

for (int i = 0; i < 50; i++) {

arr[i] = 0;

}

}

void List::add(int a) {

int\* ptr;

ptr = &a;

int\* ptr\_arr = &arr[0];

for (int i = 0; i < 50; i++) {

if (\*(ptr\_arr + i) == 0) {

\*(ptr\_arr + i) = \*ptr;

cout << "number added!" << endl;

break;

}

else

cout << "eror" << endl; break;

}

display();

}

void List::remove(int a) {

int\* ptr;

ptr = &a;

int\* ptr\_arr = &arr[0];

for (int i = 0; i < 50; i++) {

if (\*(ptr\_arr + i) == \*ptr) {

\*(ptr\_arr + i) = 0;

\*(ptr\_arr + i) = \*(ptr\_arr + i + 1);

cout << "Number: " << \*ptr << " removed at index[" << \*(ptr\_arr + i) << "]" << endl;

}

}

display();

}

void List::removeAt(int key) {

int\* ptr;

ptr = &key;

int\* ptr\_arr = &arr[0];

int num = \*(ptr\_arr + \*ptr);

for (int i = \*ptr; i < 50; i++) {

\*(ptr\_arr + i) = \*(ptr\_arr + i + 1);

}

cout << "Record: " << num << " at index [" << \*ptr << "] removed!" << endl;

display();

}

void List::addAt(int a, int key) {

int\* ptr, \* ptr\_key;

ptr = &a;

ptr\_key = &key;

int\* ptr\_arr = &arr[0];

if (\*(ptr\_arr + \*ptr\_key) == 0) {

\*(ptr\_arr + \*ptr\_key) = \*ptr;

cout << "Number added at index [" << \*ptr\_key << "]" << endl;

}

else {

for (int i = \*ptr\_key; i < 50; i++) {

\*(ptr\_arr + i + 1) = \*(ptr\_arr + i);

}

\*(ptr\_arr + \*ptr\_key) = \*ptr;

cout << "Number added at index [" << \*ptr\_key << "]" << endl;

}

display();

}

void List::search(int a) {

int\* ptr = &a;

int\* ptr\_arr = &arr[0];

for (int i = 0; i < 50; i++) {

if (\*(ptr\_arr + i) == \*ptr) {

cout << "Record: " << \*ptr << " found at index [" << \*(ptr\_arr + i) << "]" << endl;

}

}

}

void List::addAtStart(int a) {

int\* ptr = &a;

int\* ptr\_arr = &arr[0];

if (\*(ptr\_arr + 0) == 0) {

\*(ptr\_arr + 0) = \*ptr;

cout << "Number: " << \*ptr << " added at the start of array index [0]" << endl;

}

else {

for (int i = 49; i >= 0; i--) {

\*(ptr\_arr + i) = \*(ptr\_arr + i - 1);

}

\*(ptr\_arr + 0) = \*ptr;

cout << "Number: " << \*ptr << " added at the start of array index [0]" << endl;

}

display();

}

void List::addAtLast(int a) {

int\* ptr = &a;

int\* ptr\_arr = &arr[0];

if (\*(ptr\_arr + 49) == 0) {

\*(ptr\_arr + 49) = \*ptr;

cout << "Number : " << \*ptr << " added at last of array index[49]" << endl;

}

else {

for (int i = 0; i < 50; i++) {

\*(ptr + i) = \*(ptr\_arr + i + 1);

}

cout << "Number : " << \*ptr << " added at last of array index[49]" << endl;

}

display();

}

void List::display() {

for (int i = 0; i < 50; i++) {

// only printing non ZEro values!

if (arr[i] != 0)

cout << "index [" << arr[i] << "]" << endl;

}

}

int main() {

List list;

list.add(12);

list.search(12);

list.remove(12);

list.addAt(5, 5);

list.removeAt(5);

list.addAtStart(69);

list.addAtLast(68);

return 0;

}

**Output:**

