

Write a program that displays all the even integers between 1 and 100, inclusive

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```
#include <iostream>
#include <iomanip>
using namespace std;
int main()
{
    for(int i=1;i<=100;i++)
        if(i%2==0)
            cout << setw(4) << i;
    return 0;
}
```



Write a program that performs multiplication of integers by repeated addition. The program should ask the user to enter two integers, which the program stores in `num1` and `num2`. Using an accumulator, the program should then add `num1` to itself `num2` times. Finally, the program should display the resulting product.

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```
#include <iostream>
#include <iomanip>
using namespace std;
int main()
{
    int num1,num2,result=0;
    cout << "Enter the num1 , num2: ";
    cin >> num1 >> num2;
    for(int i=0;i<num2;i++)
        result+=num1;
    cout << "\nthe resulting product: " << result << endl;
    return 0;
}
```



Write a program that raises an integer to a positive integer power. The program should prompt the user to enter the base and the exponent. The program should calculate the power by multiplying base by itself exponent times. Finally, the program should display the result. Test your program by making it calculate  $2^5$  and  $5^4$ .

```
#include <iostream>
using namespace std;
int main()
{
    int base,exponent,result=1;
    cout << "enter the base: ";
    cin >> base;
    cout << "\nenter the exponent: ";
    cin >> exponent;
    for(int i=0;i<exponent;i++)
        result*=base;
    cout << "\nthe result: " << result << endl;
    return 0;
}
```



A cattle-feed company needs a program to help process feed orders. The program is to process an indeterminate number of orders. Each customer orders one or both of two types of feed, A and B. Feed A costs \$2.50 per 100 pounds and feed B costs \$3.15 per 100 pounds. Amounts less than 100 pounds are to be charged proportionally. For each customer, the program should ask the user to enter the actual number of pounds ordered for each of feeds A and B to the nearest tenth of a pound. The program should display the amount and cost of each type of feed and the total cost of the order. When no more customers are to be processed, the program should display the total number of customers processed, the total amount of feed A ordered, and the total amount of feed B ordered to the nearest tenth of a pound, and the total receipts. Write the required program.

```
#include <iostream>
#include <iomanip>
using namespace std;
int main()
{
    int feeds,poundsA,poundsB,t_poundsA=0,t_poundsB=0,num=0;
    float costA,costB,t_costs=0;
    char R;
    while(R != 'n'){
        cout << "\n1.A feed\n2.B feed\n3. A,b feed " <<endl;
        cin >> feeds;
        if(feeds==1)
        {
            cout << "\nenter the actual number of pounds for A: ";
```



```

cin >> poundsA;
costA=(2.5/100)*poundsA;
t_costs+=costA;
t_poundsA+=poundsA;
cout << "\nthe amount of A: " << poundsA;
cout << "\nthe cost of A: " << costA;
cout << "\nthe total cost of the order: " << costA;
cout << "\nto another order press (y) or not (n): ";
cin >> R;
num++;
}
else if(feeds==2)
{
cout << "\nenter the actual number of pounds for B: ";
cin >> poundsB;
costB=(3.15/100)*poundsB;
t_costs+=costB;
t_poundsB+=poundsB;
cout << "\nthe amount of B: " << poundsB;
cout << "\nthe cost of B: " << costB;
cout << "\nthe total cost of the order: " << costB;
cout << "\nto another order press (y) or not (n): ";
cin >> R;
num++;
}
else if(feeds==3)
{
cout << "\nenter the actual number of pounds for A : ";
cin >> poundsA;
cout << "\nenter the actual number of pounds for B: ";
cin >> poundsB;

```



```
costA=(2.5/100)*poundsA;
costB=(3.15/100)*poundsB;
t_costs+=(costA+costB);
t_poundsA+=poundsA;
t_poundsB+=poundsB;
cout << "\nthe amount of A: " << poundsA;
cout << "\nthe amount of B: " << poundsB;
cout << "\nthe cost of A: " << costA;
cout << "\nthe cost of B: " << costB;
cout << "\nthe total cost of the order: " << costA+costB;
cout << "\nto another order press (y) or not (n): ";
cin >> R;
num++;
}
}
cout << "\nthe total number of customers processed: " << num;
cout << "\nthe total amount of feed A ordered: " << t_poundsA;
cout << "\nthe total amount of feed B ordered: " << t_poundsB;
cout << "\nthe total receipts: " << t_costs << endl;
return 0;
}
```

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A computer science instructor needs a program that averages the grades she receives on a quiz she gives to her class. Each grade is an integer between 0 and 100. She does not know the number of grades at this time. Write a program that asks the user to enter quiz grades one at a time. After the user has completed entering grades, the program should display the number of grades entered and the sum of the grades entered. The program should also display the average of the grades, rounded to the nearest tenth.

---

```
#include <iostream>
using namespace std;
int main()
{
    int grades,num=0,sum=0;
    char out;
    for(;;)
    {
        cout << "\nto input grades press (y) or not press (n): ";
        cin >> out ;
        if(out == 'n' || out == 'N')
            break;
        cout << "\nenter quiz grades: ";
        cin >> grades ;
        while (grades<0 || grades>100)
        {
            cout << "\nenter quiz grades between 0 and 100: ";
            cin >> grades;
        }
        num++;
        sum+=grades;
    }
    cout << "\nthe number of grades entered: " << num;
    cout << "\nthe sum of the grades entered: " << sum;
    cout << "\nthe average of the grades: " << sum/num << endl;
    return 0;
}
```

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A computer science instructor wants you to write a program to compute final grades for her Introduction to Computers course. The program is to process an indeterminate number of students. For each student the program should ask the user to enter the mid-term and final exam scores and then display the student's final grade. The final grade is the sum of 45% of the mid-term exam score and 55% of the final exam score. After it processes all the students, the program should display the number of students it processed, and the average mid-term exam score, average final exam score, and average final grade all to the nearest tenth. Write the required program.

---

```
#include <iostream>
#include <iomanip>
using namespace std;
int main()
{
    int mid_term,final_exam,t_mid_term=0,t_final_exam=0,student_final,num=0,sum=0
    ,t_student_final=0;
    char out;
    for(;;)
    {
        cout << "\nenter the mid-term scores: ";
        cin >> mid_term ;
        cout << "\nenter the final exam scores: ";
        cin >> final_exam ;
        num++;
        student_final=((mid_term*45)/100)+((final_exam*55)/100);
        t_mid_term+=((mid_term*45)/100);
        t_final_exam+=((final_exam*55)/100);
        t_student_final+=student_final;
        cout << "\nthe student's final grade: " <<student_final;
        cout << "\nto input scores again press (y) or not press (n): ";
        cin >> out ;
        if(out == 'n'||out == 'N')
            break;
    }
    cout << "\nthe number of students it processed: " << num;
    cout << "\nthe average mid-term exam score: " << t_mid_term/num;
    cout << "\nthe average final exam score: " << t_final_exam/num;
    cout << "\nthe average final grade score: " << t_student_final/num << endl;
    return 0;
}
```

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