

Q1

The screenshot displays the Geany IDE interface. The main editor window shows a Java file named `Example.java` with the following code:

```
1 import java.util.*;
2 class Example{
3     public static void myMethod() {
4         System.out.println("Start myMethod");
5         System.out.println("End myMethod");
6     }
7     public static void main(String []args) {
8         System.out.println("Start main");
9         myMethod();
10        System.out.println("End main");
11    }
12 }
13
```

Below the code editor, a terminal window titled `C:\Windows\SYSTEM32\cmd.exe` shows the output of the program:

```
Start main
Start myMethod
End myMethod
End main

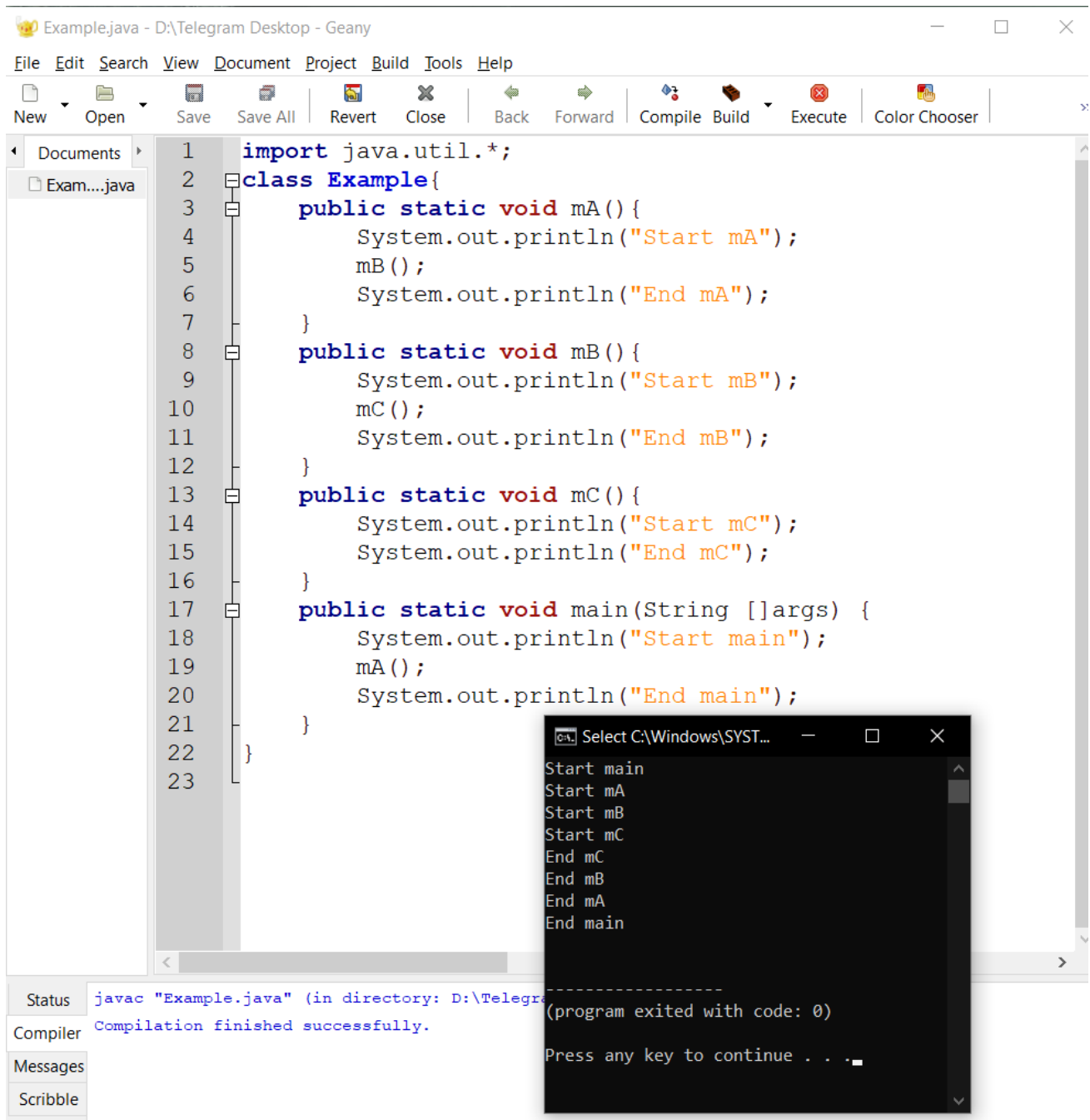
-----
(program exited with code: 0)

Press any key to continue . . .
```

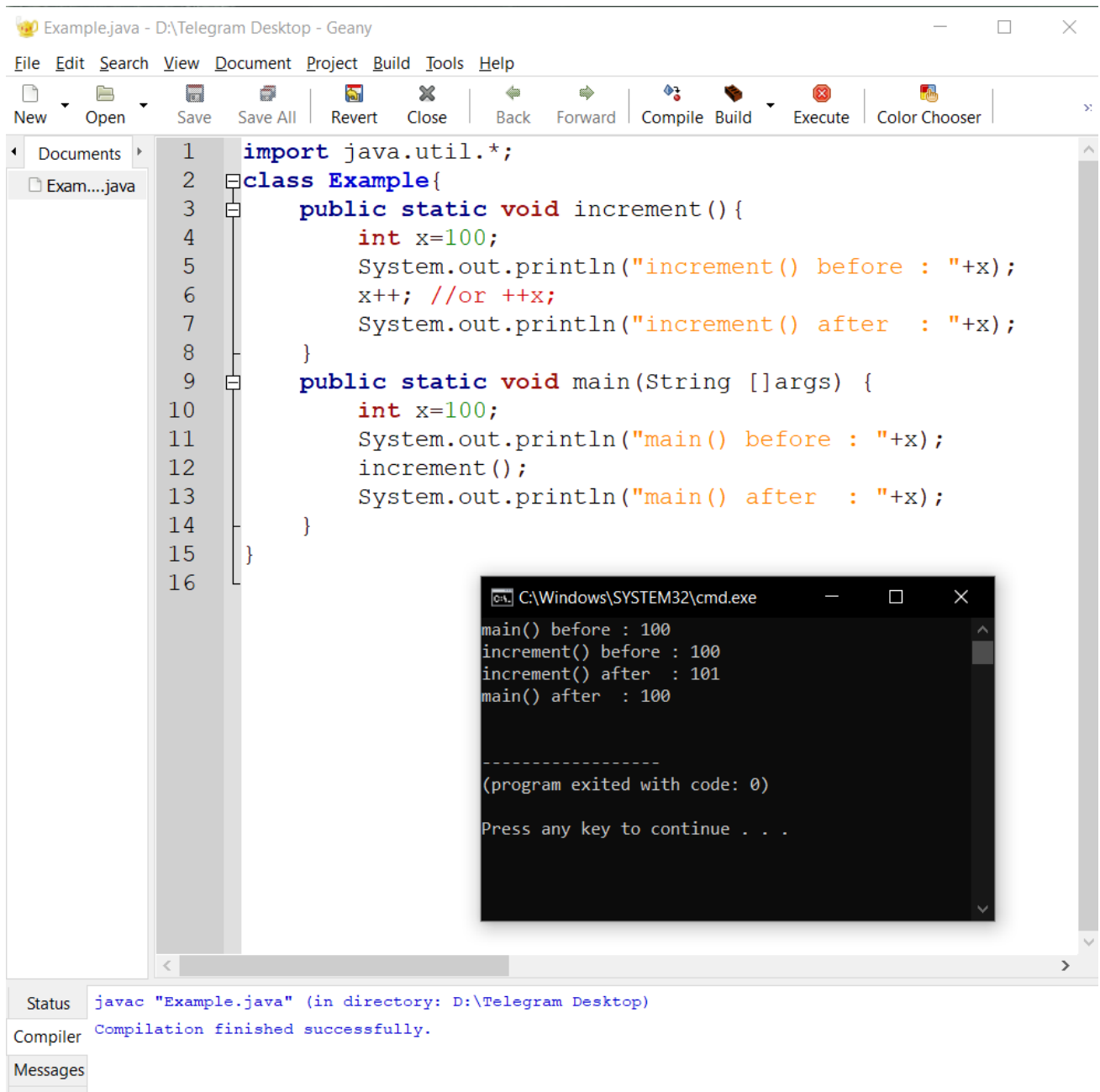
The status bar at the bottom of the IDE indicates the compilation status:

- Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`
- Compiler: `Compilation finished successfully.`
- Messages: (empty)

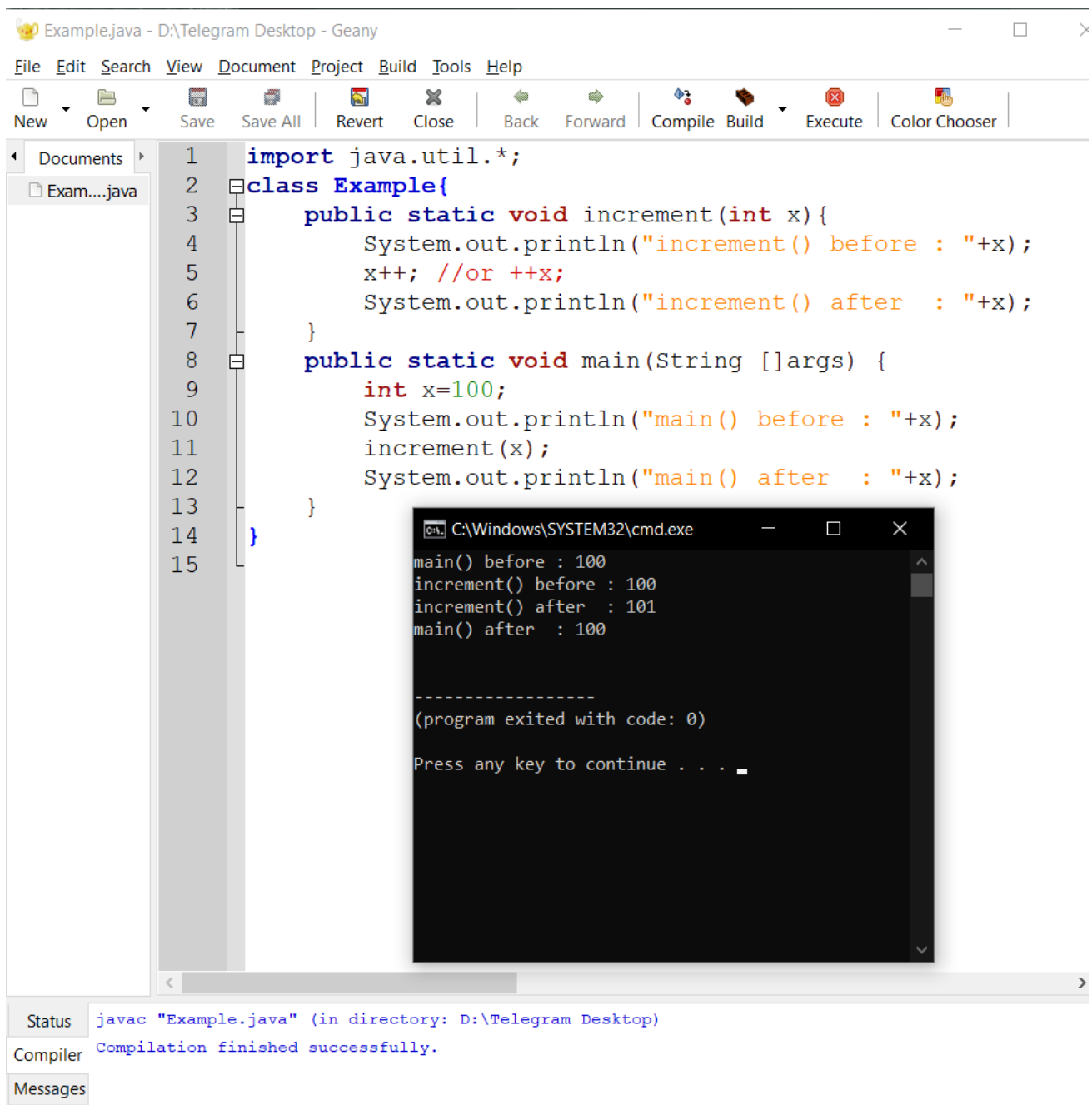
Q2 – case i



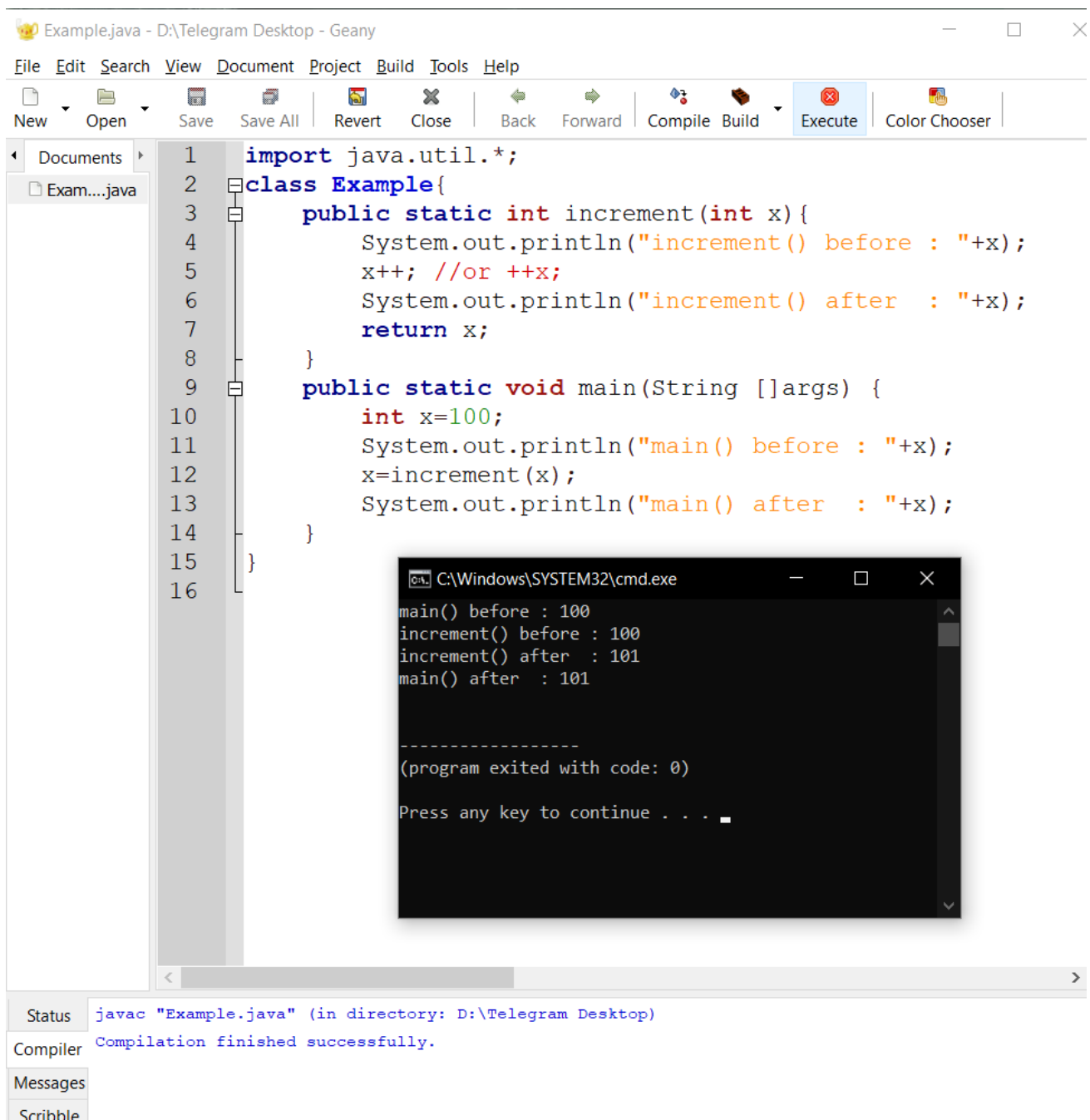
Q 3 – case ii



Q 4 – case iii



Q 5 - case iv



Q6-

Example.java - D:\Telegram Desktop - Geany

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Documents

Exam....java

```
1 import java.util.*;
2 class Example{
3     public static int increment(int x){
4         x++; //or ++x;
5         return x;
6     }
7     public static void main(String []args) {
8         int x=100;
9         increment(x);
10        System.out.println("x : "+x); //100
11
12        increment(x);
13        System.out.println("x : "+x); //100
14
15        x=increment(x);
16        System.out.println("x : "+x); //101
17    }
18 }
19 }
```

C:\Windows\SYSTEM32\cmd.exe

```
x : 100
x : 100
x : 101

-----
(program exited with code: 0)
Press any key to continue . . .
```

Status javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler Compilation finished successfully.

Messages

Q7

Example.java - D:\Telegram Desktop - Geany

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Documents

Exam....java

```
1 import java.util.*;
2 class Example{
3     public static int increment(int x){
4         x++; //or ++x;
5         return x;
6     }
7     public static void main(String []args) {
8         int x=100;
9         for (int i = 0; i < 10; i++){
10             increment(x);
11         }
12         System.out.println("x : "+x);
13     }
14 }
15 }
```

C:\Windows\SYSTEM32\cmd.exe

x : 100

(program exited with code: 0)

Press any key to continue . . .

Status javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler Compilation finished successfully.

Messages

Scribble

Q8

The screenshot shows the Geany IDE interface. The main editor window displays a Java file named `Example.java` with the following code:

```
1 import java.util.*;
2 class Example{
3     public static int increment(int x){
4         x++; //or ++x;
5         return x;
6     }
7     public static void main(String []args) {
8         int x=100;
9         for (int i = 0; i < 10; i++){
10             x=increment(x);
11         }
12         System.out.println("x : "+x);
13     }
14 }
15 }
```

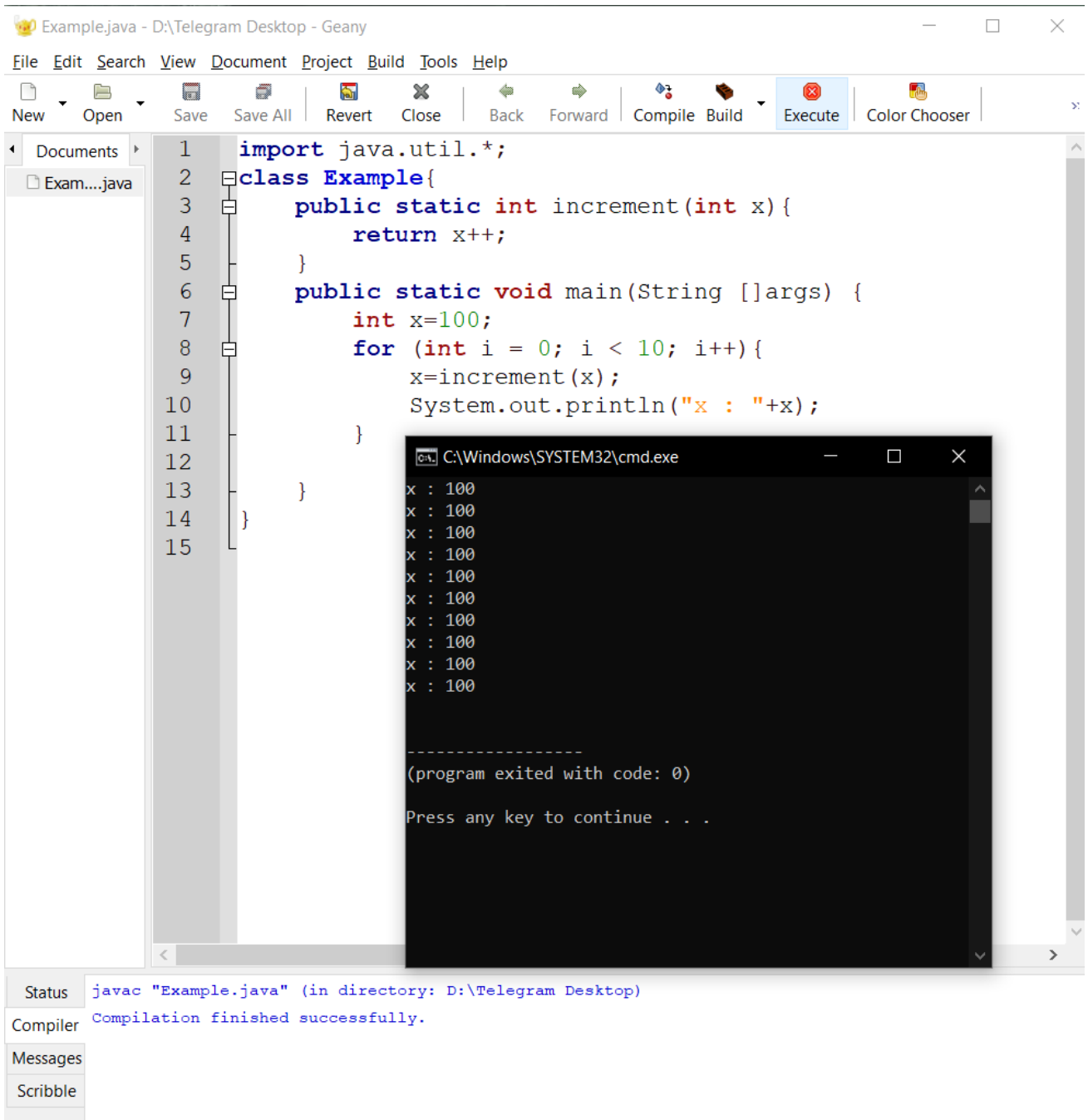
Below the code editor, a terminal window titled `C:\Windows\SYSTEM32\cmd.exe` shows the output of the program:

```
x : 110
-----
(program exited with code: 0)
Press any key to continue . . .
```

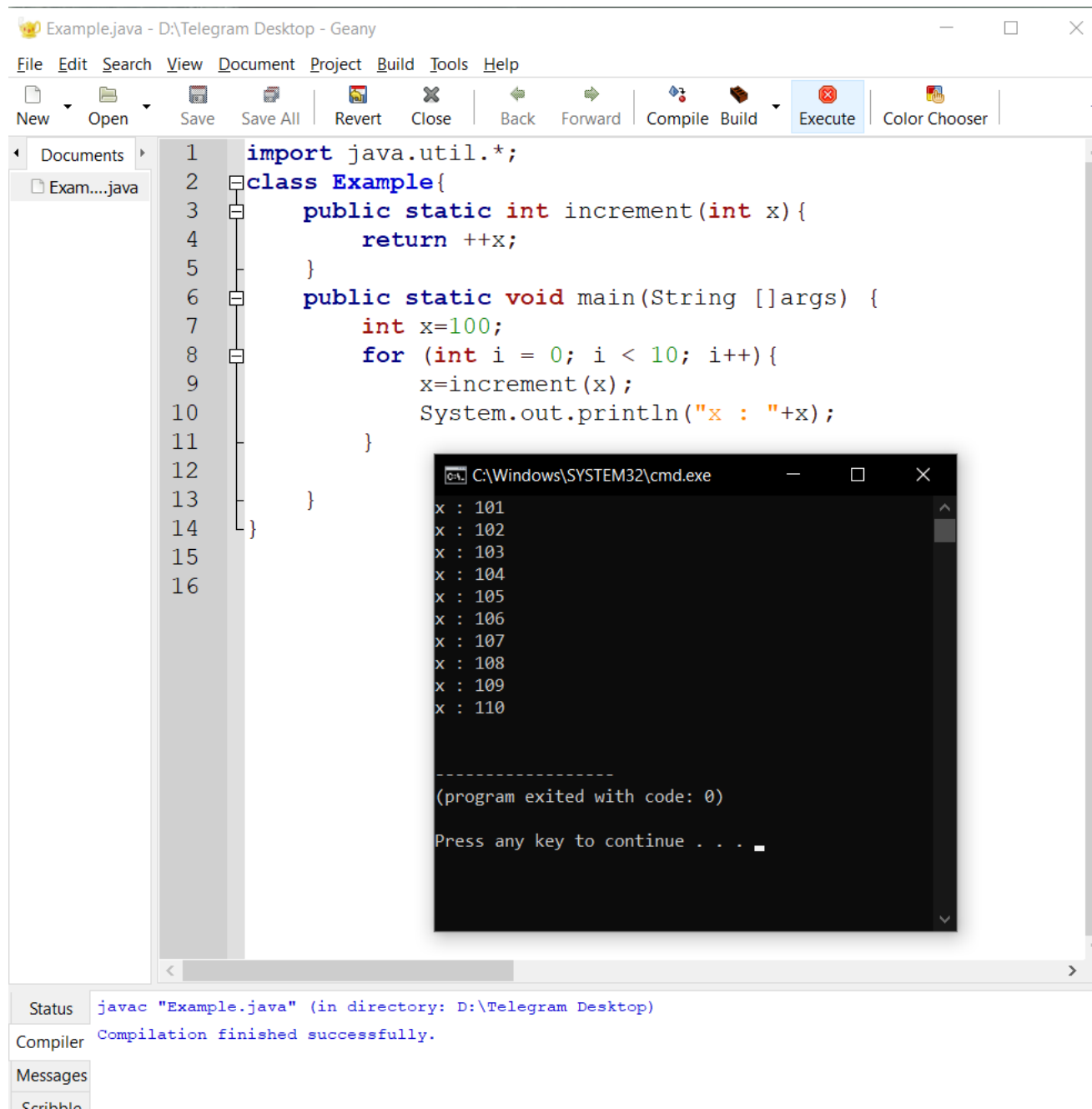
The status bar at the bottom of the IDE shows the following information:

- Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`
- Compiler: `Compilation finished successfully.`
- Messages: (empty)
- Scribble: (empty)

Q9



Q10



The screenshot displays the Geany IDE interface with a Java file named 'Example.java' open. The code defines a class 'Example' with a static method 'increment' and a static 'main' method. The 'main' method initializes 'x' to 100 and uses a 'for' loop to call 'increment' 10 times, printing the value of 'x' at each iteration. A terminal window is overlaid on the code editor, showing the output of the program: 'x : 101' through 'x : 110'. Below the code editor, the status bar shows the compilation command 'javac "Example.java" (in directory: D:\Telegram Desktop)' and the message 'Compilation finished successfully.'.

```
1 import java.util.*;
2 class Example{
3     public static int increment(int x){
4         return ++x;
5     }
6     public static void main(String []args) {
7         int x=100;
8         for (int i = 0; i < 10; i++){
9             x=increment(x);
10            System.out.println("x : "+x);
11        }
12    }
13 }
14 }
15
16
```

C:\Windows\SYSTEM32\cmd.exe

x : 101
x : 102
x : 103
x : 104
x : 105
x : 106
x : 107
x : 108
x : 109
x : 110

(program exited with code: 0)
Press any key to continue . . .

Status javac "Example.java" (in directory: D:\Telegram Desktop)
Compiler Compilation finished successfully.
Messages
Scribble

Rules for method declarations

Q11 – case i

The screenshot displays the Geany IDE interface. The main editor window shows a Java file named 'Example.java' with the following code:

```
1
2 import java.util.*;
3 class Example{
4     public static void myMethod() {
5         System.out.println("Start myMethod");
6         System.out.println("End myMethod");
7     }
8     public static void main(String args[]) {
9         //myMethod();
10    }
11 }
12
13
```

Below the code editor, a terminal window titled 'Select C:\Windows\SYSTEM32\cmd.exe' is open, showing the output of the program:

```
-----
(program exited with code: 0)
Press any key to continue . . .
```

At the bottom of the IDE, the status bar shows the command 'javac "Example.java" (in directory: D:\Telegram Desktop)' and the message 'Compilation finished successfully.'

Q12 - case ii

The screenshot displays the Geany IDE interface. The main editor window shows a Java file named 'Example.java' with the following code:

```
1 import java.util.*;
2 class Example{
3     public static void myMethod(){
4         System.out.println("Start myMethod");
5         System.out.println("End myMethod");
6     }
7     public static void main(String args[]){
8         myMethod();
9     }
10 }
11
```

Below the code editor, a terminal window titled 'C:\Windows\SYSTEM32\cmd.exe' shows the output of the program:

```
Start myMethod
End myMethod

-----
(program exited with code: 0)
Press any key to continue . . .
```

The bottom status bar of the IDE shows the following information:

- Status: javac "Example.java" (in directory: D:\Telegram Desktop)
- Compiler: Compilation finished successfully.
- Messages
- Scribble

Q13 – case iii

The screenshot shows the Geany IDE with a Java file named `Example.java` open. The code defines a class `Example` with three static methods: `mB()`, `main()`, and `mC()`. The `main()` method calls `mA()`, which in turn calls `mB()`, which calls `mC()`. Each method prints its start and end messages to the console.

```
1 class Example{
2     public static void mB() {
3         System.out.println("Start mB");
4         mC();
5         System.out.println("End mB");
6     }
7     public static void main(String args[]) {
8         System.out.println("Start main");
9         mA();
10        System.out.println("End main");
11    }
12    public static void mC() {
13        System.out.println("Start mC");
14        System.out.println("End mC");
15    }
16    public static void mA() {
17        System.out.println("Start mA");
18        mB();
19        System.out.println("End mA");
20    }
21 }
22
23
24
```

The output window shows the execution results:

```
Start mB
Start mC
End mC
End mB
End mA
End main

-----
(program exited with code: 0)
Press any key to continue . . .
```

The status bar at the bottom indicates that the compilation finished successfully.

Status: `javac "Example.java" (i`
Compiler: `Compilation finished su`
Messages:
Scribble:

Q14 – case iv

Example.java - D:\Telegram Desktop - Geany

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Documents

Exam....java

```
1 import java.util.*;
2 class Example{
3     public static void main(String args[]){
4         public static void myMethod(){ //Illegal
5             System.out.println("Start myMethod");
6             System.out.println("End myMethod");
7         }
8
9         myMethod();
10    }
11 }
12
13
```

Status javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler Example.java:4: error: illegal start of expression

Messages public static void myMethod(){ //Illegal
^

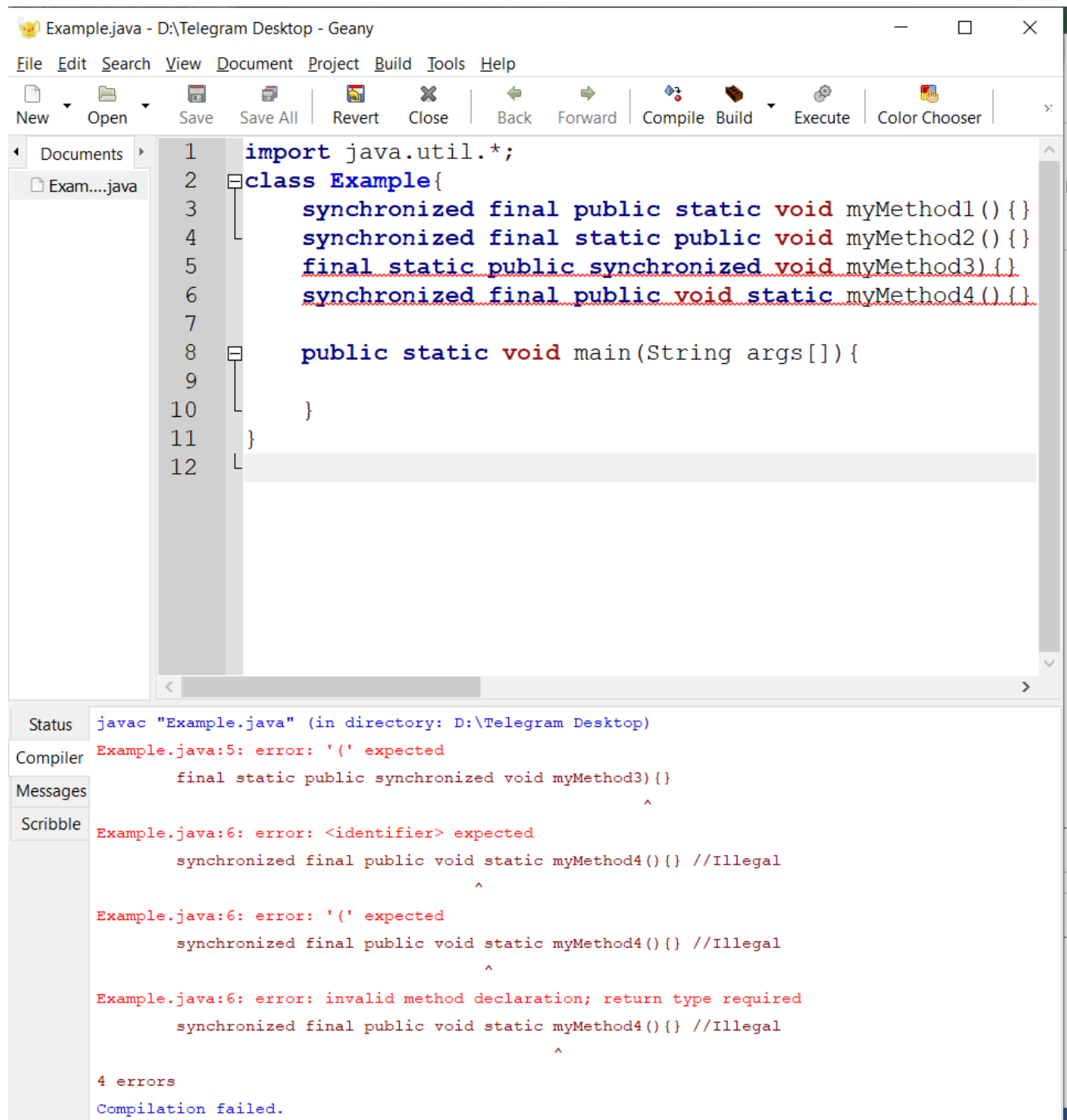
Scribble Example.java:4: error: illegal start of expression
public static void myMethod(){ //Illegal
^

Example.java:4: error: ';' expected
public static void myMethod(){ //Illegal
^

Example.java:4: error: ';' expected
public static void myMethod(){ //Illegal
^

4 errors
Compilation failed.

Q15 – case v



Q 16 – case vi

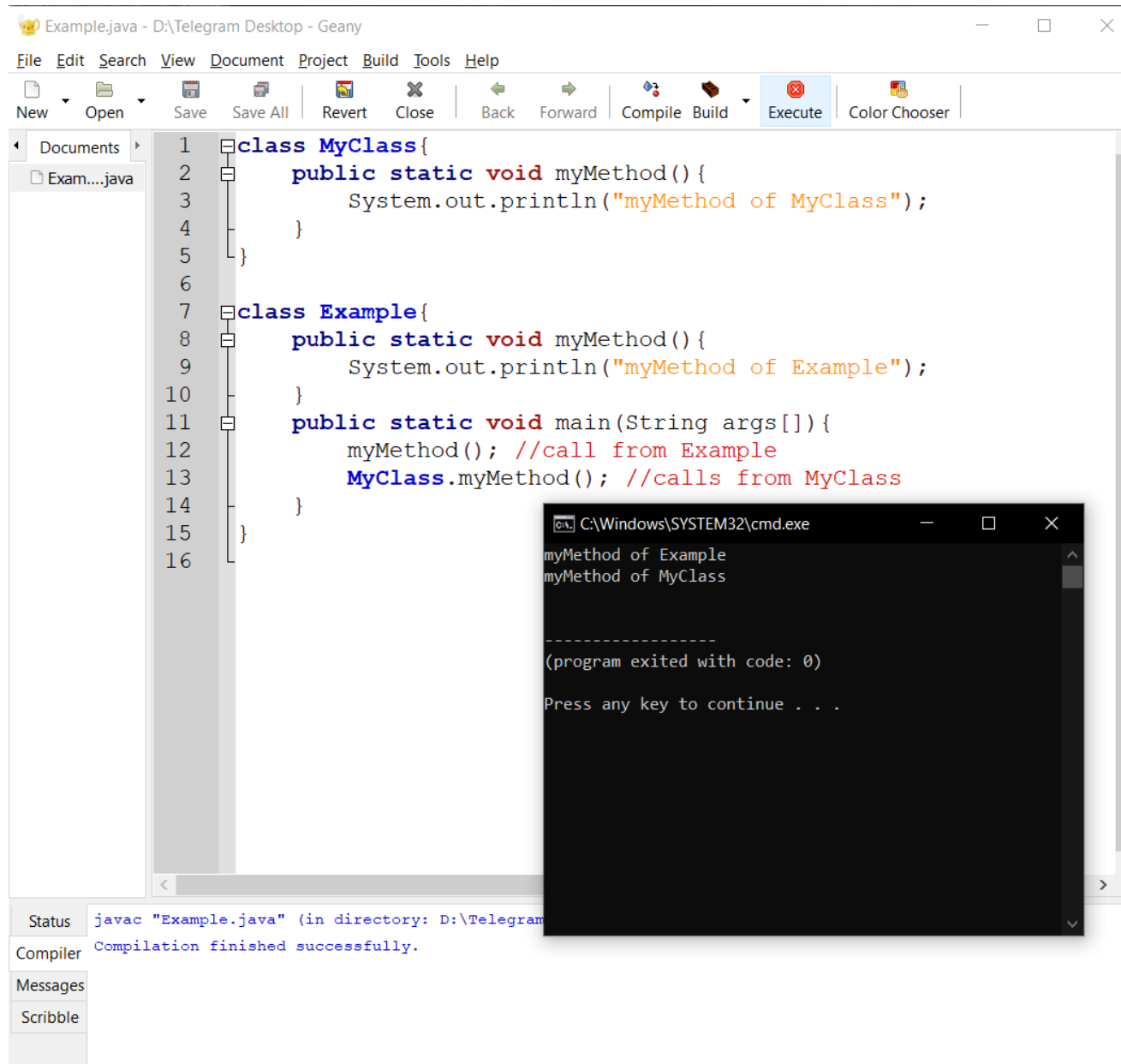
//-----MyClass.java-----//

```
class MyClass{
    public static void myMethod(){
        System.out.println("myMethod of MyClass");
    }
}
```

//-----Example.java-----//

```
class Example{
    public static void main(String args[]){
        //myMethod();
        MyClass.myMethod();
    }
}
```


Q17 – case vii



Q18 – case viii

The screenshot displays the Geany IDE interface. The main editor window shows a Java file named `Example.java` with the following code:

```
1 class Example{
2     public void myMethod() {
3         System.out.println("myMethod of Example");
4     }
5     public static void main(String args[]) {
6         //myMethod(); //Illegal
7         Example ob=new Example(); //Create an Object
8         ob.myMethod(); //non static method "myMethod()"
9     }
10 }
11
12
```

Below the editor, a status bar indicates the compilation process:

- Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`
- Compiler: `Compilation finished successfully.`
- Messages: (empty)
- Scribble: (empty)

An external terminal window is overlaid on the IDE, showing the output of the program:

```
Select C:\Windows\SYSTEM32\cmd.exe
myMethod of Example

-----
(program exited with code: 0)
Press any key to continue . . .
```

Q19 – case ixx

The screenshot shows the Geany IDE with a file named 'Example.java' open. The code in the editor is as follows:

```
1 class Example{
2     public static void myMethod(int a, b){ //int a, int b
3
4     }
5     public static void main(String args[]){
6
7     }
8 }
9
```

The IDE's status bar at the bottom displays the following information:

- Status:** javac "Example.java" (in directory: D:\Telegram Desktop)
- Compiler:** Example.java:2: error: <identifier> expected
- Messages:** public static void myMethod(int a, b){ //int a, int b
- Scribble:** 1 error
- Compilation failed.**

The error message indicates a syntax error on line 2, where the parameter 'b' in the method signature is not preceded by a type declaration, despite the comment '//int a, int b'.

Q20 – case xx

Example.java - D:\Telegram Desktop - Geany

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Documents

Exam....java

```
1 class Example{
2     public static void myMethod(int a, int b){
3         int total;
4         total=a+b;
5         int a: //Illegal
6         int b: //Illegal
7         int c;
8     }
9     public static void main(String args[]){
10
11     }
12 }
13
```

Status: javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler: Example.java:5: error: variable a is already defined in method myMethod(int,int)

Messages: int a; //Illegal

Scribble: Example.java:6: error: variable b is already defined in method myMethod(int,int)

int b; //Illegal

2 errors

Compilation failed.

Q21 – case xxi

Example.java - D:\Telegram Desktop - Geany

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```
1 class Example{
2     public static void myMethod(int a, int b){
3         System.out.println("myMethod(int,int)");
4     }
5     public static void main(String args[]){
6         myMethod(10);
7         myMethod(10,20);
8         myMethod(10,20,30);
9     }
10 }
11
12
```

Status `javac "Example.java" (in directory: D:\Telegram Desktop)`

Compiler `Example.java:6: error: method myMethod in class Example cannot be applied to given types;`

Messages `myMethod(10);`

Scribble `^`

`required: int,int`

`found: int`

`reason: actual and formal argument lists differ in length`

`Example.java:8: error: method myMethod in class Example cannot be applied to given types;`

`myMethod(10,20,30);`

`^`

`required: int,int`

`found: int,int,int`

`reason: actual and formal argument lists differ in length`

`2 errors`

`Compilation failed.`

Q22 – case xxii

The screenshot shows the Geany IDE interface. The main editor window displays the following Java code:

```
1 class Example{
2     public static void myMethod(int a) {
3         System.out.println("myMethod(int,int)");
4     }
5     public static void main(String args[]) {
6         byte a=100;
7         short b=100;
8         int x=100;
9         long y=200;
10        float f=10.0f;
11        double d=1.2;
12        char ch='A';
13
14        myMethod(a);
15        myMethod(b);
16        myMethod(x);
17        myMethod(y);
18        myMethod(f);
19        myMethod(d);
20    }
21 }
22
```

The status bar at the bottom indicates three compilation errors:

- Example.java:17: error: incompatible types: possible lossy conversion from long to int
myMethod(y);
- Example.java:18: error: incompatible types: possible lossy conversion from float to int
myMethod(f);
- Example.java:19: error: incompatible types: possible lossy conversion from double to int
myMethod(d);

A note at the bottom states: "Note: Some messages have been simplified; recompile with -Xdiags:verbose to get full output". The total count of errors is 3.

Q23 – case xxiii

The screenshot displays the Geany IDE interface. The main editor window shows a Java file named `Example.java` with the following code:

```
1 class Example{
2     public static double average(int total, int n){ //total-->total
3         double avg=(double)total/n;
4         return avg;
5     }
6     public static void main(String args[]){
7         int total=568;
8         int n=10;
9         System.out.println("average marks : "+average(total,n))
10
11         total=959;
12         n=10;
13         System.out.println("average marks : "+average(n,total))
14     }
15 }
16 }
```

Below the editor, a terminal window titled `C:\Windows\SYSTEM32\cmd.exe` shows the output of the program:

```
average marks : 56.8
average marks : 0.010427528675703858

-----
(program exited with code: 0)
Press any key to continue . . .
```

At the bottom of the IDE, the `Status` bar indicates: `javac "Example.java" (in directory: D:\Telegram Desktop)` and `Compilation finished successfully.` The `Compiler` tab is also visible.

Q24

The screenshot displays the Geany IDE interface. The main editor window shows a Java file named `Example.java` with the following code:

```
1 //import java.lang.*;
2 class Example{
3     public static void main(String args[]){
4         double x;
5         x=Math.pow(7,2);
6         System.out.println("2^7 : "+x); //49
7
8         x=Math.pow(2,7);
9         System.out.println("2^7 : "+x); //128
10    }
11 }
12
```

Overlaid on the IDE is a Windows command prompt window titled `C:\Windows\SYSTEM32\cmd.exe`. It shows the output of the Java program:

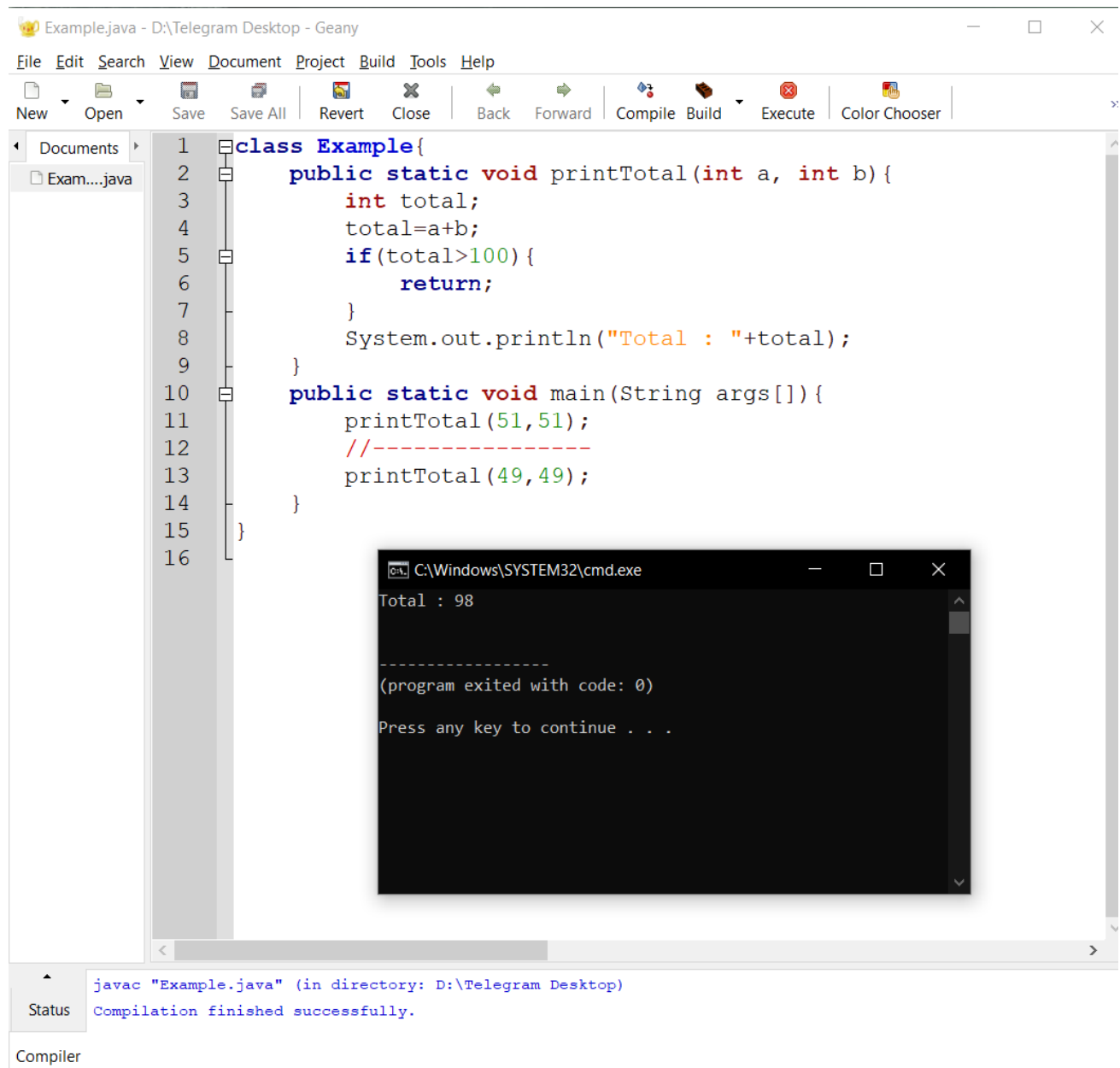
```
2^7 : 49.0
2^7 : 128.0

-----
(program exited with code: 0)

Press any key to continue . . .
```

At the bottom of the Geany window, the **Status** bar indicates: `javac "Example.java" (in directory: D:\Telegram Desktop)` and `Compilation finished successfully.` The **Compiler** tab is also visible.

Q25 – case xiv



The screenshot displays the Geany IDE interface. The main editor window shows a Java file named `Example.java` with the following code:

```
1 class Example{
2     public static void printTotal(int a, int b){
3         int total;
4         total=a+b;
5         if(total>100){
6             return;
7         }
8         System.out.println("Total : "+total);
9     }
10    public static void main(String args[]){
11        printTotal(51,51);
12        //-----
13        printTotal(49,49);
14    }
15 }
16
```

A terminal window titled `C:\Windows\SYSTEM32\cmd.exe` is overlaid on the code, showing the output of the program:

```
Total : 98

-----
(program exited with code: 0)
Press any key to continue . . .
```

At the bottom of the IDE, the status bar shows the command `javac "Example.java" (in directory: D:\Telegram Desktop)` and the message `Compilation finished successfully.` The `Compiler` tab is active.

Q26 – case xv

The screenshot shows the Geany IDE with a file named 'Example.java' open. The code is as follows:

```
1 class Example{
2     public static void printTotal(int a, int b){
3         int total;
4         total=a+b;
5         System.out.println("Total : "+total);
6         return total;
7     }
8     public static void main(String args[]){
9         printTotal(51,51);
10        //-----
11        printTotal(49,49);
12    }
13 }
14
15
```

The status bar at the bottom indicates a compilation error:

- Status: javac "Example.java" (in directory: D:\Telegram Desktop)
- Compiler: Example.java:6: error: incompatible types: unexpected return value
- Messages: return total;
- Scribble: 1 error
- Compilation failed.

Q27 – case xvi

Example.java - D:\Telegram Desktop - Geany

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Documents

Exam....java

```
1 class Example{
2     public static void printTotal(int a, int b){
3         int total;
4         total=a+b;
5         return;
6         System.out.println("Total : "+total);
7     }
8     public static void main(String args[]){
9         printTotal(51,51);
10        //-----
11        printTotal(49,49);
12    }
13 }
14
15
```

Status javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler Example.java:6: error: unreachable statement

Messages System.out.println("Total : "+total);

Scribble ^

1 error

Compilation failed.

Q28 – caes xvii

The screenshot shows the Geany IDE interface. The main editor window displays a Java file named `Example.java` with the following code:

```
1 class Example{
2     public static int findTotal(int a, int b){
3         int total;
4         total=a+b;
5         System.out.println("Total : "+total);
6     }
7     public static void main(String args[]){
8
9     }
10 }
11
```

The code is syntactically correct, but the IDE reports a compilation error. The error message is displayed in the bottom status bar:

Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`

Compiler: `Example.java:6: error: missing return statement`

Messages:

Scribble: `1 error`
`Compilation failed.`

The error message indicates that the `findTotal` method is missing a return statement, even though it is declared to return an `int`. This is a common mistake in Java when a method is intended to calculate a value but does not actually return it.

Q29 – case xviii

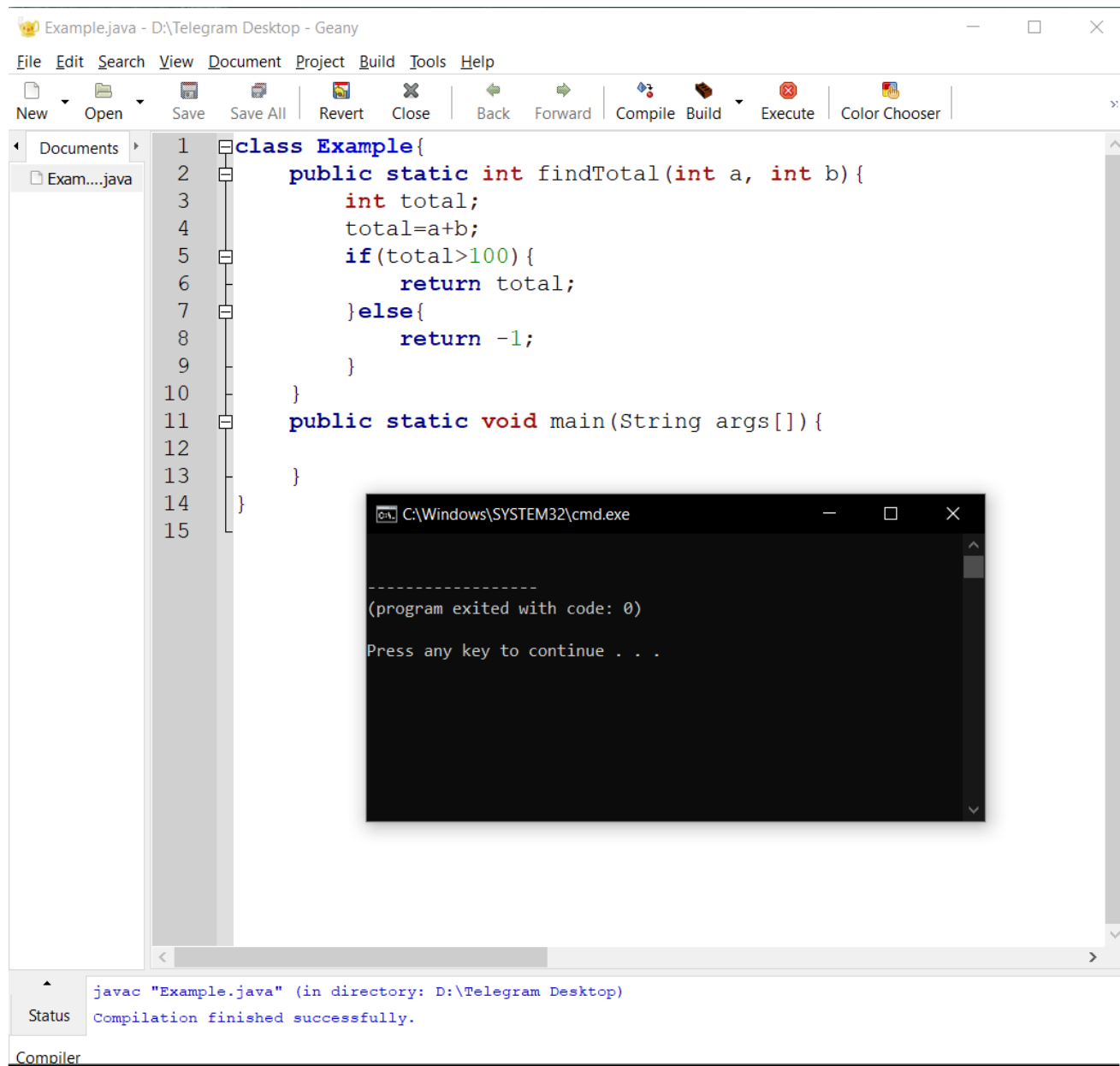
The screenshot shows the Geany IDE with a Java file named 'Example.java' open. The code defines a class 'Example' with two methods: 'findTotal' and 'main'. The 'findTotal' method calculates the sum of two integers 'a' and 'b' and returns the result. The 'main' method calls 'findTotal' with arguments 10 and 20. The code is as follows:

```
1 class Example{
2     public static int findTotal(int a, int b){
3         int total;
4         total=a+b;
5         if(total>100){
6             return total;
7         }
8     }
9     public static void main(String args[]){
10
11     }
12 }
13
14
```

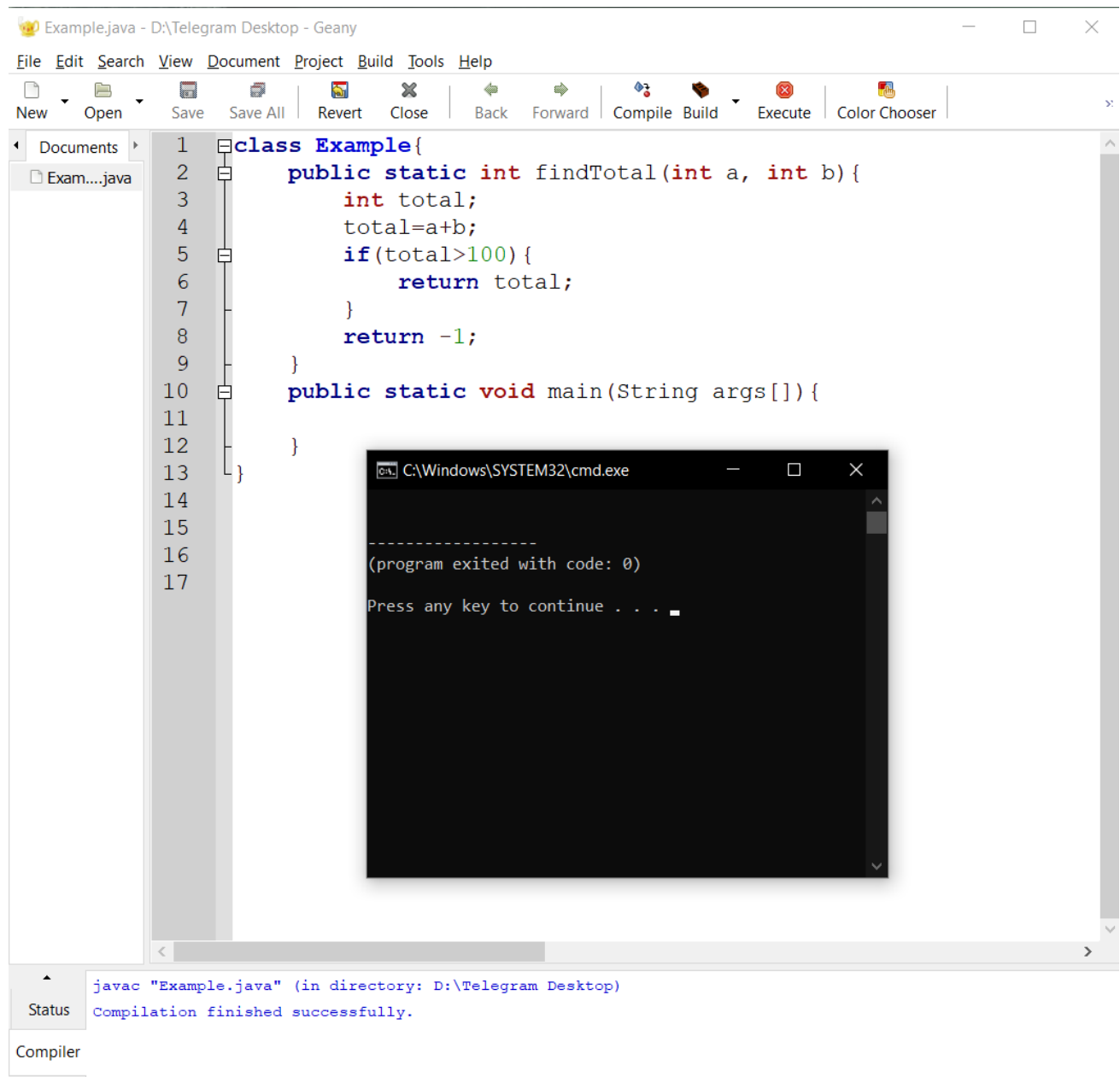
The IDE's status bar at the bottom shows the following information:

- Status: javac "Example.java" (in directory: D:\Telegram Desktop)
- Compiler: Example.java:8: error: missing return statement
- Messages: }
- Scribble: ^
- 1 error
- Compilation failed.

Q30 – option 1



Q31 - option 2



The screenshot shows the Geany IDE interface. The main editor window displays a Java file named `Example.java` with the following code:

```
1 class Example{
2     public static int findTotal(int a, int b){
3         int total;
4         total=a+b;
5         if(total>100){
6             return total;
7         }
8         return -1;
9     }
10    public static void main(String args[]){
11
12    }
13 }
14
15
16
17
```

A terminal window titled `C:\Windows\SYSTEM32\cmd.exe` is open in the foreground, displaying the output of the program:

```
-----
(program exited with code: 0)
Press any key to continue . . .
```

The status bar at the bottom of the IDE shows the command `javac "Example.java" (in directory: D:\Telegram Desktop)` and the message `Compilation finished successfully.` The `Compiler` tab is selected.

Q32 - option 3

The screenshot shows the Geany IDE with a Java file named 'Example.java' open. The code defines a class 'Example' with a method 'findTotal' and a 'main' method. The 'findTotal' method has a logic error: it returns 'total' if 'total > 100', but otherwise it returns '-1'. The line 'return 0; //Illegal' is highlighted with a red squiggly line, indicating it is unreachable. The status bar at the bottom shows the command 'javac "Example.java" (in directory: D:\Telegram Desktop)' and a compiler error: 'Example.java:10: error: unreachable statement'. The error message points to the 'return 0; //Illegal' line with a caret (^) and states '1 error' and 'Compilation failed.'

```
1 class Example{
2     public static int findTotal(int a, int b){
3         int total;
4         total=a+b;
5         if(total>100){
6             return total;
7         }else{
8             return -1;
9         }
10        return 0; //Illegal
11    }
12    public static void main(String args[]){
13
14    }
15 }
16
```

Status: javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler: Example.java:10: error: unreachable statement

Messages: return 0; //Illegal
^

Scribble: 1 error
Compilation failed.

Q33

The screenshot shows the Geany IDE with a Java file named `Example.java` open. The code defines a class `Example` with a `main` method that iterates from 0 to 10000, checking for prime numbers using a method `isPrime`. The IDE's status bar and compiler messages pane show a compilation error: `Example.java:4: error: cannot find symbol` for the `isPrime` method call. The error details indicate that the symbol is a method `isPrime(int)` located in the class `Example`, but it cannot be found.

```
1 class Example{
2     public static void main(String args[]){
3         for (int i = 0; i < 10000; i++){
4             if(isPrime(i)){
5                 System.out.println(i);
6             }
7         }
8     }
9 }
10
11
12
13
14
```

Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`

Compiler: `Example.java:4: error: cannot find symbol`

Messages:

Scribble:

- symbol: method `isPrime(int)`
- location: class `Example`
- 1 error
- Compilation failed.

Q34 - option 1

The screenshot shows the Geany IDE with a Java file named `Example.java` open. The code defines a `class Example` with two methods: `isPrime` and `main`. The `isPrime` method checks if a number is prime by counting divisors. The `main` method iterates from 0 to 10000, printing all prime numbers found. A terminal window is overlaid on the IDE, showing the output of the program: a list of prime numbers (9887, 9901, 9907, 9923, 9929, 9931, 9941, 9949, 9967, 9973) followed by a separator line and the message "(program exited with code: 0)". The status bar at the bottom indicates that the compilation finished successfully.

```
1 class Example{
2     public static boolean isPrime(int num) {
3         int count=0;
4         for (int i = 2; i < num; i++){
5             if(num%i!=0){
6                 count++;
7             }
8         }
9         return count==num-2;
10    }
11    public static void main(String args[]){
12        for (int i = 0; i < 10000; i++){
13            if(isPrime(i)){
14                System.out.println(i);
15            }
16        }
17    }
18 }
19
20
```

9887
9901
9907
9923
9929
9931
9941
9949
9967
9973

(program exited with code: 0)
Press any key to continue . . .

Status: javac "Example.java" (in directory: D:\Telegram Desktop - Geany)
Compiler: Compilation finished successfully.
Messages:
Scribble:

Q35 – option 2

The screenshot shows the Geany IDE with a Java file named 'Example.java'. The code defines a class 'Example' with two methods: 'isPrime' and 'main'. The 'isPrime' method checks if a number is prime by testing divisibility from 2 to the number itself. The 'main' method iterates through numbers from 0 to 10000, printing the prime numbers. A terminal window is open, showing the output of the program, which lists prime numbers: 9887, 9901, 9907, 9923, 9929, 9931, 9941, 9949, 9967, and 9973. The terminal also shows the message '(program exited with code: 0)' and 'Press any key to continue . . .'. The Geany IDE's status bar at the bottom indicates 'Compilation finished successfully.'

```
1 class Example{
2     public static boolean isPrime(int num) {
3         boolean isPrime=true;
4         for (int i = 2; i < num; i++){
5             if(num%i==0){
6                 isPrime=false;
7                 break;
8             }
9         }
10        return isPrime;
11    }
12    public static void main(String args[]){
13        for (int i = 0; i < 10000; i++){
14            if(isPrime(i)){
15                System.out.println(i);
16            }
17        }
18    }
19 }
20 }
21 }
```

Output of the program:

```
9887
9901
9907
9923
9929
9931
9941
9949
9967
9973
-----
(program exited with code: 0)
Press any key to continue . . .
```

Status: javac "Example.java" (in directory: D:\Telegra
Compiler: Compilation finished successfully.
Messages:
Scribble:

Q36 – option 3

The screenshot shows the Geany IDE with a Java file named `Example.java` open. The code defines a `class Example` with two methods: `isPrime` and `main`. The `isPrime` method checks if a number is prime by testing divisibility from 2 to `num - 1`. The `main` method iterates from 0 to 10000, printing all prime numbers found. The status bar at the bottom indicates that the compilation was successful.

```
1 class Example{
2     public static boolean isPrime(int num) {
3         for (int i = 2; i < num; i++) {
4             if(num%i==0){
5                 return false;
6             }
7         }
8         return true;
9     }
10    public static void main(String args[]){
11        for (int i = 0; i < 10000; i++){
12            if(isPrime(i)){
13                System.out.println(i);
14            }
15        }
16    }
17 }
18
19 }
```

Compiler: `javac "Example.java" (in directory: D:\Telegram Desktop)`
Status: `Compilation finished successfully.`

The output window shows the following prime numbers:

```
9839
9851
9857
9859
9871
9883
9887
9901
9907
9923
9929
9931
9941
9949
9967
9973
```

(program exited with code: 0)
Press any key to continue . . .

Q37

The image shows the Geany IDE interface with a Java file named `Example.java` open. The code defines a `class Example` with two methods: `isPrime` and `main`. The `isPrime` method checks if a number is prime by testing divisibility from 2 to `num-1`. The `main` method iterates from 0 to 10000, printing all prime numbers found. The status bar at the bottom indicates that the compilation was successful.

```
1 class Example{
2     public static boolean isPrime(int num) {
3         for (int i = 2; i < num; i++) {
4             if(num%i==0){
5                 return false;
6             }
7         }
8         return true;
9     }
10    public static void main(String args[]){
11        for (int i = 0; i < 10000; i++){
12            if(isPrime(i)){
13                System.out.println(i);
14            }
15        }
16    }
17 }
18
19 }
```

Output window (C:\Windows\SYSTEM32\cmd.exe):

```
9839
9851
9857
9859
9871
9883
9887
9901
9907
9923
9929
9931
9941
9949
9967
9973

-----
(program exited with code: 0)
Press any key to continue . . .
```

Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`
Compiler: `Compilation finished successfully.`
Messages:
Scribble:

Q38

The screenshot shows the Geany IDE interface. The main editor window displays a Java file named `Example.java` with the following code:

```
1 class Example{
2     public static int findTotal(int a, int b){
3         int total;
4         total=a+b;
5         return total; //return a+b;
6     }
7     public static void main(String args[]){
8         int tot=findTotal(10,20);
9         System.out.println(tot); //prints 30
10
11         findTotal(10,20); //Legal
12     }
13 }
14
15
```

The status bar at the bottom indicates that the compilation was successful:

Status: `javac "Example.java" (in directory: D:\Telegram Desktop - Geany)`
Compiler: `Compilation finished successfully.`

Overlaid on the IDE is a Windows command prompt window titled `C:\Windows\SYSTEM32\cmd.exe`. It shows the output of the program:

```
30
-----
(program exited with code: 0)
Press any key to continue . . .
```

Q39

Example.java - D:\Telegram Desktop - Geany

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New Open Save Save All Revert Close Back Forward Compile Build Execute Color Chooser

Documents

Exam....java

```
1 class Example{
2     public static int findTotal(int a, int b){
3         int total;
4         total=a+b;
5         return total; //return a+b;
6     }
7     public static void printTotal(int a, int b){
8         int total;
9         total=a+b;
10        System.out.println(total);
11    }
12    public static void main(String args[]){
13        int tot;
14        tot=findTotal(10,20);
15        tot=printTotal(10,20); //Illegal
16
17        System.out.println(findTotal(10,20));
18        System.out.println(printTotal(10,20)); //Illegal
19    }
20 }
21
```

Status javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler Example.java:15: error: incompatible types: void cannot be converted to int
tot=printTotal(10,20); //Illegal
^

Messages

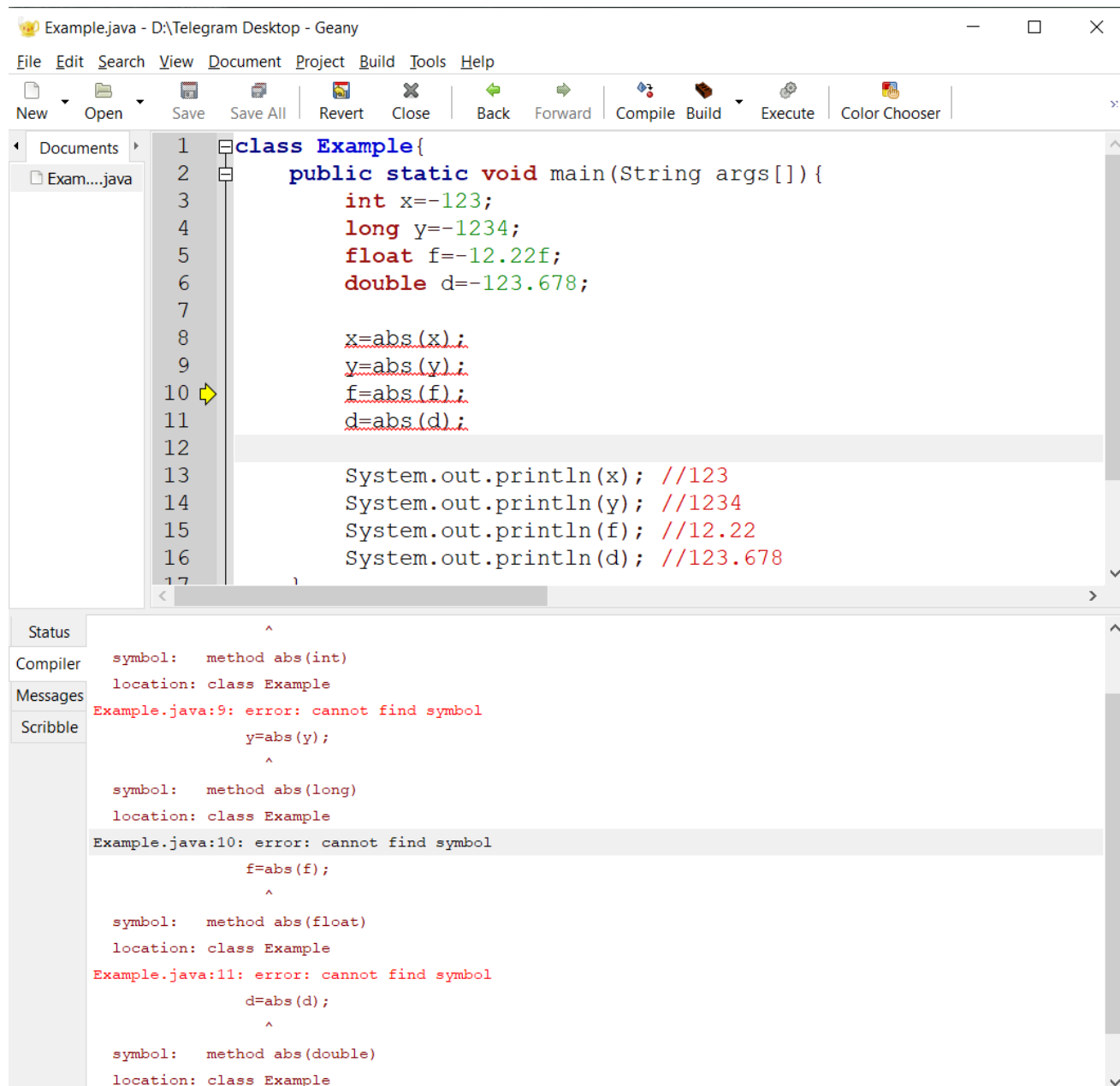
Scribble Example.java:18: error: 'void' type not allowed here
System.out.println(printTotal(10,20)); //Illegal
^

2 errors
Compilation failed.

Method Overloading

(Same name, different parameters list)

Q 40



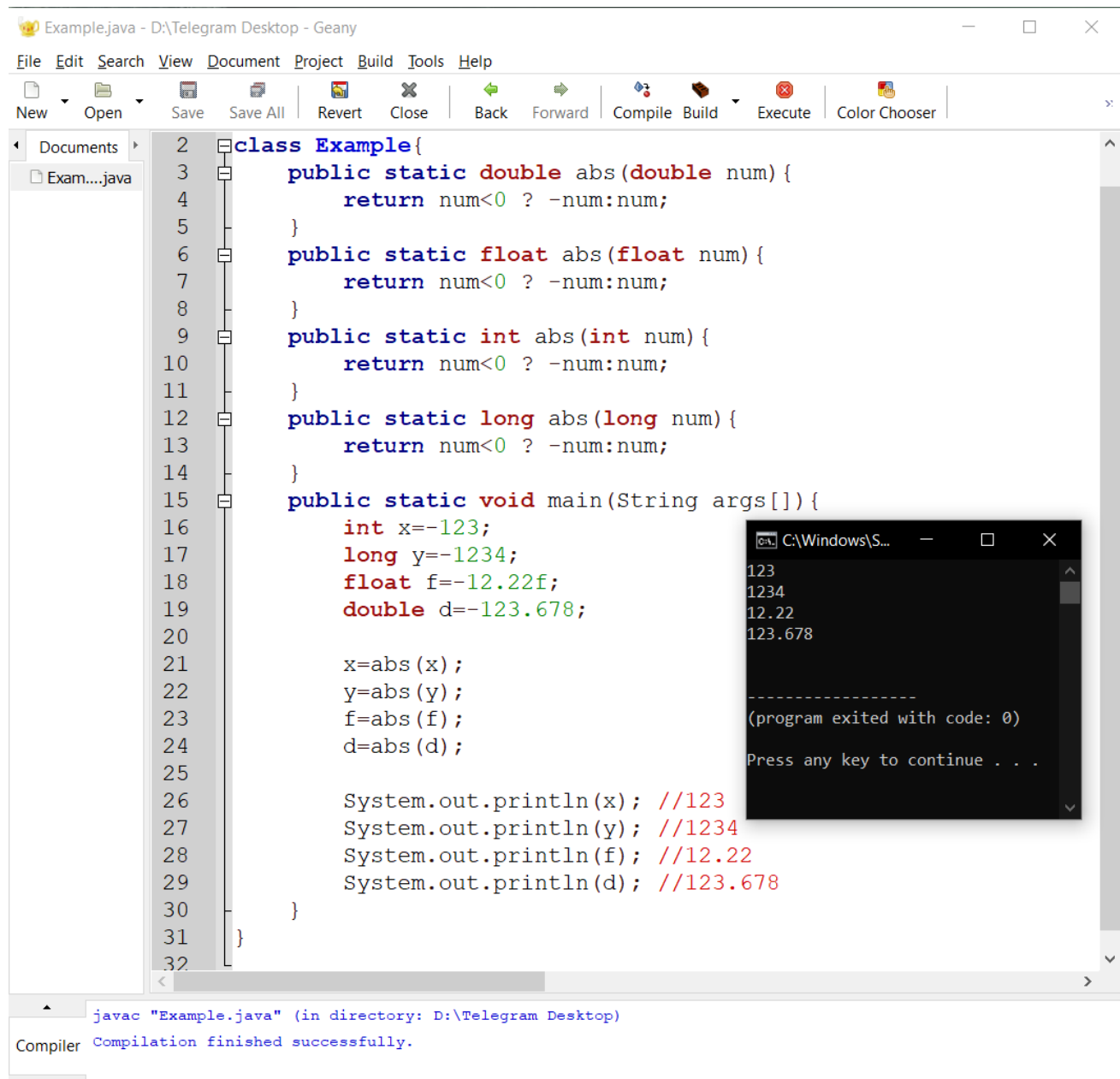
The screenshot shows the Geany IDE with a file named 'Example.java' open. The code defines a class 'Example' with a 'main' method. Inside 'main', variables of different types (int, long, float, double) are declared and then passed to a method named 'abs'. The IDE's compiler messages pane at the bottom shows four errors, one for each 'abs' call, stating 'cannot find symbol'. The messages pane also lists the symbols found for 'abs' with their respective parameter types: 'abs(int)', 'abs(long)', 'abs(float)', and 'abs(double)'.

```
1 class Example{
2     public static void main(String args[]){
3         int x=-123;
4         long y=-1234;
5         float f=-12.22f;
6         double d=-123.678;
7
8         x=abs(x);
9         y=abs(y);
10        f=abs(f);
11        d=abs(d);
12
13        System.out.println(x); //123
14        System.out.println(y); //1234
15        System.out.println(f); //12.22
16        System.out.println(d); //123.678
17    }
18 }
```

Compiler messages:

- symbol: method abs(int)
location: class Example
Example.java:9: error: cannot find symbol
y=abs(y);
- symbol: method abs(long)
location: class Example
Example.java:10: error: cannot find symbol
f=abs(f);
- symbol: method abs(float)
location: class Example
Example.java:11: error: cannot find symbol
d=abs(d);
- symbol: method abs(double)
location: class Example

Q41



The screenshot shows a Java IDE window titled "Example.java - D:\Telegram Desktop - Geany". The menu bar includes File, Edit, Search, View, Document, Project, Build, Tools, and Help. The toolbar contains icons for New, Open, Save, Save All, Revert, Close, Back, Forward, Compile, Build, Execute, and Color Chooser. The left sidebar shows the "Documents" list with "Exam....java" selected. The main editor displays the following Java code:

```
2 class Example{
3     public static double abs(double num) {
4         return num<0 ? -num:num;
5     }
6     public static float abs(float num) {
7         return num<0 ? -num:num;
8     }
9     public static int abs(int num) {
10        return num<0 ? -num:num;
11    }
12    public static long abs(long num) {
13        return num<0 ? -num:num;
14    }
15    public static void main(String args[]){
16        int x=-123;
17        long y=-1234;
18        float f=-12.22f;
19        double d=-123.678;
20
21        x=abs(x);
22        y=abs(y);
23        f=abs(f);
24        d=abs(d);
25
26        System.out.println(x); //123
27        System.out.println(y); //1234
28        System.out.println(f); //12.22
29        System.out.println(d); //123.678
30    }
31 }
32
```

Below the editor, the command prompt shows the compilation command: `javac "Example.java" (in directory: D:\Telegram Desktop)`. The compiler output indicates: `Compilation finished successfully.`

An output window titled "C:\Windows\S..." is open, displaying the program's output:

```
123
1234
12.22
123.678

-----
(program exited with code: 0)
Press any key to continue . . .
```

Q42 – case i

Example.java - D:\Telegram Desktop - Geany

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Documents

Exam....java

```
1 class Example{
2     public static void myMethod() {
3         System.out.println("myMethod()");
4     }
5     public static void myMethod(){ //Illegal
6         System.out.println("myMethod()");
7     }
8     public static void myMethod(int i){ //Legal
9         System.out.println("myMethod(int)");
10    }
11    public static void main(String args[]){
12        myMethod();
13        myMethod(10);
14    }
15 }
16
```

Status `javac "Example.java" (in directory: D:\Telegram Desktop)`

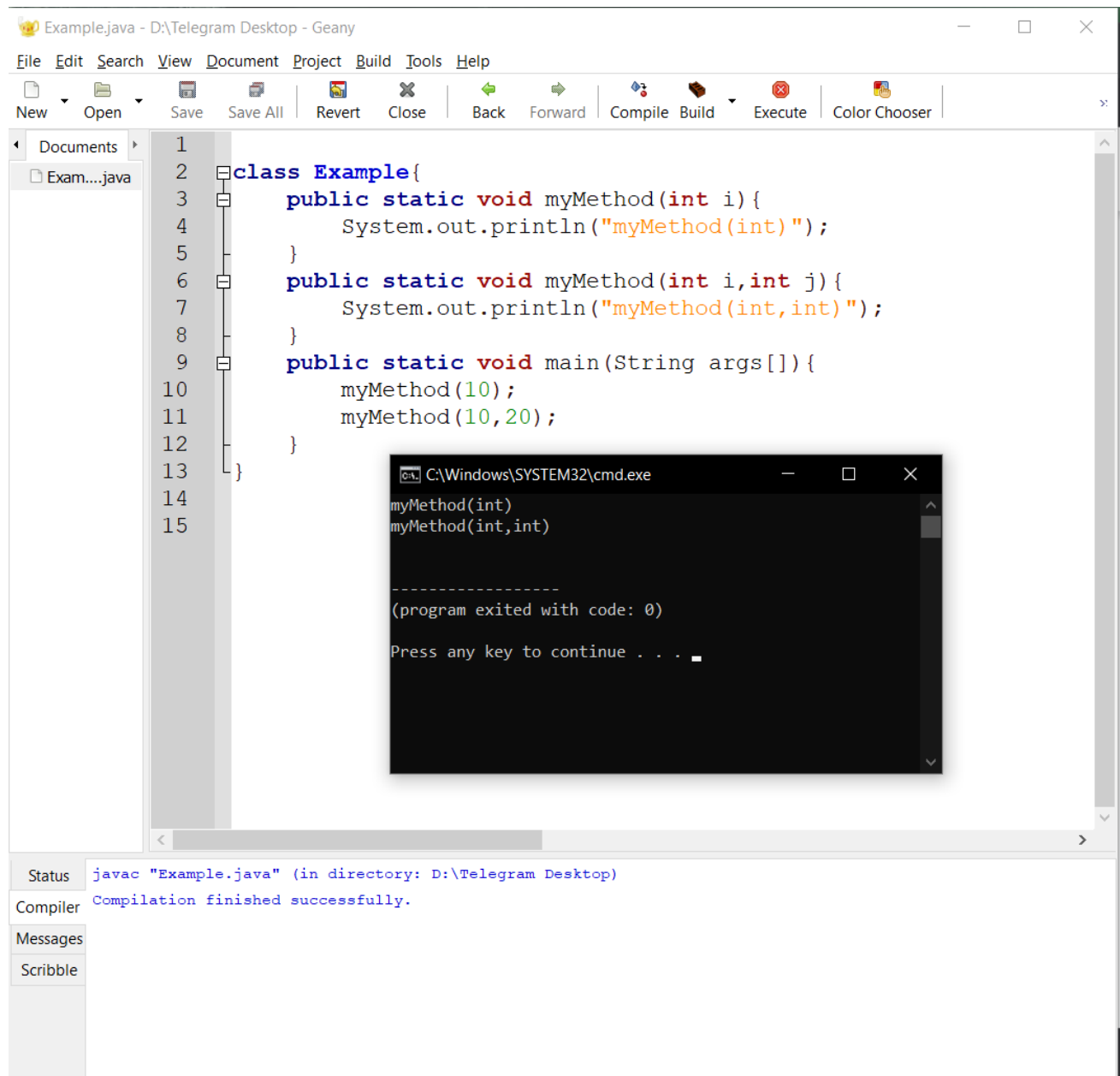
Compiler `Example.java:5: error: method myMethod() is already defined in class Example`

Messages `public static void myMethod(){ //Illegal`

Scribble `1 error`

`Compilation failed.`

Q43 – case ii



Q44 – case iii

The screenshot shows the Geany IDE interface. The main editor window displays a Java file named `Example.java` with the following code:

```
1
2 class Example{
3     public static void myMethod(int i){
4         System.out.println("myMethod(int)");
5     }
6     public static void myMethod(double i){
7         System.out.println("myMethod(double)");
8     }
9     public static void main(String args[]){
10        myMethod(10);
11        myMethod(1.0);
12    }
13
14
15
16
17
18
19
```

A terminal window titled `C:\Windows\SYSTEM32\cmd.exe` is open, showing the output of the program:

```
myMethod(int)
myMethod(double)

-----
(program exited with code: 0)
Press any key to continue . . .
```

The bottom status bar of the IDE shows the following information:

- Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`
- Compiler: `Compilation finished successfully.`
- Messages: (empty)
- Scribble: (empty)

Q45 – case iv

The screenshot displays the Geany IDE interface. The main editor window shows a Java file named `Example.java` with the following code:

```
1 class Example{
2     public static void myMethod(int i,double j){
3         System.out.println("myMethod(int,double)");
4     }
5     public static void myMethod(double i,int j){ //Legal
6         System.out.println("myMethod(double,int)");
7     }
8     public static void main(String args[]){
9         myMethod(10,1.0);
10        myMethod(1.0,10);
11    }
12 }
13
14
```

A terminal window titled `C:\Windows\SYSTEM32\cmd.exe` is overlaid on the code, showing the output of the program:

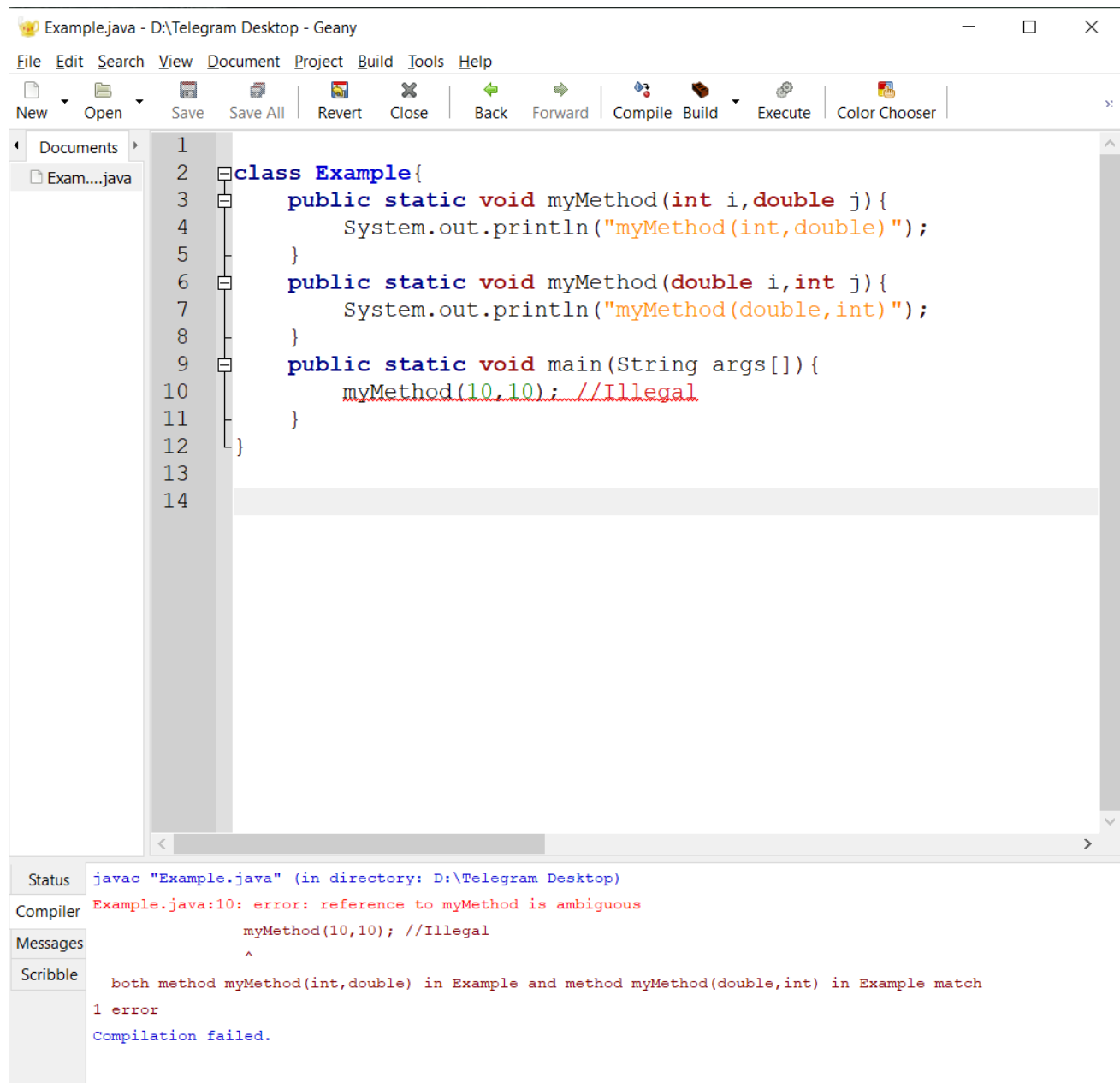
```
myMethod(int,double)
myMethod(double,int)

-----
(program exited with code: 0)
Press any key to continue . . .
```

The bottom status bar of the IDE shows the following information:

- Status: `javac "Example.java" (in directory: D:\Telegram Desktop)`
- Compiler: `Compilation finished successfully.`
- Messages: (empty)
- Scribble: (empty)

Q46 – case v



Example.java - D:\Telegram Desktop - Geany

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Documents

Exam....java

```
1
2 class Example{
3     public static void myMethod(int i, double j){
4         System.out.println("myMethod(int, double)");
5     }
6     public static void myMethod(double i, int j){
7         System.out.println("myMethod(double, int)");
8     }
9     public static void main(String args[]){
10        myMethod(10, 10); //Illegal
11    }
12 }
13
14
```

Status javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler Example.java:10: error: reference to myMethod is ambiguous

Messages myMethod(10,10); //Illegal
^

Scribble both method myMethod(int, double) in Example and method myMethod(double, int) in Example match

1 error

Compilation failed.

Q47 – case vi

Example.java - D:\Telegram Desktop - Geany

File Edit Search View Document Project Build Tools Help

New Open Save Save All Revert Close Back Forward Compile Build Execute Color Chooser

Documents

Exam....java

```
1
2 class Example{
3     public static void myMethod(int code) {
4         System.out.println("myMethod(int-code)");
5     }
6     public static void myMethod(int id){ //Illegal
7         System.out.println("myMethod(int-id)");
8     }
9     public static void main(String args[]) {
10
11     }
12 }
13
14
```

Status javac "Example.java" (in directory: D:\Telegram Desktop)

Compiler Example.java:6: error: method myMethod(int) is already defined in class Example

Messages public static void myMethod(int id){ //Illegal

Scribble ^

1 error

Compilation failed.

Q48 – case vii

The screenshot shows the Geany IDE with a file named 'Example.java' open. The code is as follows:

```
1
2 class Example{
3     public static boolean myMethod() {
4         System.out.println("myMethod(int-code)");
5         return true;
6     }
7     public static double myMethod(){ //Illegal
8         System.out.println("myMethod(int-id)");
9         return 1.22;
10    }
11    public static void main(String args[]){
12
13    }
14 }
15
```

The IDE's status bar at the bottom shows the following information:

- Status:** javac "Example.java" (in directory: D:\Telegram Desktop)
- Compiler:** Example.java:7: error: method myMethod() is already defined in class Example
- Messages:** public static double myMethod(){ //Illegal
- Scribble:** 1 error
- Compilation:** Compilation failed.

