

```
1  #include <iostream>
2  #include <cmath>
3  class Shape {
4  public:
5      virtual double calculateArea() const = 0;
6  };
7  class Square : public Shape {
8  private:
9      double side;
10 public:
11     Square(double s) : side(s) {}
12     double calculateArea() const override {
13         return side * side;
14     }
15 };
16 class Rectangle : public Shape {
17 private:
18     double length;
19     double width;
20 public:
21     Rectangle(double l, double w) : length(l),
22     double calculateArea() const override {
23         return length * width;
24     }
25 };
26 class Circle : public Shape {
```

C:\Users\ramis\OneDrive\Documents\C++\Area.exe

```
Area of Square: 25
Area of Rectangle: 24
Area of Circle: 28.2743
```

```
-----
Process exited after 0.05716 seconds with return value 0
Press any key to continue . . .
```

Line	Col	File	Message
12	28	C:\Users\ramis\OneDrive\Documents\C++\Area.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11
22	28	C:\Users\ramis\OneDrive\Documents\C++\Area.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11
31	28	C:\Users\ramis\OneDrive\Documents\C++\Area.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11

C:\Users\ramis\OneDrive\Documents\C++\Car.cpp - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

Project Classes Debug [*] Pyramid.cpp [*] Happy number or not.cpp [*] Two dimensional array.cpp [*] Area.cpp Car.cpp

```
1 #include <iostream>
2 class Car {
3 public:
4     Car() {
5         std::cout << "Car constructor called." <<
6         \
7         ~Car() {
8             std::cout << "Car destructor called." <<
9         }
10 };
11 int main() {
12     Car myCar;
13     return 0;
14 }
```

C:\Users\ramis\OneDrive\Documents\C++\Car.exe

```
Car constructor called.
Car destructor called.
-----
Process exited after 0.04712 seconds with return value 0
Press any key to continue . . .
```

Compiler Resources Compile Log Debug Find Results Close

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ramis\OneDrive\Documents\C++\Car.exe
- Output Size: 1.83297920227051 MiB
- Compilation Time: 0.72s

Shorten compiler paths

Line: 4 Col: 12 Sel: 0 Lines: 14 Length: 259 Insert Done parsing in 0.016 seconds

C:\Users\ramis\OneDrive\Documents\C++\divisible by 3.cpp - [Executing] - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

Project Classes Debug vehicle.cpp Shape.cpp divisible by 3.cpp

```
1  #include <iostream>
2  int main() {
3      int userInput;
4      std::cout << "Enter an integer: ";
5      std::cin >> userInput;
6      if (userInput % 3 == 0) {
7          std::cout << userInput << " is divisible by
8      } else {
9          std::cout << userInput << " is not divisible
10     }
11     return 0;
12 }
```

C:\Users\ramis\OneDrive\Documents\C++\divisible by 3.exe

Enter an integer: 9
9 is divisible by 3.

Process exited after 3.206 seconds with return value 0
Press any key to continue . . .

Compiler Resources Compile Log Debug Find Results Close

Abort Compilation

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ramis\OneDrive\Documents\C++\divisible by 3.exe
- Output Size: 1.83260917663574 MiB
- Compilation Time: 1.25s

Line: 7 Col: 70 Sel: 0 Lines: 12 Length: 339 Insert Done parsing in 0.015 seconds

```
1 #include<iostream>
2 using namespace std;
3 int check(int n){
4     int r = 0, sum = 0;
5     while(n > 0){
6         r = n%10;
7         sum = sum + (r*r);
8         n = n/10;
9     }
10    return sum;
11 }
12 void solve(int n)
13 {
14     int new_n = n;
15     while(new_n != 1 && new_n != 4){
16         new_n = check(new_n);
17     }
18     if(new_n == 1)
19         cout<<n<<" is a happy number";
20     else
21         if(new_n==4)
22             cout<<n<<" is not a happy number";
23 }
24 int main()
25 {
26     int n;
```

Abort Compilation

Compilation results...

```
-----
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ramis\OneDrive\Documents\C++\Happy number or not.exe
- Output Size: 1.83250427246094 MiB
- Compilation Time: 1.23s
```

C:\Users\ramis\OneDrive\Documents\C++\Happy number or not.exe

```
Enter the number13
13 is a happy number
-----
Process exited after 11.83 seconds with return value 0
Press any key to continue . . .
```



```
4  int rows, count = 0, count1 = 0, k = 0;
5  cout << "Enter number of rows: ";
6  cin >> rows;
7  for(int i = 1; i <= rows; ++i) {
8      for(int space = 1; space <= rows-i;
9          cout << " ";
10         ++count;
11     }
12     while(k != 2*i-1) {
13         if (count <= rows-1) {
14             cout << i+k << " ";
15             ++count;
16         }
17         else {
18             ++count1;
19             cout << i+k-2*count1 << " ";
20         }
21         ++k;
22     }
23     count1 = count = k = 0;
24
25     cout << endl;
26 }
27 return 0;
28 }
```

Enter number of rows: 5

```
1
2 3 2
3 4 5 4 3
4 5 6 7 6 5 4
5 6 7 8 9 8 7 6 5
```

Process exited after 2.344 seconds with return value 0
Press any key to continue . . .

Abort Compilation

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ramis\OneDrive\Documents\C++\Pyramid.exe
- Output Size: 1.83260917663574 MiB
- Compilation Time: 1.22s

☐ Shorten compiler paths

```
1 #include <iostream>
2 using namespace std;
3 class Shape {
4 public:
5     virtual float area() = 0;
6     virtual float volume() = 0;
7 };
8 class Sphere : public Shape {
9 private:
10     float radius;
11 public:
12     Sphere(float r) : radius(r) {}
13     float area() override {
14         return 4 * 3.14 * radius * radius;
15     }
16     float volume() override {
17         return (4 * 3.14 * radius * radius * radius) / 3;
18     }
19 };
20 class Cylinder : public Shape {
21 private:
22     float radius, height;
23 public:
24     Cylinder(float r, float h) : radius(r), height(h) {}
25     float area() override {
26         return 2 * 3.14 * radius * (radius + height);
```

```
Area of Sphere: 314
Volume of Sphere: 523.333
Area of Cylinder: 188.4
Volume of Cylinder: 197.82
```

```
-----
Process exited after 0.04879 seconds with return value 0
Press any key to continue . . .
```

Line	Col	File	Message
13	16	C:\Users\ramis\OneDrive\Documents\C++\Shape.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11
16	18	C:\Users\ramis\OneDrive\Documents\C++\Shape.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11
25	16	C:\Users\ramis\OneDrive\Documents\C++\Shape.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11
28	18	C:\Users\ramis\OneDrive\Documents\C++\Shape.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11

```
1  #include <iostream>
2  int main() {
3      int rows, cols;
4      std::cout << "Enter the number of rows: ";
5      std::cin >> rows;
6      std::cout << "Enter the number of columns: ";
7      std::cin >> cols;
8      int** dynamicArray = new int*[rows];
9      for (int i = 0; i < rows; ++i) {
10         dynamicArray[i] = new int[cols];
11     }
12     int value = 1;
13     for (int i = 0; i < rows; ++i) {
14         for (int j = 0; j < cols; ++j) {
15             dynamicArray[i][j] = value++;
16         }
17     }
18     std::cout << "Dynamic 2D Array:" << std::endl;
19     for (int i = 0; i < rows; ++i) {
20         for (int j = 0; j < cols; ++j) {
21             std::cout << dynamicArray[i][j] << " ";
22         }
23         std::cout << std::endl;
24     }
25     for (int i = 0; i < rows; ++i) {
26         delete[] dynamicArray[i];
```

C:\Users\ramis\OneDrive\Documents\C++\Two dimensional array.exe

```
Enter the number of rows: 5
Enter the number of columns: 5
Dynamic 2D Array:
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25

-----
Process exited after 6.002 seconds with return value 0
Press any key to continue . . .
```

Abort Compilation

Compilation results...

```
-----
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ramis\OneDrive\Documents\C++\Two dimensional array.exe
- Output Size: 1.83312225341797 MiB
- Compilation Time: 0.74s
```

```
1  #include <iostream>
2  class Vehicle {
3  public:
4      virtual void drive() const = 0;
5  };
6  class Car : public Vehicle {
7  public:
8      void drive() const override {
9          std::cout << "Car is driving." << std::endl;
10     }
11 };
12 class Truck : public Vehicle {
13 public:
14     void drive() const override {
15         std::cout << "Truck is driving." << std::endl;
16     }
17 };
18 int main() {
19     Car car;
20     Truck truck;
21     car.drive();
22     truck.drive();
23     return 0;
24 }
```

Car is driving.
Truck is driving.

Process exited after 1.693 seconds with return value 0
Press any key to continue . . .

Line	Col	File	Message
8	18	C:\Users\ramis\OneDrive\Documents\C++\vehicle.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11
14	18	C:\Users\ramis\OneDrive\Documents\C++\vehicle.cpp	[Warning] override controls (override/final) only available with -std=c++11 or -std=gnu++11