1)

#include <iostream>

using namespace std;

void swap(int\* a, int\* b)

{

int temp = \*a; // Storing the value of the first integer in a temporary variable

\*a = \*b; // Assign the value

\*b = temp; // Assign the value of the temporary variable to the second integer

}

int main()

{

int first, second;

cout << "Enter first Integer: ";

cin >> first;

cout << "Enter Second Integer: ";

cin >> second;

swap(&first, &second); // Passing the addresses of the variables to the swap function

cout << first \n << second << endl;

return 0;

}

2)

#include <iostream>

using namespace std;

int nCr(int n, int r) {

if (r == 0 || r == n) {

return 1; // Base case

} else if (r > n) {

return 0;

} else {

// Recursive case: Calculate nCr by recursive call

return nCr(n - 1, r) + nCr(n - 1, r - 1);

}

}

int main() {

int n, r;

cin >> n; // Read the value of n from the user

cin >> r; // Read the value of r from the user

cout << nCr(n, r); // Print the result of nCr

return 0;

}

3)

#include <iostream>

using namespace std;

int main() {

string str; // Declare a string variable

cout << "Enter the string: ";

cin >> str; // Read the input string

int length = str.size(); // Get the length of the string

for (int i = 0; i < length-1; i++) {

if (('A' <= str[i]) && (str[i] <= 'Z')) {

str[i] = str[i] + 32;

// Convert the character to lowercase by adding 32 to its ASCII value

}

else if (('a' <= str[i]) && (str[i] <= 'z')) {

str[i] = str[i] - 32;

// Convert the character to uppercase by subtracting 32 from its ASCII value

}

}

cout << str; // Output string

return 0;

}

4)

#include <iostream>

#include <string>

using namespace std;

struct Student {

string name;

int rollNumber;

string department;

};

int main() {

int n;

cin >> n; // Read the number of input lines

Student students[100]; // Array to store student information

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

int query;

cin >> query;

if (query == 1) {

// Store student information

string name, department;

int rollNumber;

cin >> name >> rollNumber >> department; // Read the name, roll number, and department

students[rollNumber].name = name; // Assign the name to the corresponding student

students[rollNumber].rollNumber = rollNumber; // Assign the roll number

students[rollNumber].department = department; // Assign the department

} else if (query == 0) {

int rollNumber;

cin >> rollNumber;

if (students[rollNumber].name == "") {

cout << "-1" << endl;

} else {

// Print the student's information

cout << "Name: " << students[rollNumber].name << endl;

cout << "Roll Number: " << students[rollNumber].rollNumber << endl;

cout << "Department: " << students[rollNumber].department << endl;

}

}

}

return 0;

}