



BUBT

BANGLADESH UNIVERSITY OF
BUSINESS AND TECHNOLOGY

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/*1. Write a C++ program to find out first n perfect number where n is the input from user*/

```
#include <iostream>
#include <cctype>
using namespace std;
```

```
int main(){
    int n,i=1,sum=0;
    cout << "Enter a number: ";
    cin >> n;
    while(i<n){
        if(n%i==0)
            sum=sum+i;
        i++;
    }

    if(sum==n)
        cout << i << " is a perfect number\n";
    else
        cout << i << " is not a perfect number\n";
    system("pause");

    return 0;
}
```

/*2. Write a C++ program to find first n Fibonacci number where n is the input from user.*/

```
#include <iostream>
using namespace std;

int main() {
    int n, t1 = 0, t2 = 1, nextTerm = 0;

    cout << "Enter the number of terms: ";
    cin >> n;

    cout << "Fibonacci Series: ";

    for (int i = 1; i <= n; ++i) {
        // Prints the first two terms.
        if(i == 1) {
            cout << t1 << ", ";
            continue;
        }
        if(i == 2) {
            cout << t2 << ", ";
            continue;
        }
        nextTerm = t1 + t2;
        t1 = t2;
        t2 = nextTerm;

        cout << nextTerm << ", ";
    }
    return 0;
}
```

```
/*3. Write a C++ program to print out all Armstrong  
number between 1 and 10000 */
```

```
#include <iostream>
```

```
#include <cmath>
```

```
using namespace std;
```

```
int main() {
```

```
    int num1, num2, i, num, digit, sum, count;
```

```
    cout << "Enter first number: ";
```

```
    cin >> num1;
```

```
    cout << "Enter second number: ";
```

```
    cin >> num2;
```

```
    if (num1 > num2) {
```

```
        num1 = num1 + num2;
```

```
        num2 = num1 - num2;
```

```
        num1 = num1 - num2;
```

```
    }
```

```
    cout << "Armstrong numbers between " << num1 << " and " << num2  
<< " are: " << endl;
```

```
    for(i = num1; i <= num2; i++) {
```

```
        count = 0;
```

```
        num = i;
```

```
        while(num > 0) {
```

```
            ++count;
```

```
            num /= 10;
```

```
        }
```

```
sum = 0;

num = i;

while(num > 0) {
    digit = num % 10;
    sum = sum + pow(digit, count);
    num /= 10;
}

if(sum == i) {
    cout << i << ", ";
}
}

return 0;
}
```

/*4. Write a function which receives a float and an int from main(), finds the product of these two and returns the product which is printed through main() in C++.*/

```
#include<iostream>
```

```
#include<conio.h>
```

```
using namespace std;
```

```
float prod(float a, int b);
```

```
int main()
```

```
{
```

```
    float num1;
```

```
    int num2;
```

```
    cout<<"Enter Decimal value: ";
```

```
    cin>>num1;
```

```
    cout<<"Enter Integer value: ";
```

```
    cin>>num2;
```

```
    cout<<"Product of Two Numbers is: "<<prod(num1,num2);
```

```
    getch();
```

```
}
```

```
float prod(float a, int b)
```

```
{
```

```
    float pro;
```

```
    pro=a*b;
```

```
    return pro;
```

```
}
```

/*5. Write a C ++ program which will take an input from user and calculate the grade of a student according to BUBT grading policy based on that input.*/

```
#include<iostream>
using namespace std;
int main()
{
int A;
cin>>A;
if (A>=80)
cout<<"mark is A+";
else if (A>=75 && A<80)
cout<<"mark is A";
else if (A>=70 && A<75)
cout<<"mark is A-";
else if (A>=65 && A<70)
cout<<"mark is B+";
else if (A>=60 && A<65)
cout<<"mark is B";
else if (A>=55 && A<60)
cout<<"mark is B-";
else if(A>=50 && A<55)
cout<<"mark is C+";
else if (A>=45 && A<50)
cout<<"mark is C";
else if (A>=40 && A<45)
cout<<"mark is D";
else
cout<<"mark is F";
return 0;
}
```