PF assignment

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SECTION N

**QUESTION 1:** Write a C++ program that takes four distinct integer numbers from the user. Your program should print the integers in ascending order and then in descending order without using loops, arrays, or any sorting algorithms.

Instead, devise a method that directly compares the numbers to determine their order.

#include <iostream>

using namespace std;

int main() {

int a, b, c, d, Num1, Num2, Num3, Num4, choice;

do

{

cout << "Enter a 1st number: ";

cin >> a;

cout << "Enter a 2nd number: ";

cin >> b;

cout << "Enter a 3rd number: ";

cin >> c;

cout << "Enter a 4th number: ";

cin >> d;

// a is smallest

if (a <= b && a <= c && a <= d)

{

Num1 = a;

// b is 2nd smallest

if (b <= c && b <= d) {

Num2 = b;

if (c <= d) {

Num3 = c;

Num4 = d;

}else {

Num3 = d;

Num4 = c;

}

}

// c is second smallest

else if (c <= b && c <= d){

Num2 = c;

if (b <= d) {

Num3 = b;

Num4 = d;

}else {

Num3 = d;

Num4 = b;

}

}

// d is second smallest

else if (d <= b && d <= c)

{

Num2 = d;

if (b <= c) {

Num3 = b;

Num4 = c;

}else {

Num3 = c;

Num4 = b;

}

}

}

// b is smallest

else if (b <= a && b <= c && b <= d)

{

Num1 = b;

// a is second smallest

if (a <= c && a <= d) {

Num2 = a;

if (c <= d) {

Num3 = c;

Num4 = d;

}else {

Num3 = d;

Num4 = c;

}

}

// c is second smallest

else if (c <= a && c <= d){

Num2 = c;

if (a <= d) {

Num3 = a;

Num4 = d;

}else {

Num3 = d;

Num4 = a;

}

}

// d is second smallest

else if (d <= a && d <= c)

{

Num2 = d;

if (a <= c) {

Num3 = a;

Num4 = c;

}else {

Num3 = c;

Num4 = a;

}

}

}

// c is the smallest

else if (c <= a && c <= b && c <= d)

{

Num1 = c;

// b is second smallest

if (b <= a && b <= d) {

Num2 = b;

if (a <= d) {

Num3 = a;

Num4 = d;

}else {

Num3 = d;

Num4 = a;

}

}

// a is second smallest

else if (a <= b && a <= d){

Num2 = a;

if (b <= d) {

Num3 = b;

Num4 = d;

}else {

Num3 = d;

Num4 = b;

}

}

// d is second smalest

else if (d <= b && d <= a)

{

Num2 = d;

if (b <= a) {

Num3 = b;

Num4 = a;

}else {

Num3 = a;

Num4 = b;

}

}

}

// d is the smallest

else if(d <= a && d <= b && d <= c){

Num1 = d;

//b is second smallest

if (b <= c && b <= a) {

Num2 = b;

if (c <= a) {

Num3 = c;

Num4 = a;

}else {

Num3 = a;

Num4 = c;

}

}

// c is second smallest

else if (c <= b && c <= a){

Num2 = c;

if (b <= a) {

Num3 = b;

Num4 = a;

}else {

Num3 = a;

Num4 = b;

}

}

// a is second smallest

else if (a <= b && d <= c)

{

Num2 = a;

if (b <= c) {

Num3 = b;

Num4 = c;

}else {

Num3 = c;

Num4 = b;

}

}

}

cout << "Ascending Order: " << Num1 << "," << Num2 << "," << Num3 << "," << Num4 << endl;

cout << "Descending Order: " << Num4 << "," << Num3 << "," << Num2 << "," << Num1 << endl;

cout << "Do you want to try again? Press 0 to quit or 1 to try again: "<<endl;

cin >> choice;

} while (choice != 0);

return 0;

}

**QUESTION 2:** You have to develop a restaurant order payment application. For Example, your restaurant is offering the following meals.

#include <iostream>

using namespace std;

int main() {

long double tax,Total\_bill,taxed\_bill;

int choice,tax\_type,currency ,a,temp = 0;

int

Chicken\_Karahi = 1800,

Chicken\_Tikka = 2000,

Chicken\_Haleem = 2200,

Creamy\_Chicken = 2500,

Chicken\_Handi = 800,

quantity;

do

{

cout << "|========================================================================|" << endl;

cout << "|=======================Welcome to UOL Cafe==============================|" << endl;

cout << "|Enter 1: to order a Chicken Karahi========1800Rs========================|" << endl;

cout << "|Enter 2: to order a Chicken Tikka=========2000Rs========================|" << endl;

cout << "|Enter 3: to order a Chicken Haleem========2200Rs========================|" << endl;

cout << "|Enter 4: to order a Creamy Chicken========2500Rs========================|" << endl;

cout << "|Enter 5: to order a Chicken Handi=========800Rs=========================|" << endl;

cout << "|Enter 0: to Quit program================================================|" << endl;

cout << "|========================================================================|" << endl;

cin >> choice;

switch (choice)

{

case 1:

cout << "|how many kg do you want?================================================|"<<endl;

cin>>quantity;

while (quantity <= 0)

{

cout<<"|==============The input was invalid please try again====================|"<<endl;

cin>>quantity;

}

Total\_bill = Chicken\_Karahi \* quantity;

temp = Total\_bill;

Total\_bill += temp;

cout<<"Press 1 to purchase more items? or any other key to continue=============|"<<endl;

cin>>a;

if (a == 1)

{

continue;

}

break;

case 2:

cout << "|how many kg do you want?================================================|"<<endl;

cin>>quantity;

while (quantity <= 0)

{

cout<<"|==============The input was invalid please try again====================|"<<endl;

cin>>quantity;

}

Total\_bill = Chicken\_Tikka \* quantity;

temp = Total\_bill;

Total\_bill += temp;

cout<<"Press 1 to purchase more items? or any other key to continue=============|"<<endl;

cin>>a;

if (a == 1)

{

continue;

}

break;

case 3:

cout << "|how many kg do you want?================================================|"<<endl;

cin>>quantity;

while (quantity <= 0)

{

cout<<"|==============The input was invalid please try again====================|"<<endl;

cin>>quantity;

}

Total\_bill = Chicken\_Haleem \* quantity;

temp = Total\_bill;

Total\_bill += temp;

cout<<"Press 1 to purchase more items? or any other key to continue=============|"<<endl;

cin>>a;

if (a == 1)

{

continue;

}

break;

case 4:

cout << "|how many kg do you want?================================================|"<<endl;

cin>>quantity;

while (quantity <= 0)

{

cout<<"|==============The input was invalid please try again====================|"<<endl;

cin>>quantity;

}

Total\_bill = Creamy\_Chicken \* quantity;

temp = Total\_bill;

Total\_bill += temp;

cout<<"Press 1 to purchase more items? or any other key to continue=============|"<<endl;

cin>>a;

if (a == 1)

{

continue;

}

break;

case 5:

cout << "|how many kg do you want?================================================|"<<endl;

cin>>quantity;

while (quantity <= 0)

{

cout<<"|==============The input was invalid please try again====================|"<<endl;

cin>>quantity;

}

Total\_bill = Chicken\_Handi \* quantity;

temp = Total\_bill;

Total\_bill += temp;

cout<<"Press 1 to purchase more items? or any other key to continue=============|"<<endl;

cin>>a;

if (a == 1)

{

continue;

}

break;

default:

cout<<"|==============The input was invalid please try again====================|"<<endl;

continue;

}

if (Total\_bill > 3000)

{

tax = Total\_bill \* 5 / 100;

taxed\_bill = Total\_bill + tax;

}else if(Total\_bill <= 3000 && Total\_bill > 1000)

{

tax = Total\_bill \* 2 / 100;

taxed\_bill = Total\_bill + tax;

}else

{

taxed\_bill = Total\_bill;

}

cout << "|========================================================================|" << endl;

cout << "|How would you like to pay?==============================================|" << endl;

cout << "|Enter 1: Dollars========================================================|" << endl;

cout << "|Enter 2: Euros==========================================================|" << endl;

cout << "|Enter 3: Rupees=========================================================|" << endl;

cout << "|========================================================================|" << endl;

cin >> currency;

switch (currency)

{

case 1:

Total\_bill /= 165 ;

taxed\_bill /= 165 ;

tax /= 165;

cout << "|=====================Thank you for the purchase=========================|" << endl;

cout << "|Your total bill without taxes is: " <<Total\_bill<<"$"<<"==============================|"<<endl;

cout << "|Your total bill with taxes is: " <<taxed\_bill<<"$"<<"=================================|"<<endl;

cout << "|Your total taxes are: " <<tax<<"$"<<"==========================================|"<<endl;

cout << "|========================================================================|" << endl;

break;

case 2:

Total\_bill /= 193 ;

taxed\_bill /= 193 ;

tax /= 193;

cout << "|=====================Thank you for the purchase=========================|" << endl;

cout << "|Your total bill without taxes is: " <<Total\_bill<<"Eu"<<"=============================|"<<endl;

cout << "|Your total bill with taxes is: " <<taxed\_bill<<"Eu"<<"=================================|"<<endl;

cout << "|Your total taxes are: " <<tax<<"Eu"<<"=============================================|"<<endl;

cout << "|========================================================================|" << endl;

break;

case 3:

cout << "|=====================Thank you for the purchase=========================|" << endl;

cout << "|Your total bill without taxes is: " <<Total\_bill<<"Rs"<<"================================|"<<endl;

cout << "|Your total bill with taxes is: " <<taxed\_bill<<"Rs"<<"===================================|"<<endl;

cout << "|Your total taxes are: " <<tax<<"Rs"<<"=============================================|"<<endl;

cout << "|========================================================================|" << endl;

break;

default:

cout<<"|==============The input was invalid please try again====================|"<<endl;

continue;

}

cout << "|Do you want to order again? Press 0 to Quit and 1 to try again==========|"<<endl;

cout << "|========================================================================|" << endl;

cin>>choice;

} while ( choice != 0);

return 0;

}