Ques1

#include <iostream>

using namespace std;

int main()

{

int a,b; //Defines integers a and b

cin >> a >> b; //Takes input

cout << "Original: " << a << " " << b;

b = a + b; //Changes b to sum of a and b

a = b - a; //Changes a to sum-a, that is, to original 'b'

b = b - a; //Changes b to sum-a, that is, sum-(original 'b'), that is, original 'a'

cout << "\nSwapped: " << a << " " << b;

return 0;

}

Ques2

#include <iostream>

using namespace std;

int main()

{

int n,r;

cin >> n >> r; //Takes input

r = r<(n-r) ? r:(n-r); //Chooses minimum of r and n-r

int num = 1, den = 1; //Defines initial numerator and denominator

for(int i = 0; i<r;i ++) //Iterates for loop upto minimum of r and n-r as calculated in 1st step

{

num\*= (n-i); //Numerator is multiplication from n to (n-min(r,n-r))

den\*= (i+1); //Denominator is multiplication from 1 to min(r,n-r)

}

cout << "The value of " << n << "C" << r << " is " << num/den; //Prints output

return 0;

}

Ques 3

#include <iostream>

#include <string>

using namespace std;

int main()

{

int t; //No. of test cases

cin >> t;

while(t--){

string str; //Defines string variable to be taken as input

cin>>str; //Takes input string

for(int i=0;str[i]!='\0';i++){ //For loop to iterate through string

if(str[i]>='A'&&str[i]<='Z'){ //Checks whether given letter is upper case or lower case

str[i]=str[i]+'a'-'A'; //Changes upper case to lower case

}

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

str[i]=str[i]+'A'-'a'; //Changes lower case to upper case

}

else{

cout << "Please enter only alphabets as input";

break;

}

}

cout << str << endl; //Prints output string

}

return 0;

}

Ques 4

#include <bits/stdc++.h>

using namespace std;

struct Student

{

string name;

int roll;

string department;

};

int main()

{

vector<Student> data;

int n; //Number of test cases

cin >> n; //Taking input n

while (n--)

{

int q;

cin >> q; //Taking input value either 0 or 1

if (q == 1)

{

Student temp; //creating a struct student if input is 1

cin >> temp.name >> temp.roll >> temp.department; //Taking input related to that student

data.push\_back(temp);

}

else

{

int roll\_check;

cin >> roll\_check; //If input is 0, check roll number

for (int i = 0; i < data.size(); i++) //Iterating through list of students

{

if (data[i].roll == roll\_check)

cout << data[i].name << " " << data[i].roll << " " << data[i].department << endl; //Giving output of that particular student

}

}

}

return 0;

}