

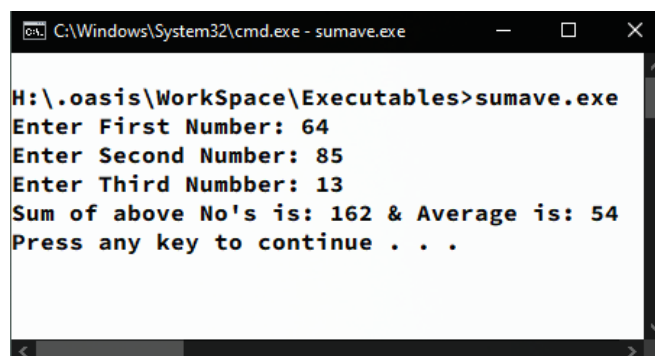
**/\* C++ PROGRAM TO SUM & AVERAGE of 3 NUMBERS. \*/**

```
#include <iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int num1, num2, num3, sum; float avg;
    cout << "Enter First Number: ";
    cin >> num1;
    cout << "Enter Second Number: ";
    cin >> num2;
    cout << "Enter Third Numbber: ";
    cin >> num3;
    sum = num1 + num2 + num3;
    avg = sum / 3;
    cout << "Sum of above No's is: " << sum << " & Average is: " << avg
    << endl;
    system("pause");
    return 0;
}
```

**Output:**



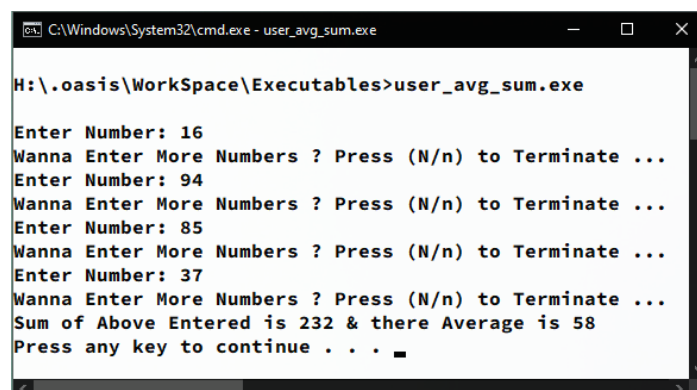
```
C:\Windows\System32\cmd.exe - sumave.exe

H:\.oasis\WorkSpace\Executables>sumave.exe
Enter First Number: 64
Enter Second Number: 85
Enter Third Numbber: 13
Sum of above No's is: 162 & Average is: 54
Press any key to continue . . .
```

**/\* C++ PROGRAM TO find SUM & AVERAGE of N numbers. \*/**

```
#include<iostream>
#include<conio.h>
using namespace std;
int main(int argc, char const *argv[]) {
    float num, sum = 0, avg, count=0;
    char ch;
    do{
        cout << "\nEnter Number: ";
        cin >> num;
        sum += num;
        count++;
        avg = sum / count;
        cout << "Wanna Enter More Numbers ? Press (N/n) to Terminate ...";
        ch = getch();
    } while (ch != 'N' && ch != 'n');
    cout << "\nSum of Above Entered is " << sum << " & their Average is " <<
    avg << endl;
    system("pause");
    return 0;
}
```

**Output:**

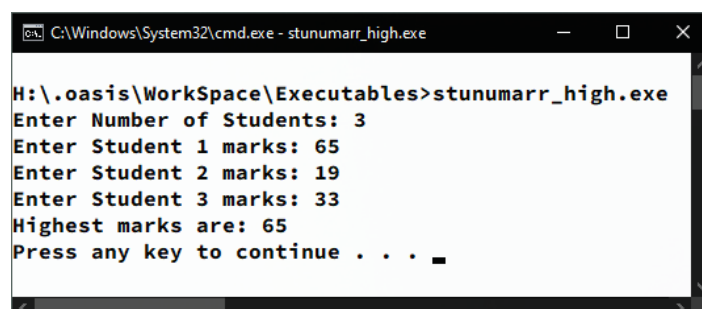


```
C:\Windows\System32\cmd.exe - user_avg_sum.exe
H:\.oasis\WorkSpace\Executables>user_avg_sum.exe
Enter Number: 16
Wanna Enter More Numbers ? Press (N/n) to Terminate ...
Enter Number: 94
Wanna Enter More Numbers ? Press (N/n) to Terminate ...
Enter Number: 85
Wanna Enter More Numbers ? Press (N/n) to Terminate ...
Enter Number: 37
Wanna Enter More Numbers ? Press (N/n) to Terminate ...
Sum of Above Entered is 232 & there Average is 58
Press any key to continue . . .
```

**/\* C++ PROGRAM TO GET HIGHEST MARKS AMONG N STUDENTS. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int top = 0, max;
    cout << "Enter Number of Students: ";
    cin >> max;
    int num[max];
    for (int i = 0; i < max; i++) {
        cout << "Enter Student " << i + 1 << " marks: ";
        cin >> num[i];
        if (num[i] > top)
            top = num[i];
    }
    cout << "Highest marks are: " << top << endl;
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - stunumarr_high.exe
H:\.oasis\Workspace\Executables>stunumarr_high.exe
Enter Number of Students: 3
Enter Student 1 marks: 65
Enter Student 2 marks: 19
Enter Student 3 marks: 33
Highest marks are: 65
Press any key to continue . . .
```

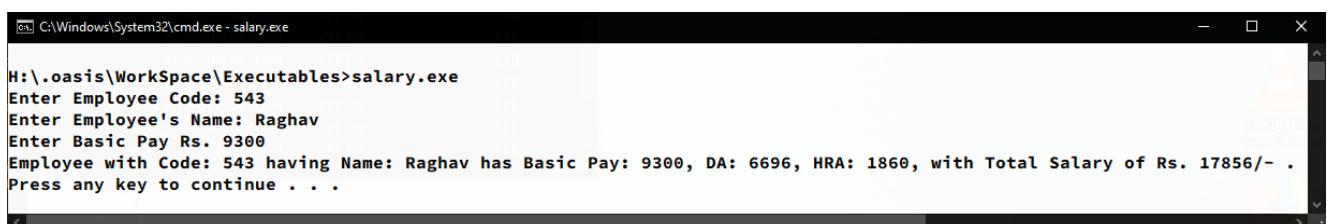
**/\* C++ PROGRAM TO CALCULATE NET PAY of Employee. \*/**

```
#include <iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    float bp, da, hra, net, code; string name;
    cout << "Enter Employee Code: ";
    cin >> code;
    cout << "Enter Employee's Name: ";
    cin >> name;
    cout << "Enter Basic Pay Rs. ";
    cin >> bp;
    da = 0.72 * bp;
    hra = 0.20 * bp;
    net = bp + da + hra;
    cout << "Employee with Code: " << code << " having Name: " << name <<
    " has Basic Pay: " << bp << ", DA: " << da << ", HRA: " << hra << ", with
    Total Salary of Rs. " << net << "/- ." << endl;
    system("pause");
    return 0;
}
```

## Output:



The screenshot shows a Windows command prompt window titled "C:\Windows\System32\cmd.exe - salary.exe". The prompt is at "H:\.oasis\WorkSpace\Executables>". The user has entered "salary.exe". The program prompts for "Enter Employee Code: 543", "Enter Employee's Name: Raghav", and "Enter Basic Pay Rs. 9300". The final output is: "Employee with Code: 543 having Name: Raghav has Basic Pay: 9300, DA: 6696, HRA: 1860, with Total Salary of Rs. 17856/- . Press any key to continue . . .".

**/\* C++ PROGRAM TO IMPLEMENT A Simple Calculator. \*/**

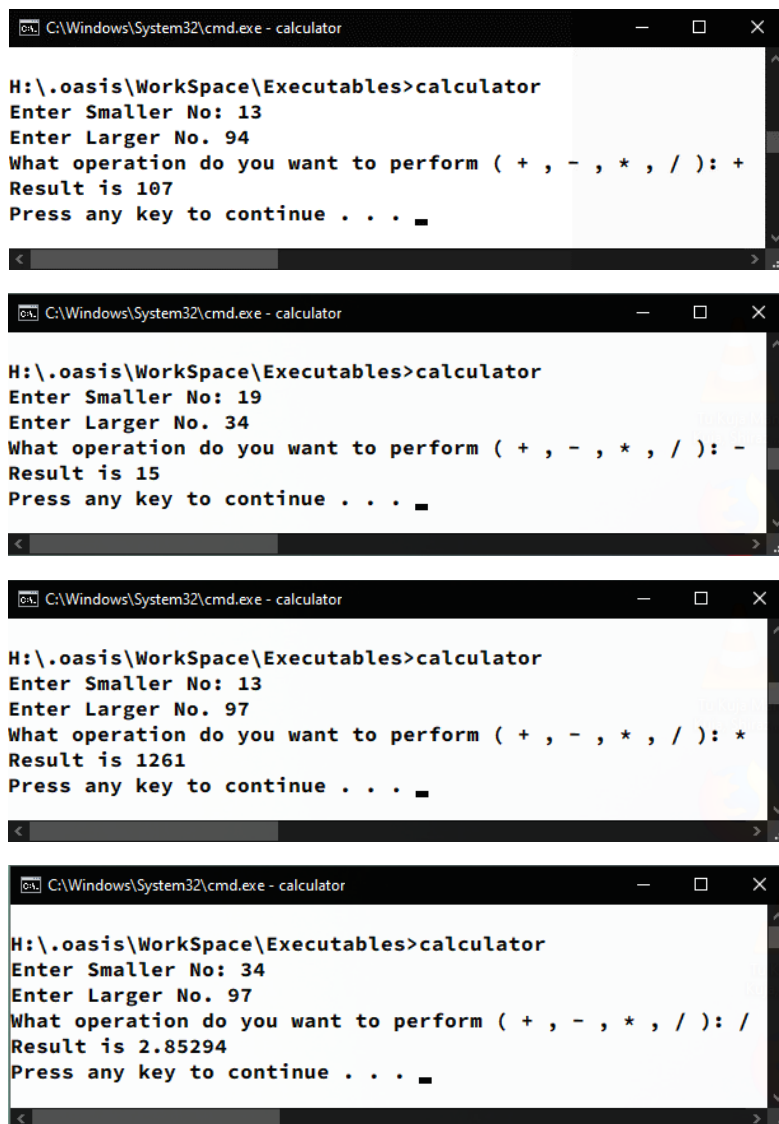
```
#include <iostream>
#include <conio.h>
using namespace std;
int main(int argc, char const *argv[]) {
    float x, y, res; char ch; bool repeat;
    cout << "Enter Smaller No: ";
    cin >> x;
    cout << "Enter Larger No. ";
    cin >> y;
    do {
        repeat = false;
        cout << "What operation do you want to perform ( + , - , * , / ): ";
        cin >> ch;
        switch (ch) {
            case '+':
                res = x + y;
                break;
            case '-':
                res = y - x;
                break;
            case '*':
                res = x * y;
                break;
            case '/':
                res = y / x;
                break;
            default:
                cout << "Wrong Selection! Choose Again !!!\n";
```

```

        repeat = true;
        break;
    }
} while (repeat);
cout << "Result is " << res << endl;
system("pause");
return 0;
}

```

## Output:



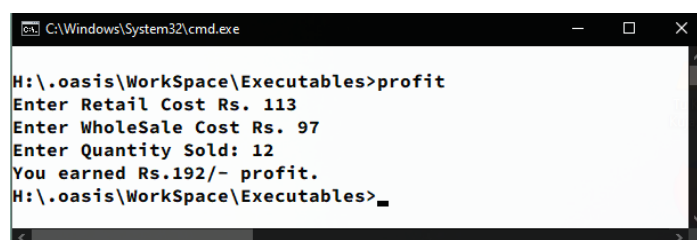
**/\* C++ PROGRAM TO CALCULATE GENERATED PROFIT. \*/**

```
#include<iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    float quantity, retail_price, wholesale_price, profit;
    cout << "Enter Retail Cost Rs. ";
    cin >> retail_price;
    cout << "Enter WholeSale Cost Rs. ";
    cin >> wholesale_price;
    cout << "Enter Quantity Sold: ";
    cin >> quantity;
    profit = quantity * (retail_price - wholesale_price);
    cout << "You earned Rs." << profit << "/- profit.";
    return 0;
}
```

**Output:**

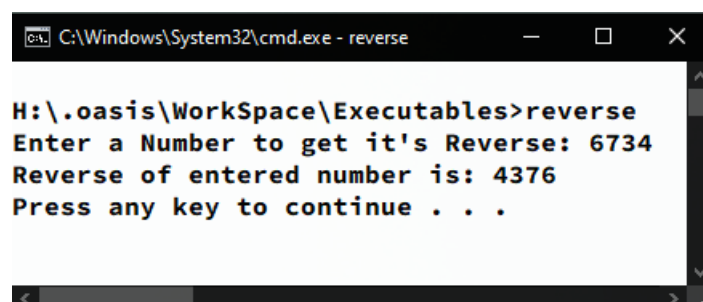


The screenshot shows a Windows command prompt window titled "C:\Windows\System32\cmd.exe". The prompt is at "H:\.oasis\WorkSpace\Executables>". The user has entered the command "profit". The program then prompts for "Enter Retail Cost Rs. 113", "Enter WholeSale Cost Rs. 97", and "Enter Quantity Sold: 12". Finally, it displays the output: "You earned Rs.192/- profit." and returns to the prompt "H:\.oasis\WorkSpace\Executables>".

**/\* C++ PROGRAM TO GET REVERSE OF A NUMBER. \*/**

```
#include<iostream>
using namespace std;
int main(int argc, char const *argv[]){
    int num, rev = 0;
    cout << "Enter a Number to get it's Reverse: ";
    cin >> num;
    while(num > 0){
        rev = (rev * 10) + (num % 10);
        num /= 10;
    }
    cout << "Reverse of entered number is: " << rev << endl;
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - reverse
H:\.oasis\Workspace\Executables>reverse
Enter a Number to get it's Reverse: 6734
Reverse of entered number is: 4376
Press any key to continue . . .
```



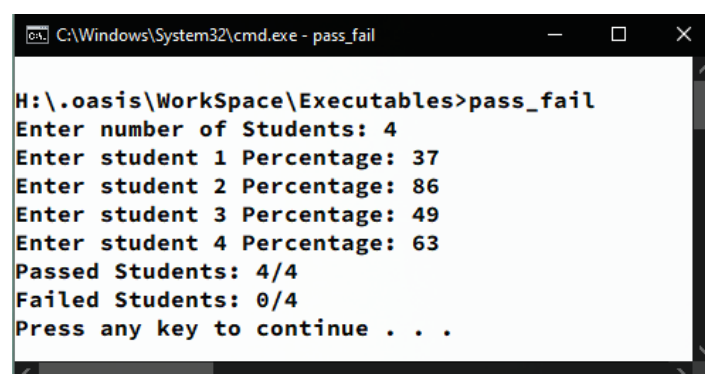
**/\* C++ PROGRAM TO find NUMBER of PASSED & Failed STUDENTS AMONG N STUDENTS. \*/**

```
#include <iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int students, percentage, pass = 0, fail = 0;
    cout << "Enter number of Students: ";
    cin >> students;
    for (int i = 0; i < students; i++) {
        cout << "Enter student " << i + 1 << " Percentage: ";
        cin >> percentage;
        if (percentage > 100) {
            i--;
            cout << "Percentage can't be greater than 100% :)" << endl;
        }
        else if (percentage >= 33 && percentage <= 100) pass++;
        else fail++;
    }
    cout << "Passed Students: " << pass << "/" << students << endl;
    cout << "Failed Students: " << fail << "/" << students << endl;
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - pass_fail

H:\.oasis\WorkSpace\Executables>pass_fail
Enter number of Students: 4
Enter student 1 Percentage: 37
Enter student 2 Percentage: 86
Enter student 3 Percentage: 49
Enter student 4 Percentage: 63
Passed Students: 4/4
Failed Students: 0/4
Press any key to continue . . .
```

**/\* C++ PROGRAM TO find LARGEST, SECOND LARGEST & SMALLEST NUMBER AMONG N NUMBERS. \*/**

```
#include <iostream>
#include <conio.h>
using namespace std;
int main(int argc, char *argv[]) {
    int smallest, largest, sLarge, num;
    char ch;
    cout << "Enter First No.: ";
    cin >> num;
    smallest = largest = sLarge = num;
    do {
        cout << "Enter Next number: ";
        cin >> num;
        if (num > largest){
            sLarge = largest;
            largest = num;
        } else if (num < smallest)
            smallest = num;
        cout << "Wanna enter more ? (Press N/n to EXIT)\n";
        ch = getch();
    } while (ch != 'n' && ch != 'N');
    system("cls");
    cout << "Largest number: " << largest << endl;
    cout << "Second Largest number: " << sLarge << endl;
    cout << "Smallest number: " << smallest << endl;
    system("pause");
    return 0;
}
```

Output:

```
C:\Windows\System32\cmd.exe - large_small

H:\.oasis\WorkSpace\Executables>large_small
Enter First No.: 364
Enter Next number: 313
Wanna enter more ? (Press N/n to EXIT)
Enter Next number: 74
Wanna enter more ? (Press N/n to EXIT)
Enter Next number: 474
Wanna enter more ? (Press N/n to EXIT)
Enter Next number: 76
Wanna enter more ? (Press N/n to EXIT)
Enter Next number: 34
Wanna enter more ? (Press N/n to EXIT)
Enter Next number: 671
Wanna enter more ? (Press N/n to EXIT)
Enter Next number: 39
Wanna enter more ? (Press N/n to EXIT)
_
```

```
C:\Windows\System32\cmd.exe - large_small

Largest number: 671
Second Largest number: 474
Smallest number: 34
Press any key to continue . . . _
```

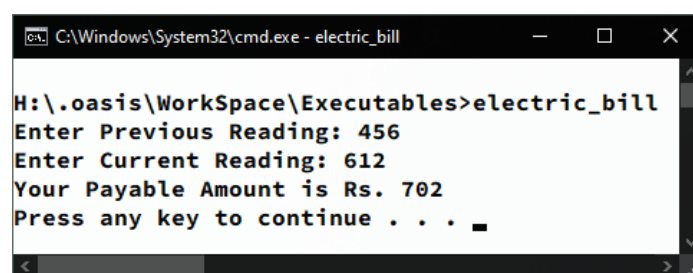
**/\* C++ PROGRAM TO GET ELECTRIC Bill AMOUNT AT fixed RATES. \*/**

```
#include<iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    float pre_read, cur_read, units;
    cout << "Enter Previous Reading: ";
    cin >> pre_read;
    cout << "Enter Current Reading: ";
    cin >> cur_read;
    units = cur_read - pre_read;
    if(units < 200){
        cout << "Your Payable Amount is Rs. " << units * 4.50 << endl;
    }else if(units >= 200 && units < 300){
        cout << "Your Payable Amount is Rs. " << units * 5.00 << endl;
    }else if(units >= 300 && units < 400){
        cout << "Your Payable Amount is Rs. " << units * 5.50 << endl;
    }else if(units >= 400){
        cout << "Your Payable Amount is Rs. " << units * 6.00 << endl;
    }
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - electric_bill
H:\.oasis\WorkSpace\Executables>electric_bill
Enter Previous Reading: 456
Enter Current Reading: 612
Your Payable Amount is Rs. 702
Press any key to continue . . .
```

**/\* C++ PROGRAM TO GET NO. of VOTERS IN A TOWN GIVEN THEIR AGES. \*/**

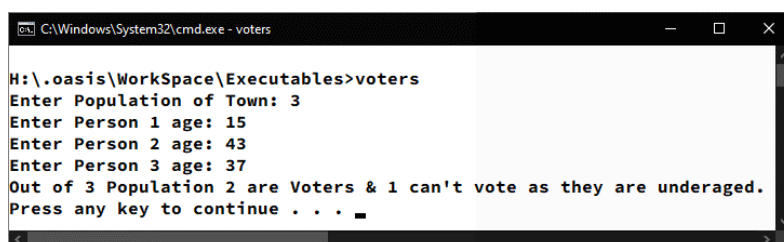
```
#include <iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int pop, age, i, voters = 0;
    cout << "Enter Population of Town: ";
    cin >> pop;
    i = pop;
    while (i > 0) {
        cout << "Enter Person " << (pop - i) + 1 << " age: ";
        cin >> age;
        if (age >= 18) voters++;
        i--;
    }

    cout << "Out of " << pop << " Population " << voters << " are Voters
    & " << pop - voters << " can't vote as they are underaged." << endl;
    system("pause");
    return 0;
}
```

**Output:**

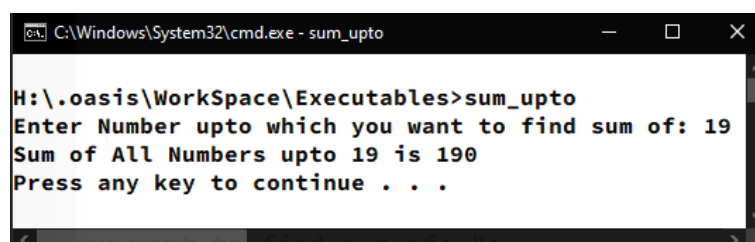


```
C:\Windows\System32\cmd.exe - voters
H:\.oasis\WorkSpace\Executables>voters
Enter Population of Town: 3
Enter Person 1 age: 15
Enter Person 2 age: 43
Enter Person 3 age: 37
Out of 3 Population 2 are Voters & 1 can't vote as they are underaged.
Press any key to continue . . .
```

**/\* C++ PROGRAM TO find SUM of first N NUMBERS. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int num, sum = 0;
    cout << "Enter Number upto which you want to find sum of: ";
    cin >> num;
    for (int i = 1; i <= num; i++) sum += i;
    cout << "Sum of All Numbers upto " << num << " is " << sum << endl;
    system("pause");
    return 0;
}
```

**Output:**

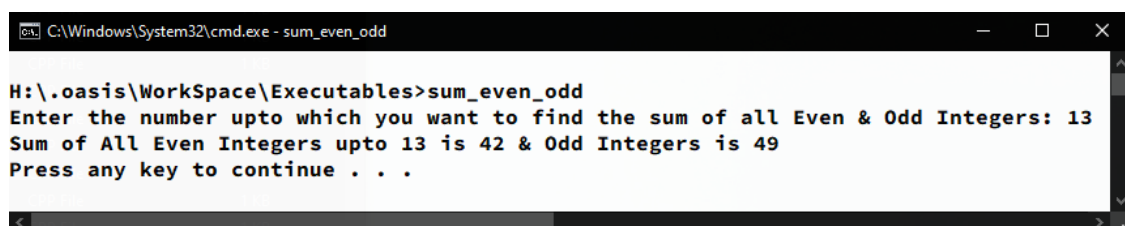


```
C:\Windows\System32\cmd.exe - sum_upto
H:\.oasis\WorkSpace\Executables>sum_upto
Enter Number upto which you want to find sum of: 19
Sum of All Numbers upto 19 is 190
Press any key to continue . . .
```

**/\* C++ PROGRAM TO find SUM of All Even & Odd INTEGERS up TO N. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int upto, even = 0, odd = 0;
    cout << "Enter the number upto which you want to find the sum of all
Even & Odd Integers: ";
    cin >> upto;
    for (int i = 0; i <= upto; i++) {
        if (i % 2 == 0)
            even += i;
        else
            odd += i;
    }
    cout << "Sum of All Even Integers upto " << upto << " is " << even <<
" & Odd Integers is " << odd << endl;
    system("pause");
    return 0;
}
```

## Output:

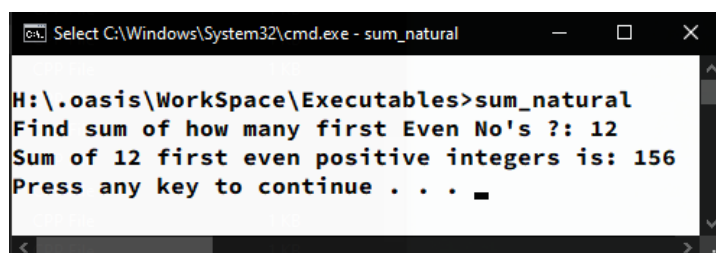


```
C:\Windows\System32\cmd.exe - sum_even_odd
H:\.oasis\Workspace\Executables>sum_even_odd
Enter the number upto which you want to find the sum of all Even & Odd Integers: 13
Sum of All Even Integers upto 13 is 42 & Odd Integers is 49
Press any key to continue . . .
```

**/\*C++ PROGRAM TO find SUM of N EVEN INTEGERS USING GOTO STATEMENT.\*/**

```
#include<iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int num, temp = 0, res = 0;
    cout << "Find sum of how many first Even No's ? : ";
    cin >> num;
    repeat:
        temp += 2;
        res += temp;
        if(temp < num*2)
            goto repeat;
    cout << "Sum of first " << num << " even positive integers is: "
    << res << endl;
    system("pause");
    return 0;
}
```

**Output:**



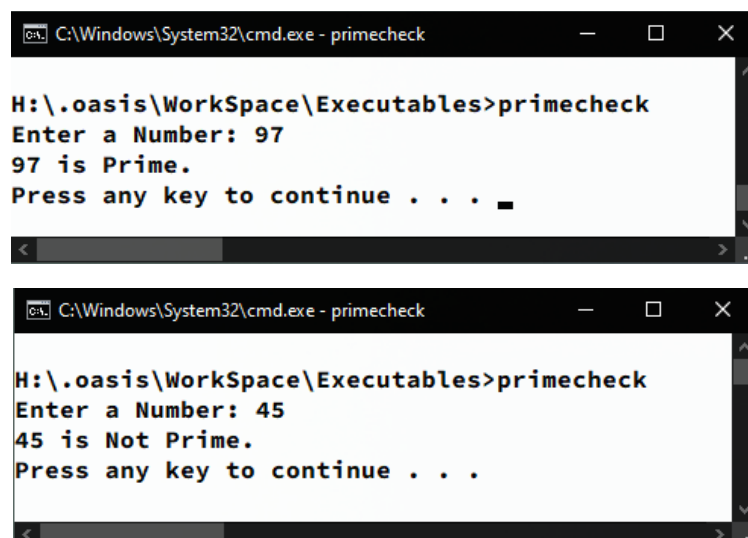
The screenshot shows a Windows command prompt window titled "Select C:\Windows\System32\cmd.exe - sum\_natural". The prompt is at "H:\.oasis\Workspace\Executables>". The user has entered "sum\_natural". The program output is: "Find sum of how many first Even No's ? : 12", "Sum of 12 first even positive integers is: 156", and "Press any key to continue . . .".



**/\* C++ PROGRAM TO CHECK WHETHER A NUMBER IS PRIME OR NOT. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int num, temp;
    bool state = true;
    cout << "Enter a Number: ";
    cin >> num;
    for (int i = 2; i <= num / 2; i++) {
        temp = num % i;
        if (temp == 0)
            state = false;
    }
    if (state) cout << num << " is Prime." << endl;
    else cout << num << " is Not Prime." << endl;
    system("pause");
    return 0;
}
```

## Output:



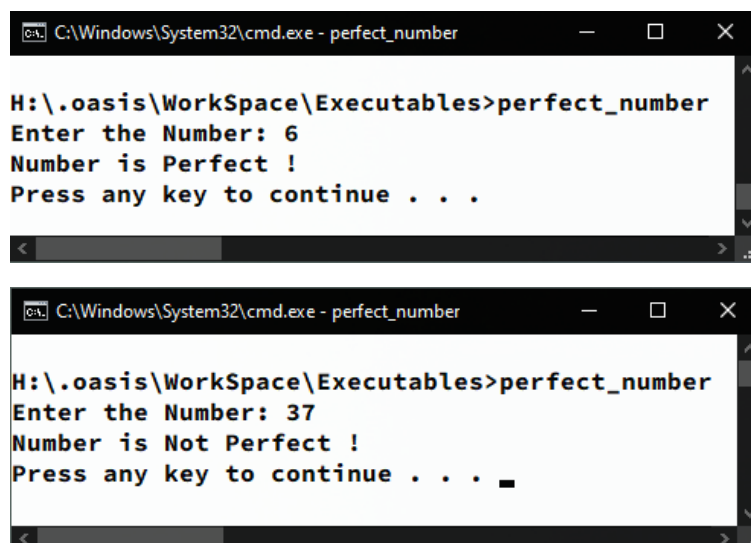
```
C:\Windows\System32\cmd.exe - primecheck
H:\.oasis\WorkSpace\Executables>primecheck
Enter a Number: 97
97 is Prime.
Press any key to continue . . .

C:\Windows\System32\cmd.exe - primecheck
H:\.oasis\WorkSpace\Executables>primecheck
Enter a Number: 45
45 is Not Prime.
Press any key to continue . . .
```

**/\* C++ PROGRAM TO CHECK WHETHER A NUMBER IS PERFECT OR NOT. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int num, temp, check = 0;
    cout << "Enter the Number: ";
    cin >> num;
    for (int i = 1; i <= num / 2; i++) {
        temp = num % i;
        if (temp == 0)
            check += i;
    }
    if (num == check)
        cout << "Number is Perfect !" << endl;
    else
        cout << "Number is Not Perfect !" << endl;
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - perfect_number

H:\.oasis\WorkSpace\Executables>perfect_number
Enter the Number: 6
Number is Perfect !
Press any key to continue . . .

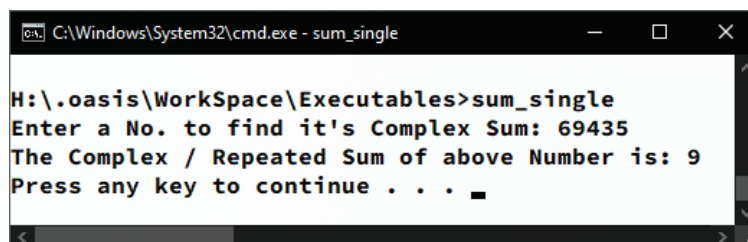
C:\Windows\System32\cmd.exe - perfect_number

H:\.oasis\WorkSpace\Executables>perfect_number
Enter the Number: 37
Number is Not Perfect !
Press any key to continue . . .
```

**/\* C++ PROGRAM TO Find Complex/ REPETITIVE sum of A NUMBER. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int num, rem, sum;
    cout << "Enter a No. to find it's Complex Sum: ";
    cin >> num;
    while (num > 9) {
        sum = num;
        num = 0;
        while (sum > 0) {
            rem = sum % 10;
            sum /= 10;
            num += rem;
        }
    }
    cout << "The Complex / Repeated Sum of above Number is: " << num <<
endl;
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - sum_single
H:\.oasis\WorkSpace\Executables>sum_single
Enter a No. to find it's Complex Sum: 69435
The Complex / Repeated Sum of above Number is: 9
Press any key to continue . . .
```

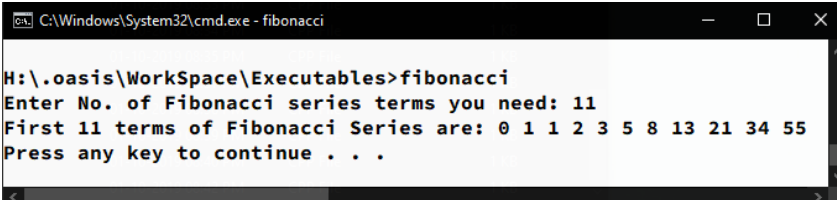
**/\* C++ PROGRAM TO GENERATE N TERMS OF FIBONACCI SEQUENCE. \*/**

```
#include <iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int limit, current = 0, next = 1, swap;
    cout << "Enter No. of Fibonacci series terms you need: ";
    cin >> limit;
    cout << "First " << limit << " terms of Fibonacci Series are:";
    for (int i = 0; i < limit; i++) {
        cout << " " << current;
        swap = current + next;
        current = next;
        next = swap;
    }
    cout << endl;
    system("pause");
    return 0;
}
```

**Output:**



The screenshot shows a Windows command prompt window titled "C:\Windows\System32\cmd.exe - fibonacci". The prompt is at "H:\.oasis\WorkSpace\Executables>". The user has entered "fibonacci". The program output is: "Enter No. of Fibonacci series terms you need: 11", "First 11 terms of Fibonacci Series are: 0 1 1 2 3 5 8 13 21 34 55", and "Press any key to continue . . .".

**/\* C++ PROGRAM TO COUNT NUMBER of digits, SUM of digits & PALINDROME check. \*/**

```
#include <iostream>

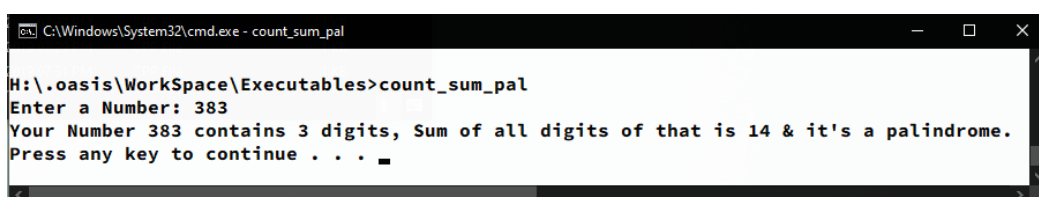
using namespace std;

int main(int argc, char const *argv[]) {
    int num, rem, sum = 0, rev = 0, count = 0, temp;
    cout << "Enter a Number: ";
    cin >> num;
    temp = num;
    while (num > 0) {
        count++;
        rem = num % 10;
        sum += rem;
        rev = rev * 10 + rem;
        num /= 10;
    }

    cout << "Your Number " << temp << " contains " << count << " digits,
Sum of all digits of that is " << sum;

    if (rev == temp) cout << " & it's a palindrome";
    cout << "." << endl;
    system("pause");
    return 0;
}
```

**Output:**

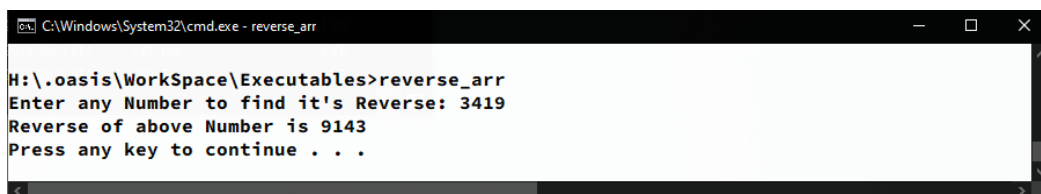


```
C:\Windows\System32\cmd.exe - count_sum_pal
H:\.oasis\Workspace\Executables>count_sum_pal
Enter a Number: 383
Your Number 383 contains 3 digits, Sum of all digits of that is 14 & it's a palindrome.
Press any key to continue . . .
```

**/\* C++ PROGRAM TO GENERATE REVERSE OF A NUMBER USING ARRAY. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[] {
    int num, arr[11], i = 0, j = 0;
    cout << "Enter any Number to find it's Reverse: ";
    cin >> num;
    while (num > 0) {
        arr[i] = num % 10;
        num /= 10;
        i++;
    }
    cout << "Reverse of above Number is ";
    while (j < i) {
        cout << arr[j];
        j++;
    }
    cout << endl;
    system("pause");
    return 0;
}
```

**Output:**

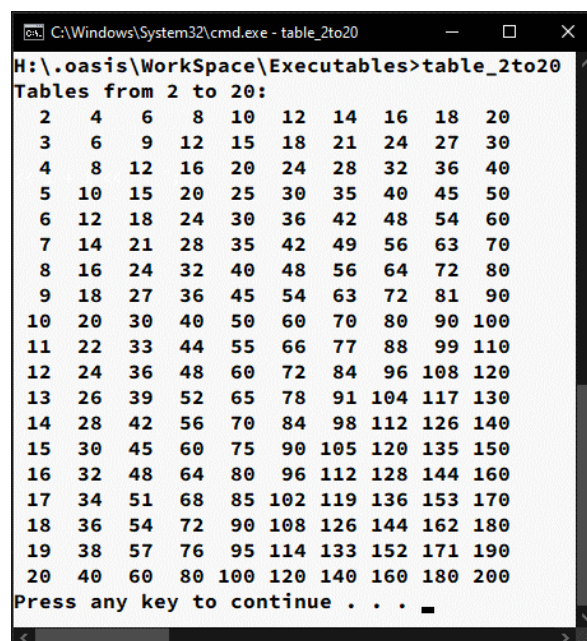


```
C:\Windows\System32\cmd.exe - reverse_arr
H:\.oasis\WorkSpace\Executables>reverse_arr
Enter any Number to find it's Reverse: 3419
Reverse of above Number is 9143
Press any key to continue . . .
```

**/\* C++ PROGRAM TO PRINT Multiplication TABLE FROM 2 TO 20. \*/**

```
#include<iostream>
#include<iomanip>
using namespace std;
int main(int argc, char const *argv[]) {
    cout << "Tables from 2 to 20: " << endl;
    for (int i = 2; i <= 20; i++) {
        for (int j = 1; j <= 10; j++) {
            cout << setw(3) << i * j << endl;
        }
        cout << endl;
    }
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - table_2to20
H:\.oasis\WorkSpace\Executables>table_2to20
Tables from 2 to 20:
 2  4  6  8 10 12 14 16 18 20
 3  6  9 12 15 18 21 24 27 30
 4  8 12 16 20 24 28 32 36 40
 5 10 15 20 25 30 35 40 45 50
 6 12 18 24 30 36 42 48 54 60
 7 14 21 28 35 42 49 56 63 70
 8 16 24 32 40 48 56 64 72 80
 9 18 27 36 45 54 63 72 81 90
10 20 30 40 50 60 70 80 90 100
11 22 33 44 55 66 77 88 99 110
12 24 36 48 60 72 84 96 108 120
13 26 39 52 65 78 91 104 117 130
14 28 42 56 70 84 98 112 126 140
15 30 45 60 75 90 105 120 135 150
16 32 48 64 80 96 112 128 144 160
17 34 51 68 85 102 119 136 153 170
18 36 54 72 90 108 126 144 162 180
19 38 57 76 95 114 133 152 171 190
20 40 60 80 100 120 140 160 180 200
Press any key to continue . . .
```

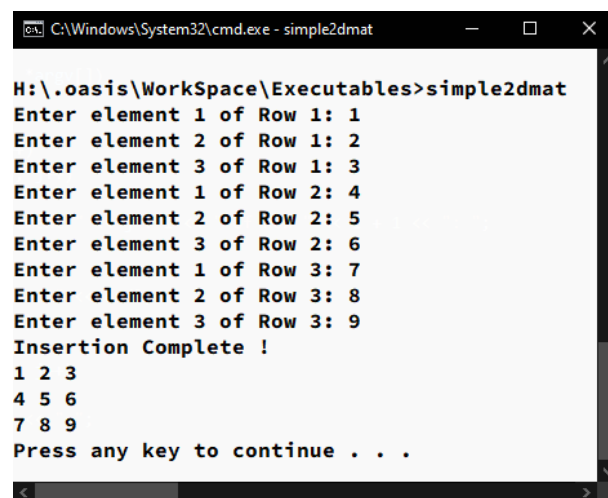
**/\* C++ PROGRAM TO CREATE & INSERT data INTO A 2D MATRIX. \*/**

```
#include<iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int mat[3][3];
    for (int i = 0; i < 3; i++)
        for (int j = 0; j < 3; j++) {
            cout << "Enter element " << j+1 << " of Row " << i+1 << ": ";
            cin >> mat[i][j];
        }
    cout << "Insertion Complete !" << endl;
    for (int i = 0; i < 3; i++)
        for (int j = 0; j < 3; j++)
            cout << mat[i][j] << " ";
    cout << endl;
    system("pause");
    return 0;
}
```

## Output:



```
C:\Windows\System32\cmd.exe - simple2dmat

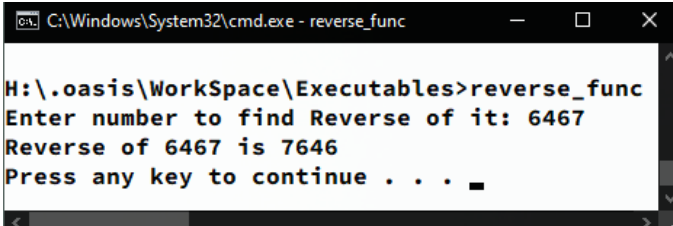
H:\.oasis\WorkSpace\Executables>simple2dmat
Enter element 1 of Row 1: 1
Enter element 2 of Row 1: 2
Enter element 3 of Row 1: 3
Enter element 1 of Row 2: 4
Enter element 2 of Row 2: 5
Enter element 3 of Row 2: 6
Enter element 1 of Row 3: 7
Enter element 2 of Row 3: 8
Enter element 3 of Row 3: 9
Insertion Complete !
1 2 3
4 5 6
7 8 9
Press any key to continue . . .
```



**/\* C++ PROGRAM TO GET REVERSE OF A NUMBER USING FUNCTION. \*/**

```
#include<iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int num, rev(int);
    cout << "Enter number to find Reverse of it: ";
    cin >> num;
    cout << "Reverse of " << num << " is " << rev(num) << endl;
    system("pause");
    return 0;
}
int rev(int x){
    int rev = 0;
    while(x > 0){
        rev = (rev * 10) + (x % 10);
        x /= 10;
    }
    return rev;
}
```

**Output:**

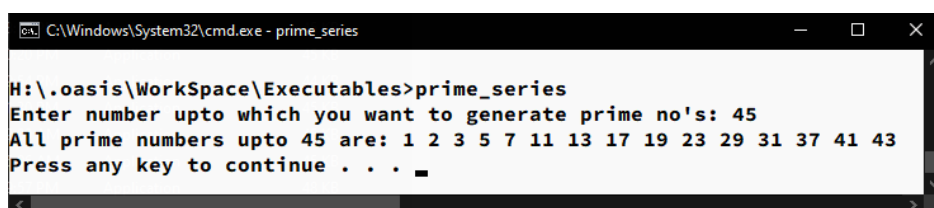


```
C:\Windows\System32\cmd.exe - reverse_func
H:\.oasis\WorkSpace\Executables>reverse_func
Enter number to find Reverse of it: 6467
Reverse of 6467 is 7646
Press any key to continue . . .
```

**/\* C++ PROGRAM TO GENERATE PRIME NUMBERS UP TO N. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int max, prime;
    cout << "Enter number upto which you want to generate prime no's: ";
    cin >> max;
    cout << "All prime numbers upto " << max << " are:";
    for (int j = 1; j <= max; j++){
        prime = 1;
        for (int i = 2; i <= j/2; i++)
            if (j % i == 0) prime = 0;
        if (prime == 1)
            cout << " " << j;
    }
    cout << endl;
    system("pause");
    return 0;
}
```

**Output:**



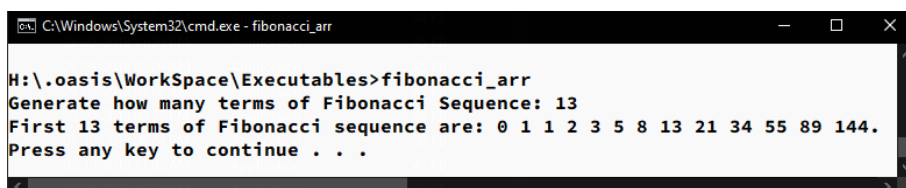
The screenshot shows a Windows command prompt window titled "C:\Windows\System32\cmd.exe - prime\_series". The prompt is at "H:\.oasis\Workspace\Executables>". The user has entered "prime\_series". The program output is as follows:

```
H:\.oasis\Workspace\Executables>prime_series
Enter number upto which you want to generate prime no's: 45
All prime numbers upto 45 are: 1 2 3 5 7 11 13 17 19 23 29 31 37 41 43
Press any key to continue . . .
```

## // C++ PROGRAM TO GENERATE N TERMS OF FIBONACCI SEQUENCE USING ARRAY.

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int terms, base;
    cout << "Generate how many terms of Fibonacci Sequence: ";
    cin >> terms;
    int arr[terms];
    arr[0] = 0; arr[1] = 1;
    for (int i = 1; i < terms; i++)
        arr[i + 1] = arr[i] + arr[i - 1];
    cout << "First " << terms << " terms of Fibonacci sequence are:";
    for (int i = 0; i < terms; i++)
        cout << " " << arr[i];
    cout << "." << endl;
    system("pause");
    return 0;
}
```

### Output:



```
C:\Windows\System32\cmd.exe - fibonacci_arr
H:\.oasis\WorkSpace\Executables>fibonacci_arr
Generate how many terms of Fibonacci Sequence: 13
First 13 terms of Fibonacci sequence are: 0 1 1 2 3 5 8 13 21 34 55 89 144.
Press any key to continue . . .
```

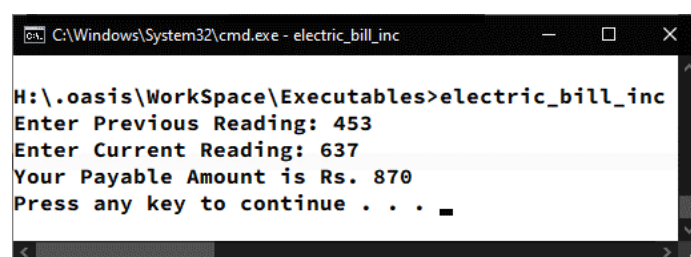
**/\* C++ PROGRAM TO GET ELECTRIC Bill AMOUNT AT VARIABLE RATES. \*/**

```
#include<iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    float pre_read, cur_read, units, amt = 0, i = 0;
    float rate[] = {4.5, 5.0, 5.5, 6.0, 6.5, 7.5};
    cout << "Enter Previous Reading: ";
    cin >> pre_read;
    cout << "Enter Current Reading: ";
    cin >> cur_read;
    units = cur_read - pre_read;
    while (units >= 100){
        units -= 100;
        amt += 100 * rate[i++];
        if(i==6) i--;
    }
    amt += units * rate[i];
    cout << "Your Payable Amount is Rs. " << amt << endl;
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - electric_bill_inc

H:\.oasis\Workspace\Executables>electric_bill_inc
Enter Previous Reading: 453
Enter Current Reading: 637
Your Payable Amount is Rs. 870
Press any key to continue . . .
```

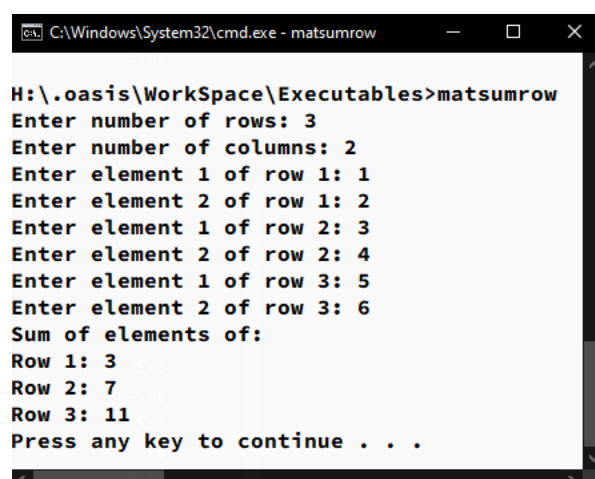
**/\* C++ PROGRAM TO find SUM of Individual Rows of MATRIX. \*/**

```
#include<iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int rows, columns;
    cout << "Enter number of rows: ";
    cin >> rows;
    cout << "Enter number of columns: ";
    cin >> columns;
    int mat[rows][columns], sum[rows];
    for (int i = 0; i < rows; i++) {
        sum[i] = 0;
        for (int j = 0; j < columns; j++) {
            cout << "Enter element " << j + 1 << " of row " << i + 1 << ": ";
            cin >> mat[i][j]; sum[i] += mat[i][j];
        }
    }
    cout << "Sum of elements of:" << endl;
    for (int i = 0; i < rows; i++)
        cout << "Row " << i+1 << ": " << sum[i] << endl;
    system("pause");
    return 0;
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - matsumrow
H:\.oasis\Workspace\Executables>matsumrow
Enter number of rows: 3
Enter number of columns: 2
Enter element 1 of row 1: 1
Enter element 2 of row 1: 2
Enter element 1 of row 2: 3
Enter element 2 of row 2: 4
Enter element 1 of row 3: 5
Enter element 2 of row 3: 6
Sum of elements of:
Row 1: 3
Row 2: 7
Row 3: 11
Press any key to continue . . .
```

**/\* C++ PROGRAM TO find SUM of DIAGONAL ELEMENTS of SQUARE MATRIX. \*/**

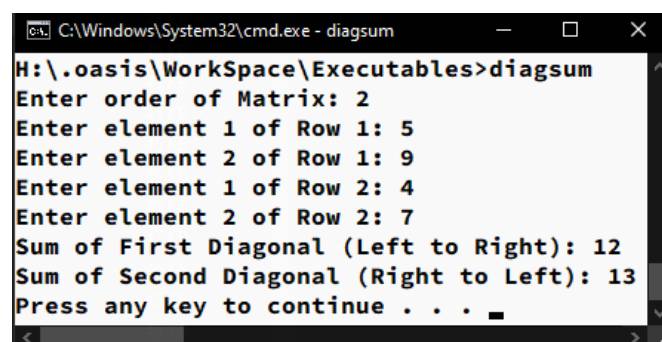
```
#include<iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int order, diag1 = 0, diag2 = 0;
    cout << "Enter order of Matrix: ";
    cin >> order; int mat[order][order];
    for (int i = 0; i < order; i++) {
        for (int j = 0; j < order; j++) {
            cout << "Enter element " << j + 1 << " of Row " << i + 1 << ": ";
            cin >> mat[i][j];
            if(i == j){
                diag1 += mat[i][j];
            } if(i+j == order-1){
                diag2 += mat[i][j];
            }
        }
    }

    cout << "Sum of First Diagonal (Left to Right): " << diag1 << endl;
    cout << "Sum of Second Diagonal (Right to Left): " << diag2 << endl;
    system("pause");
    return 0;
}
```

**Output:**

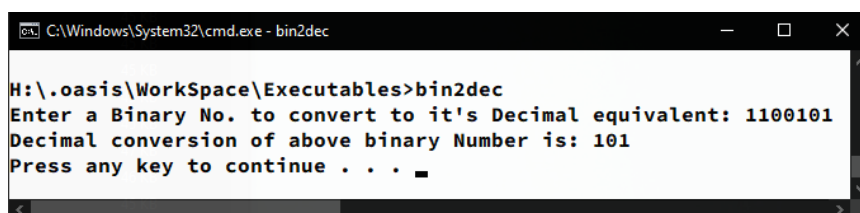


```
C:\Windows\System32\cmd.exe - diagsum
H:\.oasis\WorkSpace\Executables>diagsum
Enter order of Matrix: 2
Enter element 1 of Row 1: 5
Enter element 2 of Row 1: 9
Enter element 1 of Row 2: 4
Enter element 2 of Row 2: 7
Sum of First Diagonal (Left to Right): 12
Sum of Second Diagonal (Right to Left): 13
Press any key to continue . . .
```

**/\* C++ PROGRAM TO CONVERT BINARY NUMBER TO DECIMAL. \*/**

```
#include <iostream>
#include <math.h>
using namespace std;
int main(int argc, char const *argv[]) {
    int bin, dec = 0, rem, i = 0; bool halt = true;
    cout << "Enter a Binary No. to convert to it's Decimal equivalent: ";
    cin >> bin;
    while (bin > 0) {
        rem = bin % 10;
        dec += rem * pow(2, i);
        i++;
        bin /= 10;
        if (rem != 0 && rem != 1) {
            cout << "The Number you have Entered is NON-BINARY !!!" <<
endl;
            halt = false;
            break;
        }
    } if (halt)
        cout << "Decimal conversion of above binary Number is: " << dec
<< endl;
    system("pause");
    return 0;
}
```

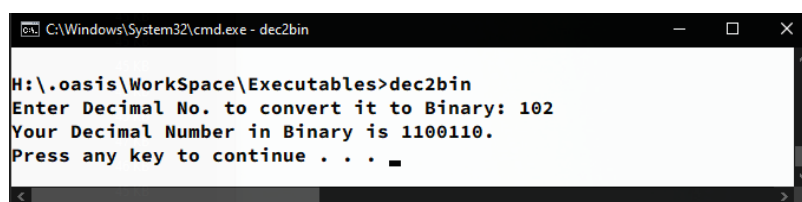
**Output:**



**/\* C++ PROGRAM TO CONVERT DECIMAL NUMBER TO BINARY. \*/**

```
#include <iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    int dec, bin[32], i = 0;
    cout << "Enter Decimal No. to convert it to Binary: ";
    cin >> dec;
    while (dec > 0) {
        bin[i] = dec % 2;
        dec /= 2;
        i++;
    }
    cout << "Your Decimal Number in Binary is ";
    for (int j = i - 1; j >= 0; j--) {
        cout << bin[j];
    }
    cout << "." << endl;
    system("pause");
    return 0;
}
```

**Output:**

A screenshot of a Windows command prompt window. The title bar reads "C:\Windows\System32\cmd.exe - dec2bin". The command prompt shows the user's current directory as "H:\.oasis\WorkSpace\Executables" and the command "dec2bin" has been entered. The program's output is displayed: "Enter Decimal No. to convert it to Binary: 102", "Your Decimal Number in Binary is 1100110.", and "Press any key to continue . . .". The cursor is positioned after the last line of output.

```
C:\Windows\System32\cmd.exe - dec2bin
H:\.oasis\WorkSpace\Executables>dec2bin
Enter Decimal No. to convert it to Binary: 102
Your Decimal Number in Binary is 1100110.
Press any key to continue . . .
```



**/\* C++ PROGRAM TO CALCULATE NET PAY of Employee using STRUCTURE. \*/**

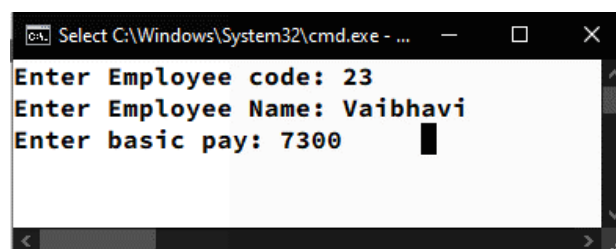
```
#include<iostream>

using namespace std;

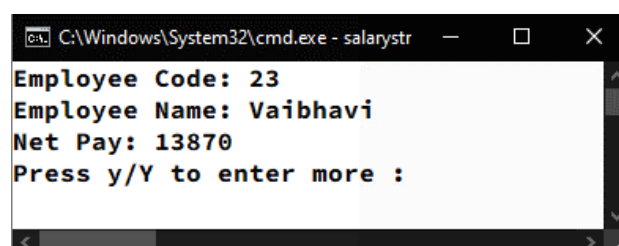
int main(int argc, char const *argv[]) {
    struct employee{
        string name;
        int code;
        float bp;
    };
    float da, hra, net;
    char ch;
    employee emp;
    do{
        system("cls");
        cout << "Enter Employee code: ";
        cin >> emp.code;
        cout << "Enter Employee Name: ";
        cin >> emp.name;
        cout << "Enter basic pay: ";
        cin >> emp.bp;
        da = emp.bp * 0.72;
        hra = emp.bp * 0.18;
        net = emp.bp + da + hra;
        system("cls");
        cout << "Employee Code: " << emp.code << endl;
        cout << "Employee Name: " << emp.name << endl;
        cout << "Net Pay: " << net << endl;
        cout << "Press y/Y to enter more : ";
        cin >> ch;
```

```
} while (ch == 'Y' || ch == 'y');  
system("pause");  
return 0;  
}
```

**Output:**



```
Select C:\Windows\System32\cmd.exe - ...  
Enter Employee code: 23  
Enter Employee Name: Vaibhavi  
Enter basic pay: 7300
```



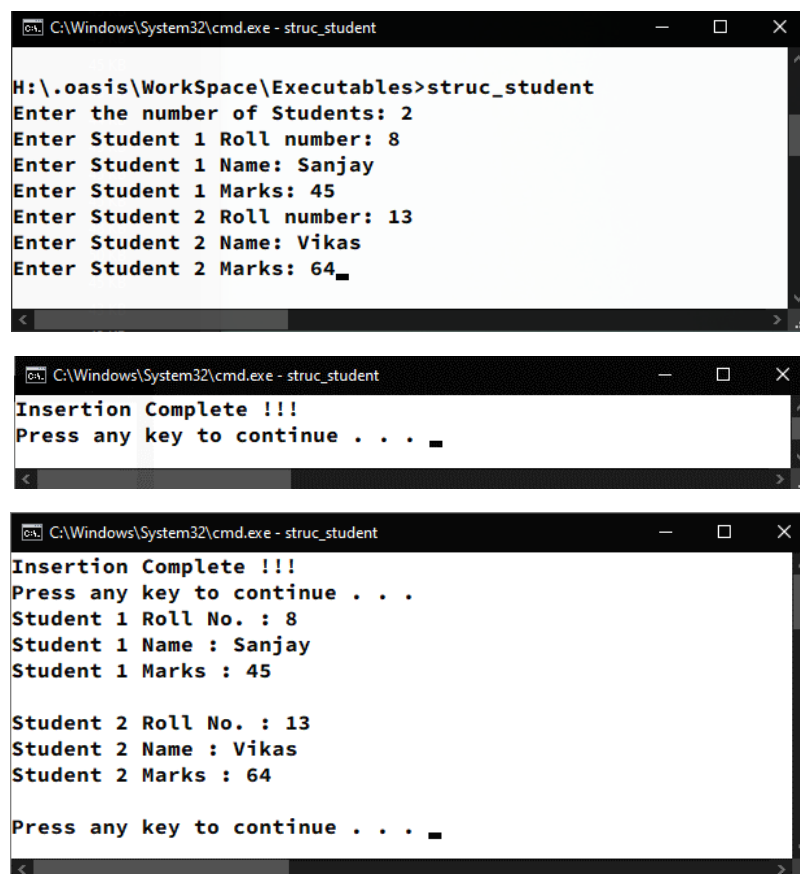
```
C:\Windows\System32\cmd.exe - salarystr  
Employee Code: 23  
Employee Name: Vaibhavi  
Net Pay: 13870  
Press y/Y to enter more :
```

## // C++ PROGRAM TO STORE DATA OF N STUDENTS INTO AN ARRAY OF STRUCTURE.

```
#include<iostream>
using namespace std;
int main(int argc, char const *argv[]) {
    struct student{
        int roll;
        int marks;
        string name;
    };
    int num;
    cout << "Enter the number of Students: ";
    cin >> num;
    student st[num];
    for (int i = 0; i < num; i++) {
        cout << "Enter Student " << i + 1 << " Roll number: ";
        cin >> st[i].roll;
        cout << "Enter Student " << i + 1 << " Name: ";
        cin >> st[i].name;
        cout << "Enter Student " << i + 1 << " Marks: ";
        cin >> st[i].marks;
    }
    system("cls");
    cout<< "Insertion Complete !!!" << endl;
    system("pause");
    for (int i = 0; i < num; i++) {
        cout << "Student " << i + 1 << " Roll No. : " << st[i].roll <<
endl;
        cout << "Student " << i + 1 << " Name : " << st[i].name << endl;
        cout << "Student " << i + 1 << " Marks : " << st[i].marks << endl
<< endl;
```

```
}  
  
system("pause");  
  
return 0;  
  
}
```

**Output:**



```
C:\Windows\System32\cmd.exe - struc_student  
H:\.oasis\WorkSpace\Executables>struc_student  
Enter the number of Students: 2  
Enter Student 1 Roll number: 8  
Enter Student 1 Name: Sanjay  
Enter Student 1 Marks: 45  
Enter Student 2 Roll number: 13  
Enter Student 2 Name: Vikas  
Enter Student 2 Marks: 64_
```

```
C:\Windows\System32\cmd.exe - struc_student  
Insertion Complete !!!  
Press any key to continue . . . _
```

```
C:\Windows\System32\cmd.exe - struc_student  
Insertion Complete !!!  
Press any key to continue . . .  
Student 1 Roll No. : 8  
Student 1 Name : Sanjay  
Student 1 Marks : 45  
  
Student 2 Roll No. : 13  
Student 2 Name : Vikas  
Student 2 Marks : 64  
  
Press any key to continue . . . _
```

**/\* C++ PROGRAM TO find FACTORIAL of A NUMBER using FUNCTION. \*/**

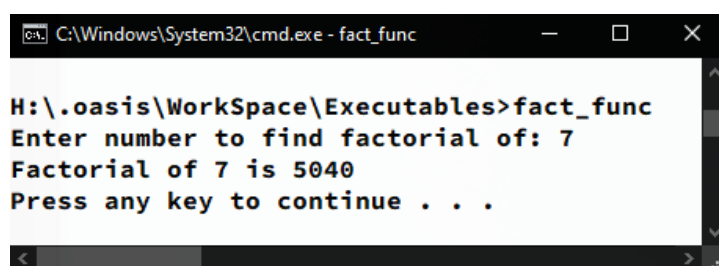
```
#include<iostream>

using namespace std;

int main(int argc, char const *argv[]) {
    int num, fact(int);
    cout << "Enter number to find factorial of: ";
    cin >> num;
    cout << "Factorial of " << num << " is " << fact(num) << endl;
    system("pause");
    return 0;
}

int fact(int x){
    int fact = 1;
    for (int i = 1; i <= x; i++) fact *= i;
    return fact;
}
```

**Output:**

A screenshot of a Windows command prompt window titled "C:\Windows\System32\cmd.exe - fact\_func". The window shows the following text: "H:\.oasis\Workspace\Executables>fact\_func", "Enter number to find factorial of: 7", "Factorial of 7 is 5040", and "Press any key to continue . . .". The window has standard Windows window controls (minimize, maximize, close) in the top right corner and a scrollbar on the right side.

```
C:\Windows\System32\cmd.exe - fact_func
H:\.oasis\Workspace\Executables>fact_func
Enter number to find factorial of: 7
Factorial of 7 is 5040
Press any key to continue . . .
```

**/\* C++ PROGRAM TO GENERATE & PRINT MAGIC MATRIX. \*/**

```
#include<iostream>
#include<iomanip>
using namespace std;
int main(int argc, char const *argv[]) {
    int mat[15][15], order, count=1;
    bool err, end;
    do{
        if(argc==2){
            order = atoi(argv[1]);
            if(order%2 != 1){
                err = true;
                goto step;
            }
        } else {
            step:
            if(err){
                system("cls");
                cout << "Wrong Parameters !!!" << endl;
            }
            err = true;
            cout << "Enter Order of Matrix \"Must be Odd Integer\": ";
            cin >> order;
        }
    } while ((order % 2) != 1);
    for (int i = 0; i < order; i++)
        for (int j = 0; j < order; j++)
            mat[i][j] = 0;
    system("cls");
```

```

int max = order * order;
int size = order - 1;
int i = size;
int j = size / 2;

for ( ; i < order; ){
    for ( ; j < order; ){
        mat[i][j] = count;
        if(count == max){
            end = true;
            break;
        }else count++;
        i++;
        if(i > size)
            i = 0;
        j--;
        if(j < 0)
            j = size;
        if (mat[i][j] != 0){
            i--;
            if(i < 0)
                i = size;
            i--;
            j++;
            if(j > size)
                j = 0;
        }
    }
    if (end) break;
}

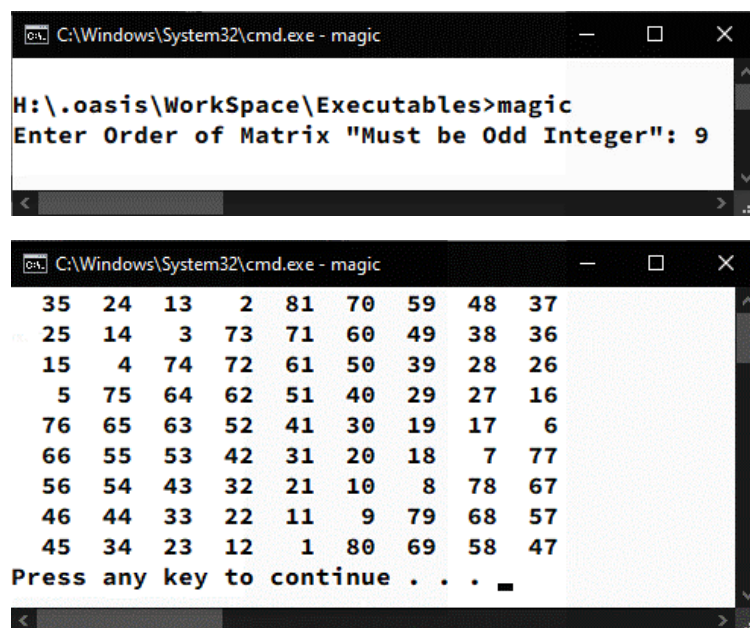
```

```

for (int i = 0; i < order; i++)
    for (int j = 0; j < order; j++)
        cout << setw(4) << mat[i][j];
    cout << endl;
system("pause");
return 0;
}

```

## Output:



The first screenshot shows the command prompt window with the following text:

```

C:\Windows\System32\cmd.exe - magic
H:\.oasis\Workspace\Executables>magic
Enter Order of Matrix "Must be Odd Integer": 9

```

The second screenshot shows the command prompt window displaying the output of the program, which is a 9x9 magic square matrix. The numbers are arranged in a grid, and the prompt "Press any key to continue . . ." is visible at the bottom.

35	24	13	2	81	70	59	48	37
25	14	3	73	71	60	49	38	36
15	4	74	72	61	50	39	28	26
5	75	64	62	51	40	29	27	16
76	65	63	52	41	30	19	17	6
66	55	53	42	31	20	18	7	77
56	54	43	32	21	10	8	78	67
46	44	33	22	11	9	79	68	57
45	34	23	12	1	80	69	58	47

Press any key to continue . . .



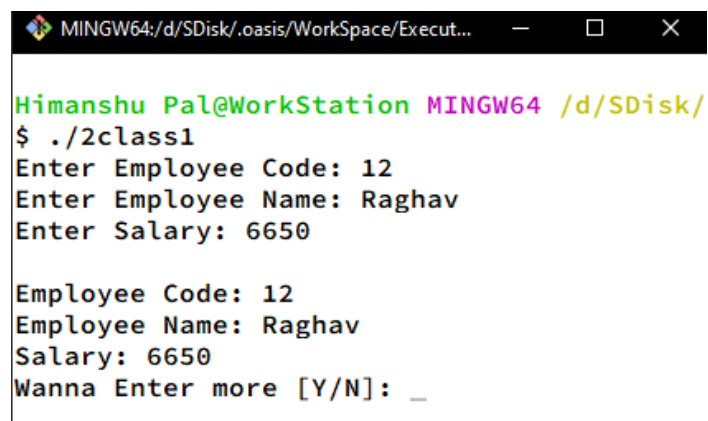
```
/* PROGRAM TO DEMONSTRATE WORKING OF CLASS. */
```

```
#include <iostream>
using namespace std;
class employee {
private:
    int empCode;
    string name;
    float salary;
public:
    void getdata() {
        cout << "Enter Employee Code: ";
        cin >> empCode;
        cout << "Enter Employee Name: ";
        cin >> name;
        cout << "Enter Salary: ";
        cin >> salary;
    }
    void showdata() {
        system("cls");
        cout << "Employee Code: " << empCode << endl;
        cout << "Employee Name: " << name << endl;
        cout << "Salary: " << salary << endl;
    }
};

int main(int argc, char const *argv[]) {
    employee emp;
    char ch;
    do {
```

```
    emp.getdata();  
    emp.showdata();  
    cout << "Wanna Enter more [Y/N]: ";  
    cin >> ch;  
} while (ch != 'n' && ch != 'N');  
return 0;  
}
```

## Output:



```
MINGW64; d/SDisk/.oasis/WorkSpace/Execut...  
Himanshu Pal@WorkStation MINGW64 /d/SDisk/  
$ ./2class1  
Enter Employee Code: 12  
Enter Employee Name: Raghav  
Enter Salary: 6650  
  
Employee Code: 12  
Employee Name: Raghav  
Salary: 6650  
Wanna Enter more [Y/N]: _
```

**/\* PROGRAM TO DEMONSTRATE WORKING OF CLASS WITH FUNCTIONS. \*/**

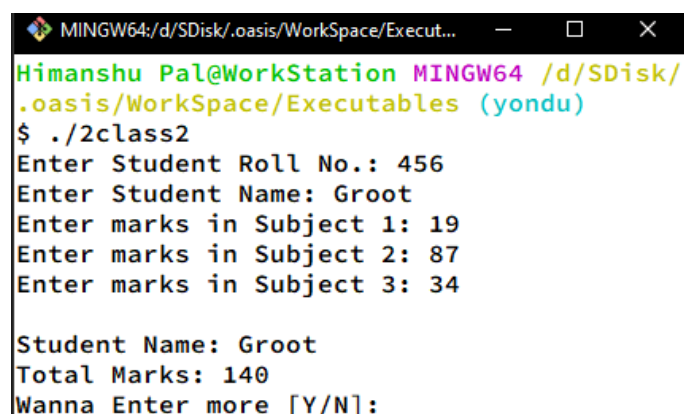
```
#include <iostream>
using namespace std;
class student {
private:
    int rollNo, mark1, mark2, mark3; string name;
public:
    void getdata();
    int calculate();
    void showdata();
};
void student::getdata() {
    cout << "Enter Student Roll No.: ";
    cin >> rollNo;
    cout << "Enter Student Name: ";
    cin >> name;
    cout << "Enter marks in Subject 1: ";
    cin >> mark1;
    cout << "Enter marks in Subject 2: ";
    cin >> mark2;
    cout << "Enter marks in Subject 3: ";
    cin >> mark3;
}
int student::calculate() {
    return mark1 + mark2 + mark3;
}
void student::showdata() {
    system("cls");
    cout << "Student Name: " << name << endl;
```

```

        cout << "Total Marks: " << calculate() << endl;
    }
int main(int argc, char const *argv[]) {
    student stu;
    char ch;
    do {
        stu.getdata();
        stu.showdata();
        cout << "Wanna Enter more [Y/N]: ";
        cin >> ch;
    } while (ch != 'n' && ch != 'N');
    return 0;
}

```

## Output:



```

MINGW64/d/SDisk/.oasis/WorkSpace/Execut...
Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ ./2class2
Enter Student Roll No.: 456
Enter Student Name: Groot
Enter marks in Subject 1: 19
Enter marks in Subject 2: 87
Enter marks in Subject 3: 34

Student Name: Groot
Total Marks: 140
Wanna Enter more [Y/N]: _

```

**/\* PROGRAM TO DEMONSTRATE WORKING OF CLASS BY SORTING AN ARRAY. \*/**

```
#include <iostream>
using namespace std;
int limit;
class sort {
private:
    int pos = 0, arr[100];
public:
    void getdata();
    void calc();
    void showdata();
};
void sort::getdata() {
    while (pos < limit) {
        cout << "Enter Data for POSITION " << pos+1 << " : ";
        cin >> arr[pos];
        pos += 1;
    }
}
void sort::calc() {
    for (int i = 0; i < limit - 1; i++) {
        for (int j = i; j < limit; j++) {
            if (arr[i] > arr[j]) {
                arr[i] += arr[j];
                arr[j] = arr[i] - arr[j];
                arr[i] -= arr[j];
            }
        }
    }
}
void sort::showdata() {
    system("cls");
```

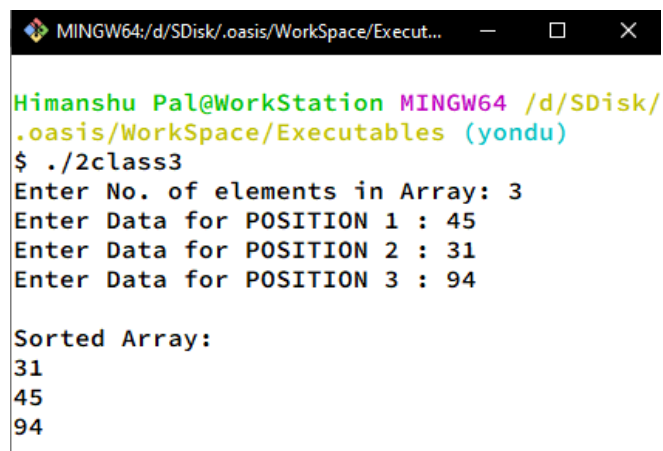
```

        cout << "Sorted Array:" << endl;
        for (int i = 0; i < limit; i++) {
            cout << arr[i] << endl;
        }
    }

int main(int argc, char const *argv[]) {
    sort srt;
    cout << "Enter No. of elements in Array: ";
    cin >> limit;
    srt.getdata();
    srt.calc();
    srt.showdata();
    return 0;
}

```

## Output:



```

MINGW64:/d/SDisk/.oasis/WorkSpace/Execut...
Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ ./2class3
Enter No. of elements in Array: 3
Enter Data for POSITION 1 : 45
Enter Data for POSITION 2 : 31
Enter Data for POSITION 3 : 94

Sorted Array:
31
45
94

```

**/\* PROGRAM TO DEMONSTRATE WORKING OF CLASS BY CREATING AN ARRAY OF OBJECTS. \*/**

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

class list
{
private:
    string data;

public:
    void getdata();
    void showdata();
};

void list::getdata()
{
    cout << "Enter Item Name: ";
    cin >> data;
}

void list::showdata()
{
    cout << "Item Name: " << data << endl;
}

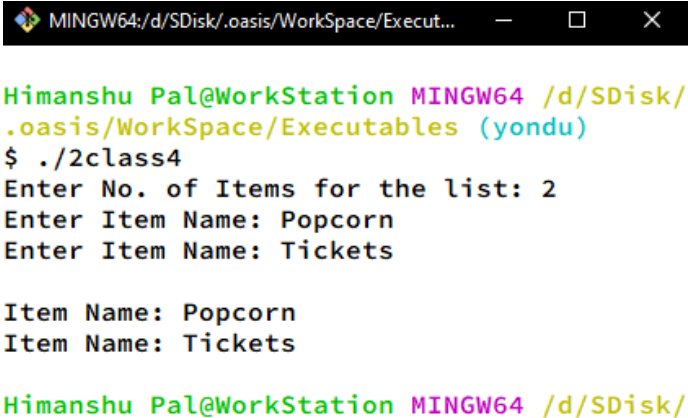
int main(int argc, char const *argv[])
{
    int qty;
```

```

cout << "Enter No. of Items for the list: ";
cin >> qty;
list item[qty];
for (int i = 0; i < qty; i++)
{
    item[i].getdata();
}
system("cls");
for (int i = 0; i < qty; i++)
{
    item[i].showdata();
}
return 0;
}

```

## Output:



```

MINGW64; d:/SDisk/.oasis/WorkSpace/Executables
Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ ./2class4
Enter No. of Items for the list: 2
Enter Item Name: Popcorn
Enter Item Name: Tickets

Item Name: Popcorn
Item Name: Tickets

Himanshu Pal@WorkStation MINGW64 /d/SDisk/

```



**/\* PROGRAM TO DEMONSTRATE WORKING OF CLASS PASSING OBJECT AS AN ARGUMENT. \*/**

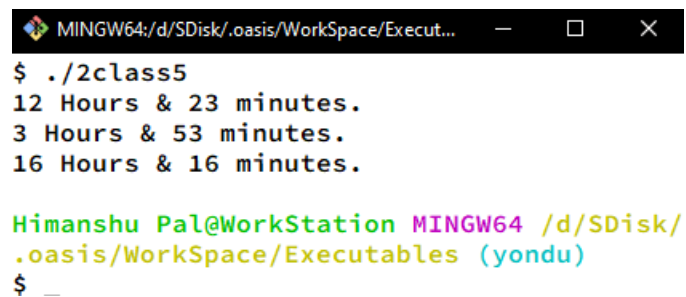
```
#include <iostream>
using namespace std;

class time
{
private:
    int hour, minute;

public:
    void get_time(int i, int j)
    {
        hour = i;
        minute = j;
    }
    void showtime()
    {
        cout << hour << " Hours & " << minute << " minutes." << endl;
    }
    void sum(time t1, time t2)
    {
        minute = t1.minute + t2.minute;
        hour = minute / 60;
        minute %= 60;
        hour = hour + t1.hour + t2.hour;
    }
};
```

```
int main(int argc, char const *argv[])
{
    time t1, t2, t3;
    t1.get_time(12, 23);
    t1.showtime();
    t2.get_time(3, 53);
    t2.showtime();
    t3.sum(t1, t2);
    t3.showtime();
    return 0;
}
```

## Output:



A screenshot of a terminal window with a black title bar containing the text "MINGW64:/d/SDisk/.oasis/WorkSpace/Execut...". The terminal shows the execution of a program. The prompt is "\$ ./2class5". The output consists of three lines: "12 Hours & 23 minutes.", "3 Hours & 53 minutes.", and "16 Hours & 16 minutes.". Below the output, the user's name and the terminal's path are displayed in a green font: "Himanshu Pal@WorkStation MINGW64 /d/SDisk/.oasis/WorkSpace/Executables (yonder)". The prompt "\$ \_" is shown at the bottom.

```
MINGW64:/d/SDisk/.oasis/WorkSpace/Execut...
$ ./2class5
12 Hours & 23 minutes.
3 Hours & 53 minutes.
16 Hours & 16 minutes.

Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ _
```

**/\* PROGRAM TO demonstrate working of Class with friend function. \*/**

```
#include <iostream>

using namespace std;

class test
{
private:
    int num1, num2;

public:
    void get_data(int i, int j)
    {
        num1 = i;
        num2 = j;
    }
    friend int mean(test);
};

int mean(test obj)
{
    return (obj.num1 + obj.num2) / 2;
}

int main(int argc, char const *argv[])
{
    test ob;
    int num1, num2;

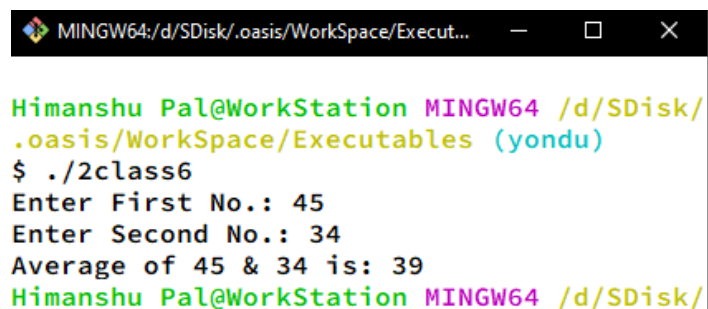
    cout << "Enter First No.: ";
```

```

    cin >> num1;
    cout << "Enter Second No.: ";
    cin >> num2;
    ob.get_data(num1, num2);
    cout << "Average of " << num1 << " & " << num2 << " is: " <<
mean(ob);
    return 0;
}

```

## Output:



```

MINGW64:/d/SDisk/.oasis/WorkSpace/Execut...
Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ ./2class6
Enter First No.: 45
Enter Second No.: 34
Average of 45 & 34 is: 39
Himanshu Pal@WorkStation MINGW64 /d/SDisk/

```

**/\* PROGRAM TO DEMONSTRATE WORKING OF CLASS WITH FRIEND FUNCTION  
WORKING AS BRIDGE. \*/**

```
#include <iostream>
using namespace std;
class test1;
class test2;
class test1
{
private:
    int num;
public:
    void set_val(int i) {
        num = i;
    }
    friend int max(test1, test2);
};
class test2 {
private:
    int num;
public:
    void set_val(int i) {
        num = i;
    }
    friend int max(test1, test2);
};
int max(test1 obj1, test2 obj2) {
    return ((obj1.num > obj2.num) ? obj1.num : obj2.num);
}
int main(int argc, char const *argv[]) {
```

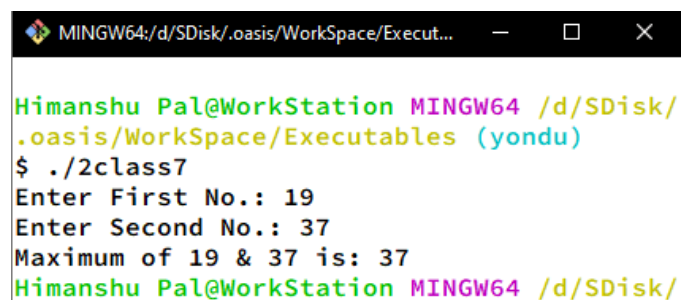
```

test1 ob1;
test2 ob2;
int num1, num2;

cout << "Enter First No.: ";
cin >> num1;
cout << "Enter Second No.: ";
cin >> num2;
ob1.set_val(num1);
ob2.set_val(num2);
cout << "Maximum of " << num1 << " & " << num2 << " is: " << max(ob1,
ob2);
return 0;
}

```

## Output:



```

MINGW64:/d/SDisk/.oasis/WorkSpace/Execut...
Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ ./2class7
Enter First No.: 19
Enter Second No.: 37
Maximum of 19 & 37 is: 37
Himanshu Pal@WorkStation MINGW64 /d/SDisk/

```

## // PROGRAM TO DEMONSTRATE WORKING OF CLASS RETURNING OBJECT AS RESULT.

```
#include <iostream>

using namespace std;

class length {
private:
    int feet; float inch;
public:
    void get_data(int ft, float in) {
        feet = ft;
        inch = in;
    }
    void show_data() {
        cout << feet << " feets & " << inch << " inches." << endl;
    }
    length total(length l1, length l2);
};

length length::total(length l1, length l2) {
    length l3;
    l3.feet = l1.feet + l2.feet;
    l3.inch = l1.inch + l2.inch;
    while (l3.inch > 12)
        if (l3.inch >= 12) {
            l3.feet++;
            l3.inch -= 12;
        }
    return l3;
}

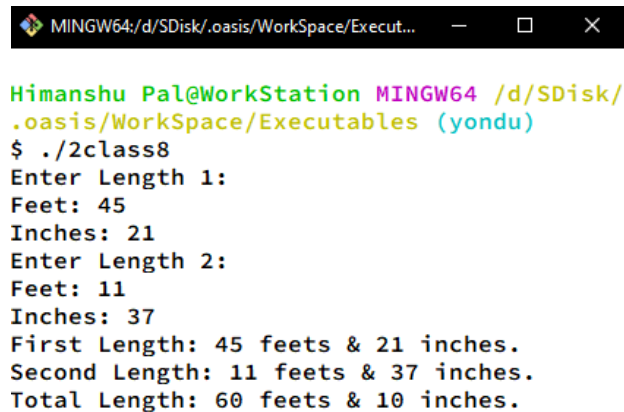
int main(int argc, char const *argv[]) {
```

```

length len1, len2; int feet; float inch;
cout << "Enter Length 1: " << endl;
cout << "Feet: "; cin >> feet;
cout << "Inches: "; cin >> inch;
len1.get_data(feet, inch);
cout << "Enter Length 2: " << endl;
cout << "Feet: "; cin >> feet;
cout << "Inches: "; cin >> inch;
len2.get_data(feet, inch);
cout << "First Length: ";
len1.show_data();
cout << "Second Length: ";
len2.show_data();
length len3 = len3.total(len1, len2);
cout << "Total Length: ";
len3.show_data();
return 0;
}

```

## Output:



```

MINGW64:/d/SDisk/.oasis/WorkSpace/Executables
Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ ./2class8
Enter Length 1:
Feet: 45
Inches: 21
Enter Length 2:
Feet: 11
Inches: 37
First Length: 45 feets & 21 inches.
Second Length: 11 feets & 37 inches.
Total Length: 60 feets & 10 inches.

```



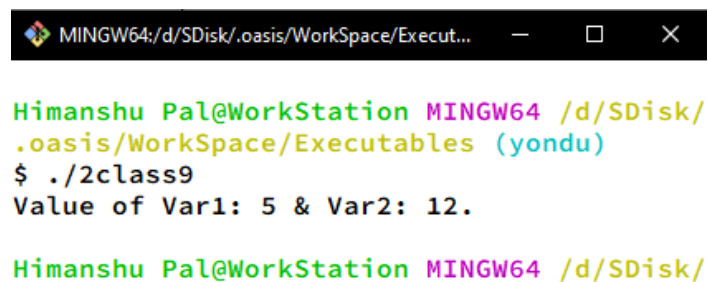
```

/* PROGRAM TO DEMONSTRATE WORKING OF CLASS USING CONSTRUCTOR. */

#include <iostream>
using namespace std;
class test {
private:
    int num1 = 5, num2 = 12;
public:
    test(){
        cout << "Value of Var1: " << num1 << " & Var2: " << num2 << "."
<< endl;
    }
};
int main(int argc, char const *argv) {
    test obj;
    return 0;
}

```

## Output:



```

MINGW64:/d/SDisk/.oasis/WorkSpace/Execut...
Himanshu Pal@WorkStation MINGW64 /d/SDisk/
.oasis/WorkSpace/Executables (yonder)
$ ./2class9
Value of Var1: 5 & Var2: 12.
Himanshu Pal@WorkStation MINGW64 /d/SDisk/

```

```
/* PROGRAM TO DEMONSTRATE WORKING OF CLASS USING MULTIPLE  
PARAMETERISED CONSTRUCTOR. */
```

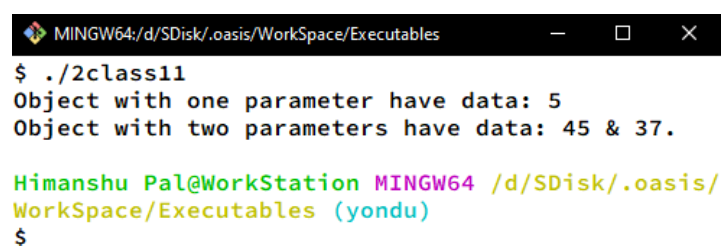
```
#include <iostream>

using namespace std;

class sample {
private:
    int num1, num2;
public:
    sample(int a) {
        num1 = a;
        cout << "Object with one parameter have data: " << num1 << endl;
    } sample(int a, int b) {
        num1 = a;
        num2 = b;
        cout << "Object with two parameters have data: " << num1 << " & "
<< num2 << "." << endl;
    }
};

int main(int argc, char const *argv[]) {
    sample obj1(5);
    sample obj2(45, 37);
    return 0;
}
```

**Output:**



```
MINGW64; d:/SDisk/.oasis/Workspace/Executables
$ ./2class11
Object with one parameter have data: 5
Object with two parameters have data: 45 & 37.

Himanshu Pal@WorkStation MINGW64 /d/SDisk/.oasis/
Workspace/Executables (yonder)
$ _
```

**/\* PROGRAM TO DEMONSTRATE WORKING OF CLASS USING CONSTRUCTOR & DESTRUCTOR. \*/**

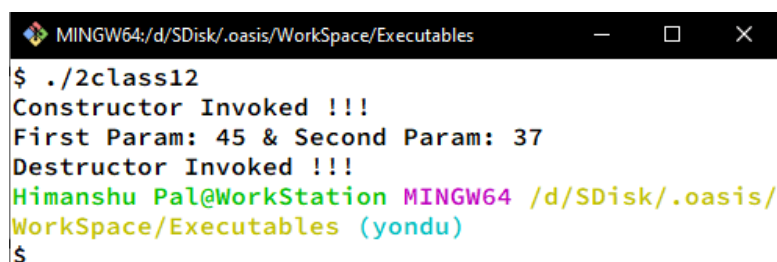
```
#include <iostream>

using namespace std;

class sample {
private:
    int num1, num2;
public:
    sample(int a, int b) {
        num1 = a;
        num2 = b;
        cout << "Constructor Invoked !!!\n";
        cout << "First Param: " << num1 << " & Second Param: " << num2 <<
endl;
    }
    ~sample(){
        cout << "Destructor Invoked !!!";
    }
};

int main(int argc, char const *argv[]) {
    sample obj2(45, 37);
    return 0;
}
```

**Output:**



```
MINGW64:/d/SDisk/.oasis/Workspace/Executables
$ ./2class12
Constructor Invoked !!!
First Param: 45 & Second Param: 37
Destructor Invoked !!!
Himanshu Pal@WorkStation MINGW64 /d/SDisk/.oasis/
Workspace/Executables (yonder)
$ _
```

## // PROGRAM TO DEMONSTRATE OPERATOR OVERLOADING FOR UNARY OPERATOR.

```
#include <iostream>

using namespace std;

class sample
{
private:
    int num1, num2, num3;

public:
    sample(int a, int b, int c)
    {
        num1 = a;
        num2 = b;
        num3 = c;
    }

    void display()
    {
        cout << "First Param: " << num1 << ", Second Param: " << num2 <<
", Third Param: " << num3 << endl;
    }

    void operator-()
    {
        num1 = -num1;
        num2 = -num2;
        num3 = -num3;
    }

    ~sample()
    {
```

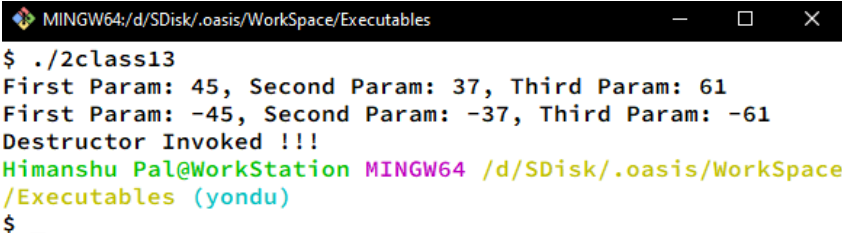
```

        cout << "Destructor Invoked !!!";
    }
};

int main(int argc, char const *argv[])
{
    sample obj(45, 37, 61);
    obj.display();
    -obj;
    obj.display();
    return 0;
}

```

## Output:



```

MINGW64; d:/SDisk/.oasis/WorkSpace/Executables
$ ./2class13
First Param: 45, Second Param: 37, Third Param: 61
First Param: -45, Second Param: -37, Third Param: -61
Destructor Invoked !!!
Himanshu Pal@WorkStation MINGW64 /d/SDisk/.oasis/WorkSpace
/Executables (yonder)
$

```

## // PROGRAM TO DEMONSTRATE OPERATOR OVERLOADING FOR BINARY OPERATOR.

```
#include <iostream>

using namespace std;

class sample
{
private:
    int num1, num2;

public:
    sample(int a, int b)
    {
        num1 = a;
        num2 = b;
    }

    void display()
    {
        cout << "First Param: " << num1 << ", Second Param: " << num2 <<
endl;
    }

    sample operator+(sample ob)
    {
        sample obj(0, 0);
        obj.num1 = num1 + ob.num1;
        obj.num2 = num2 + ob.num2;
        return obj;
    }

    ~sample()
    {
```

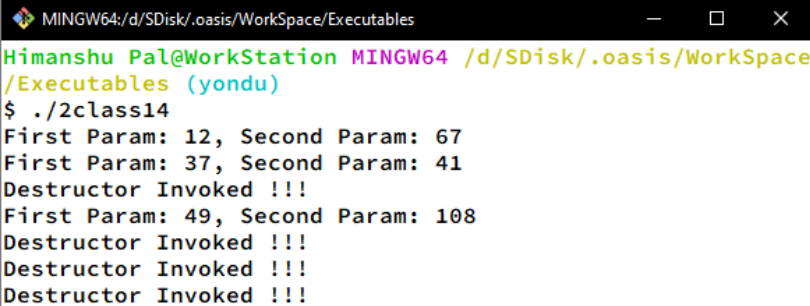
```

        cout << "Destructor Invoked !!!\n";
    }
};

int main(int argc, char const *argv[])
{
    sample obj1(12, 67), obj2(37, 41);
    obj1.display();
    obj2.display();
    sample obj = obj1 + obj2;
    obj.display();
    return 0;
}

```

## Output:



```

MINGW64: d:/SDisk/.oasis/WorkSpace/Executables
Himanshu Pal@WorkStation MINGW64 /d/SDisk/.oasis/WorkSpace
/Executables (yonder)
$ ./2class14
First Param: 12, Second Param: 67
First Param: 37, Second Param: 41
Destructor Invoked !!!
First Param: 49, Second Param: 108
Destructor Invoked !!!
Destructor Invoked !!!
Destructor Invoked !!!

```

## **// PROGRAM TO DEMONSTRATE OPERATOR OVERLOADING FOR RELATIONAL OPERATOR.**

```
#include <iostream>

using namespace std;

class currency
{
private:
    int rs, ps;

public:
    currency(int a, int b)
    {
        rs = a;
        ps = b;
    }
    void display()
    {
        cout << rs << " rupees & " << ps << " paise." << endl;
    }
    bool operator>(currency ob)
    {
        rs += ps / 100;
        ob.rs += ob.ps / 100;
        return ((rs > ob.rs) ? true : false);
    }
    ~currency()
    {
        cout << "Destructor Invoked !!!" << endl;
    }
}
```



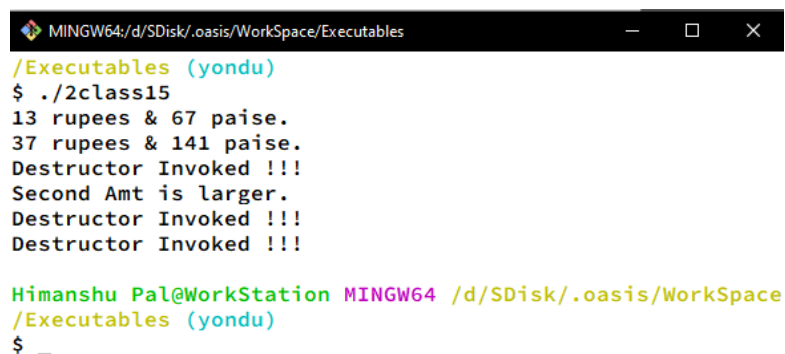
```

    }
};

int main(int argc, char const *argv[])
{
    currency obj1(13, 67), obj2(37, 141);
    obj1.display();
    obj2.display();
    if (obj1 > obj2)
        cout << "First Amt. is larger." << endl;
    else
        cout << "Second Amt is larger." << endl;
    return 0;
}

```

## Output:



```

MINGW64:/d/SDisk/.oasis/WorkSpace/Executables
/Executables (yonder)
$ ./2class15
13 rupees & 67 paise.
37 rupees & 141 paise.
Destructor Invoked !!!
Second Amt is larger.
Destructor Invoked !!!
Destructor Invoked !!!

Himanshu Pal@WorkStation MINGW64 /d/SDisk/.oasis/WorkSpace
/Executables (yonder)
$ _

```