



FUNDAMENTAL OF PROGRAMMING

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Convert the following while loop to a do-while loop:

```
int x = 1;

while (x > 0){

cout << "enter a number: ";

cin >> x;}
```

CODE:

```
#include<iostream>

using namespace std;

int main(){

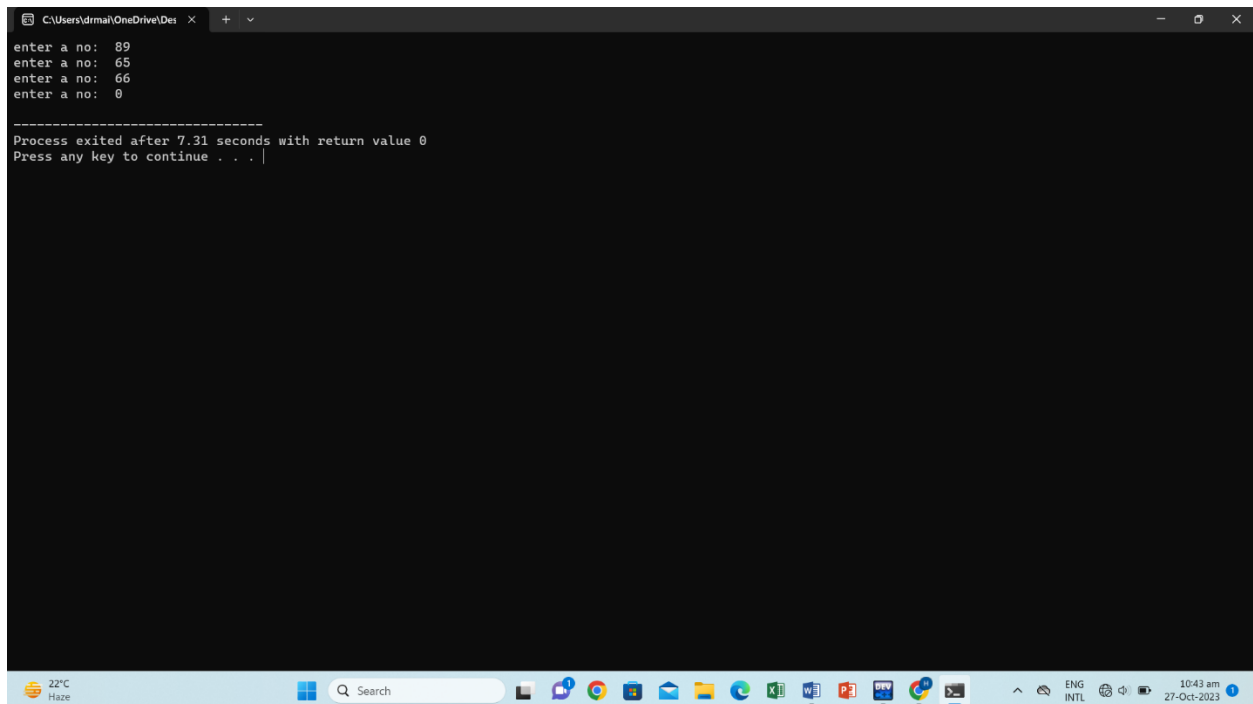
int x=1;

do{cout<<"enter a no: ";

    cin>>x;}

    while(x>0);{}    return 0;    }
```

OUTPUT:



```
C:\Users\drmai\OneDrive\Des x + v
enter a no: 89
enter a no: 65
enter a no: 66
enter a no: 0

-----
Process exited after 7.31 seconds with return value 0
Press any key to continue . . .
```

Use a do while loop to make a simple calculator for two numbers. Insert buttons for it to ask again and for termination.

CODE:

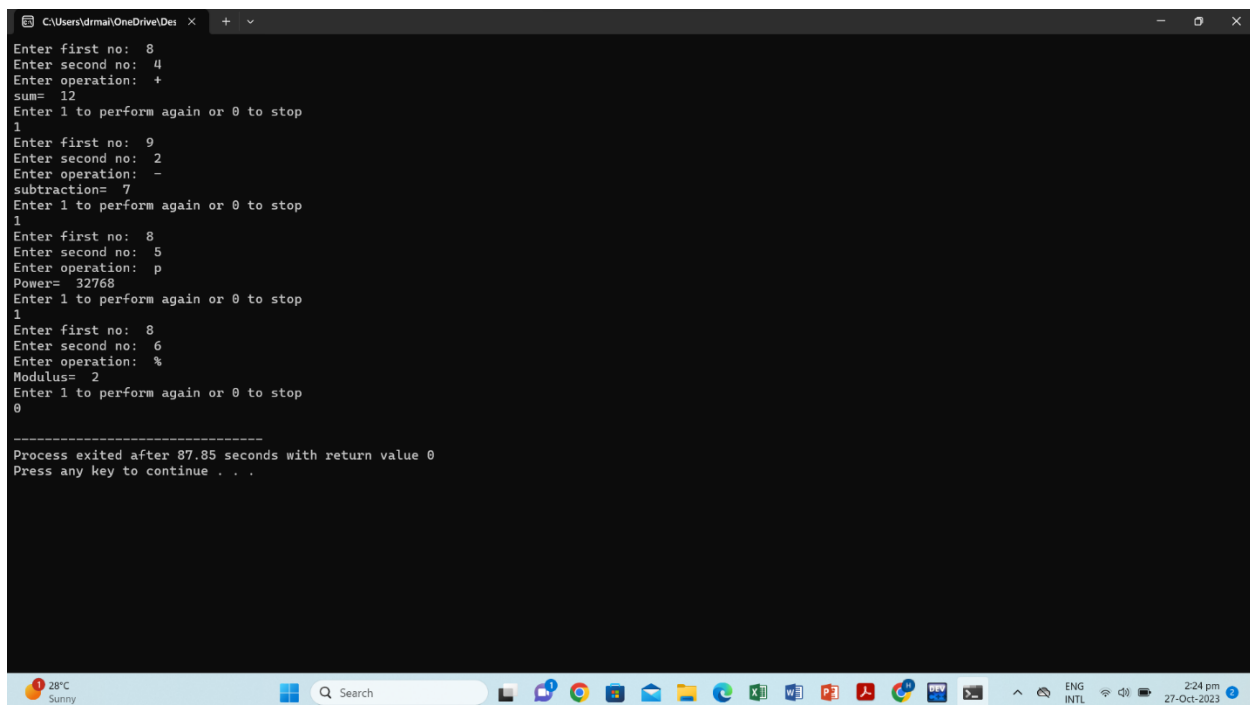
```
#include<iostream>
#include<math.h>
using namespace std;
int main(){
double x,y;
int z;
char oper;
do{
    cout<<"Enter first no: ";
    cin>>x;
    cout<<"Enter second no: ";
    cin>>y;
    cout<<"Enter operation: ";
    cin>>oper;
    if(oper=='+'){
        cout<<"sum= "<<x+y<<endl;}
    else if(oper=='-'){
        cout<<"subtraction= "<<x-y<<endl;}
    else if(oper=='*'){
        cout<<"Multiplication= "<<x*y<<endl;}
```

```

else if(oper=='/'){
    cout<<"Division= "<<x/y<<endl;}
else if(oper=='%'){
    cout<<"Modulus= "<<fmod(x,y)<<endl;}
else if(oper=='p'){
    cout<<"Power= "<<pow(x,y)<<endl;}
else {
    cout<<"Invalid input "<<endl;}
    cout<<"Enter 1 to perform again or 0 to stop"<<endl;
    cin>>z;}
while(z==1);
return 0;}

```

OUTPUT:



```

C:\Users\drmai\OneDrive\Des x + v
Enter first no: 8
Enter second no: 4
Enter operation: +
sum= 12
Enter 1 to perform again or 0 to stop
1
Enter first no: 9
Enter second no: 2
Enter operation: -
subtraction= 7
Enter 1 to perform again or 0 to stop
1
Enter first no: 8
Enter second no: 5
Enter operation: p
Power= 32768
Enter 1 to perform again or 0 to stop
1
Enter first no: 8
Enter second no: 6
Enter operation: %
Modulus= 2
Enter 1 to perform again or 0 to stop
0

-----
Process exited after 87.85 seconds with return value 0
Press any key to continue . . .

```

Write programs with while or do while loops that compute:

a. The sum of all even numbers between 2 and 100 (inclusive).

```
#include<iostream>

using namespace std;

int main(){

    int x=2,sum=0;

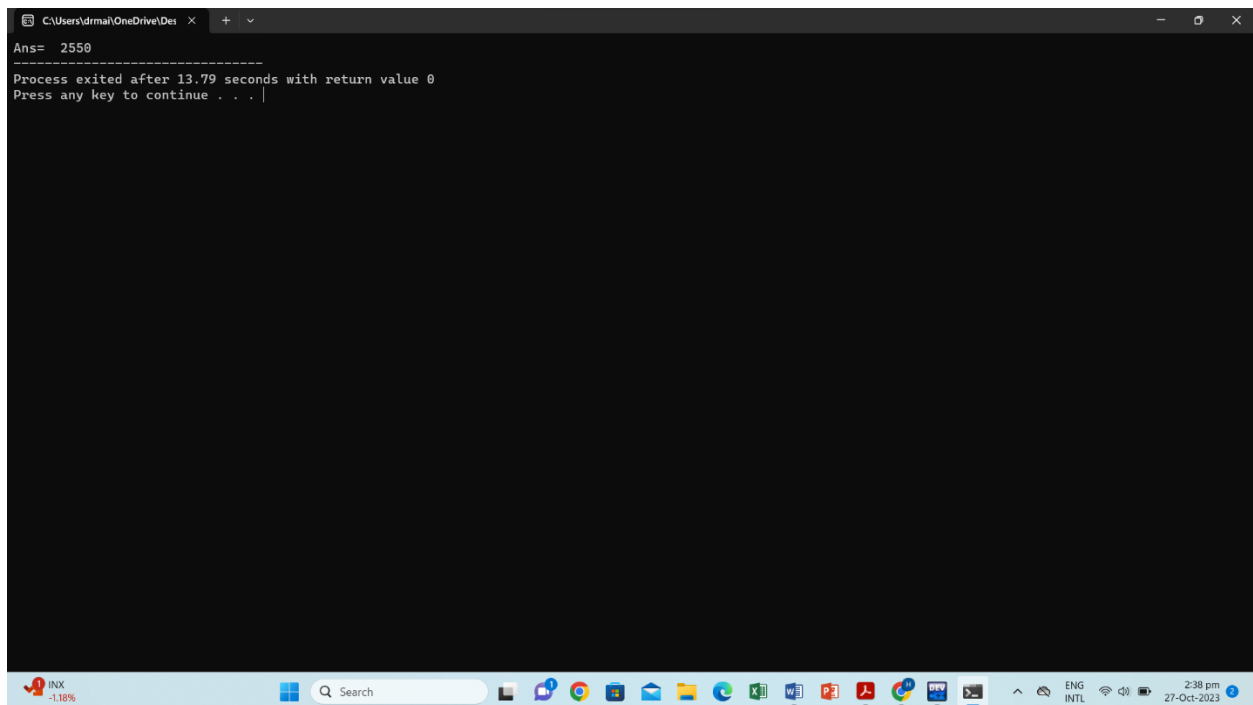
    while(x<=100){

        sum=sum+x;

        x=x+2;}

    cout<<"Ans= "<<sum;}
```

OUTPUT:



```
C:\Users\drrmai\OneDrive\Des x + v
Ans= 2550
-----
Process exited after 13.79 seconds with return value 0
Press any key to continue . . .
```

b. The sum of all squares between 1 and 100 (inclusive).

Code:

```
#include <iostream>

using namespace std;

int main() {

    int sum=0,x=1;

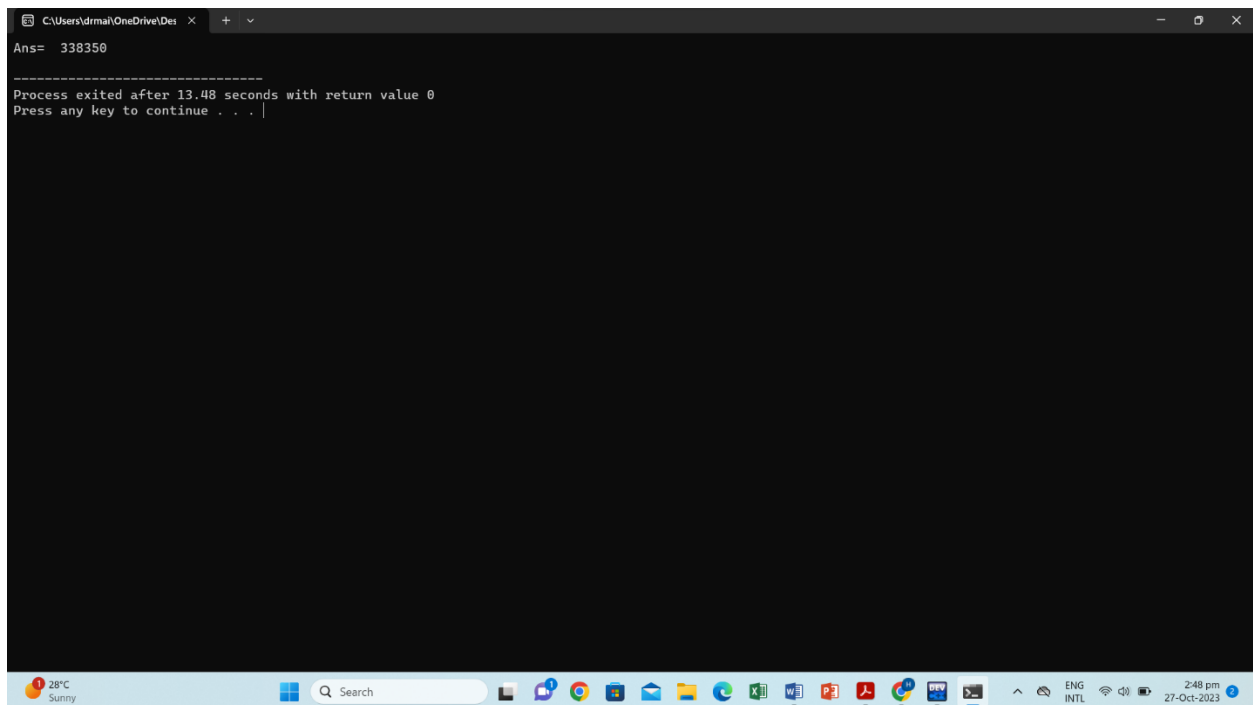
    while (x<=100){

        sum+=x*x;

        x++;}

    cout<<"Ans= " <<sum<<endl;}
```

OUTPUT:



The screenshot shows a Windows command prompt window with a dark background. The title bar at the top indicates the file path 'C:\Users\drmai\OneDrive\Des'. The output of the program is displayed in white text: 'Ans= 338350'. Below this, a separator line of dashes is shown, followed by the message 'Process exited after 13.48 seconds with return value 0' and 'Press any key to continue . . .'. The Windows taskbar is visible at the bottom, showing the system clock as 2:48 pm on 27-Oct-2023, and the weather as 28°C Sunny.

```
C:\Users\drmai\OneDrive\Des x + v
Ans= 338350
-----
Process exited after 13.48 seconds with return value 0
Press any key to continue . . .
```

Write programs with while or do while loops that compute:

a. All powers of 2 from 20 up to 220.

CODE:

```
#include <iostream>

#include <math.h>

using namespace std;

int main() {

    int x= 0;

    while(x<=20) {

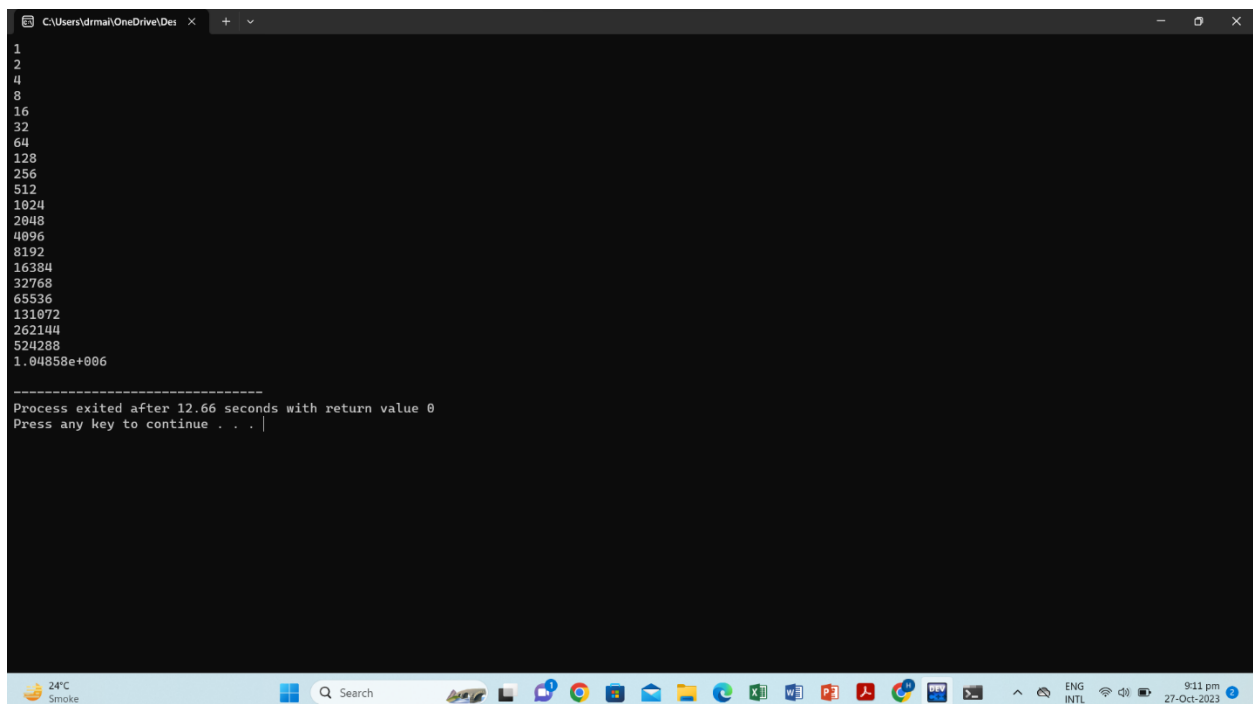
        double y=pow(2,x);

        cout<<y<<endl;

        x++;}

    return 0;}
```

OUTPUT:



```
C:\Users\drmal\OneDrive\Des x + v
1
2
4
8
16
32
64
128
256
512
1024
2048
4096
8192
16384
32768
65536
131072
262144
524288
1.04858e+006

-----
Process exited after 12.66 seconds with return value 0
Press any key to continue . . .
```

b. The sum of all odd numbers between a and b (inclusive), where a and b are inputs.

CODE:

```
#include <iostream>
using namespace std;
int main() {
    int x,y;
    int sum=0;
    cout<<"Enter first no: ";
    cin>>x;
    cout<<"Enter second no: ";
    cin>>y;
    if(x%2==0){
        x++;}
    while(x<=y){
        sum+=x;
        x+=2; }
    cout<<sum<<endl;
    return 0;}
```

OUTPUT:


```
C:\Users\drmai\OneDrive\Des x + v
Enter first no: 1
Enter second no: 9
25

-----
Process exited after 12.85 seconds with return value 0
Press any key to continue . . . |
```

22°C Smoke

Search

ENG INTL 9:26 pm 27-Oct-2023