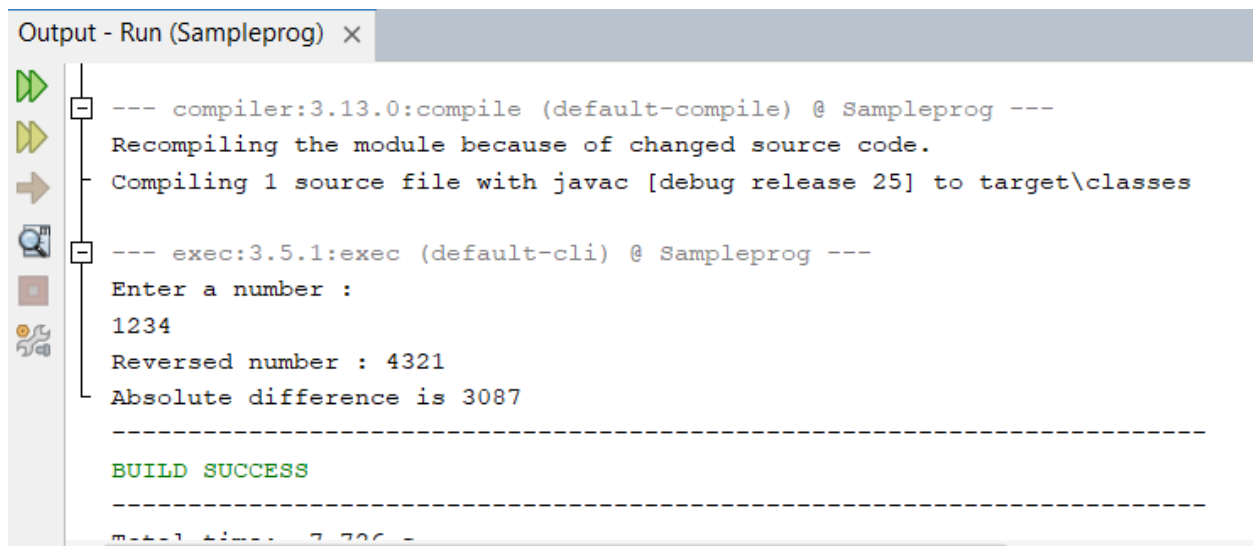


PROGRAM 1:

```
import java.util.*;
class Difference {
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
System.out.println("Enter a number :"); int
num = sc.nextInt();
int rev = 0,dup = num;
while(dup > 0){
int d = dup % 10;
rev = rev*10 + d;
dup = dup/10; }
int dif = Math.abs(num - rev);
System.out.println("Reversed number : "+rev);
System.out.println("Absolute difference is " +dif);
}
}
```

OUTPUT:



```
Output - Run (Sampleprog) x
--- compiler:3.13.0:compile (default-compile) @ Sampleprog ---
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\classes
--- exec:3.5.1:exec (default-cli) @ Sampleprog ---
Enter a number :
1234
Reversed number : 4321
Absolute difference is 3087
-----
BUILD SUCCESS
-----
Total time: 7.726 s
```

PROGRAM 2:

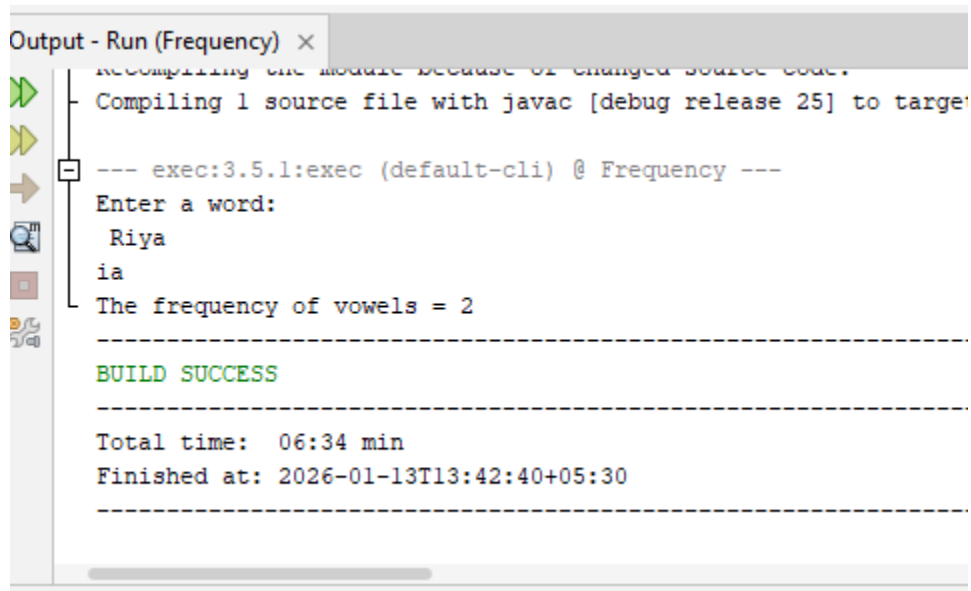
```
import java.util.*;
class Frequency{
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
```

```

System.out.println("Enter a word:");
String s = sc.next();
int l = s.length();
int c = 0;
for(int i = 0; i < l; i++){
    char ch = s.charAt(i);
    if("AEIOUaeiou".indexOf(ch) != -1){
        System.out.print(ch);
        c = c+1;
    }
}
System.out.println();
System.out.println("The frequency of vowels = "+ c);
}
}

```

OUTPUT:



```

Output - Run (Frequency) ×
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target
--- exec:3.5.1:exec (default-cli) @ Frequency ---
Enter a word:
    Riya
    ia
The frequency of vowels = 2

-----
BUILD SUCCESS
-----

Total time: 06:34 min
Finished at: 2026-01-13T13:42:40+05:30
-----

```

PROGRAM 3:

```

import java.util.*;
class Uppercase {
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a word:");
        String s = sc.next();
        s = s.toUpperCase();
        int l = s.length();
    }
}

```

OUTPUT:



```
import java.util.*;

class WordProgram {

    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a sentence:");
        String s = sc.nextLine();
        int u = 0,l = 0,b = 0,w = 1,o = 0; int
        len = s.length();
        for(int i = 0; i < len; i++){
            char ch = s.charAt(i);
            if(Character.isUpperCase(ch)){
                u = u+1;
            }else if(Character.isLowerCase(ch)){
```

```

l = l+1;
}else if(Character.isWhitespace(ch)){
b = b+1;
w = w+1;

}else{
o = o+1;
}
}
System.out.println("Number of Uppercase characters : "+u);
System.out.println("Number of Lowercase characters : "+l);
System.out.println("Number of Blankspace characters : "+b);
System.out.println("Number of words in sentence : "+w);
System.out.println("Number of other characters : "+o);
}
}

```

OUTPUT:

```

Output - Run (WordProgram) x
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\clas
--- exec:3.5.1:exec (default-cli) @ WordProgram ---
Enter a sentence:
Welcome to Java
Number of Uppercase characters : 2
Number of Lowercase characters : 11
Number of Blankspace characters : 3
Number of words in sentence : 4
Number of other characters : 0
-----
BUILD SUCCESS
-----
Total time: 31.132 s

```

PROGRAM 5:

```

import java.util.*;
class Palindrome {
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
System.out.println("Enter a word :");

String s = sc.next();
char ch ;

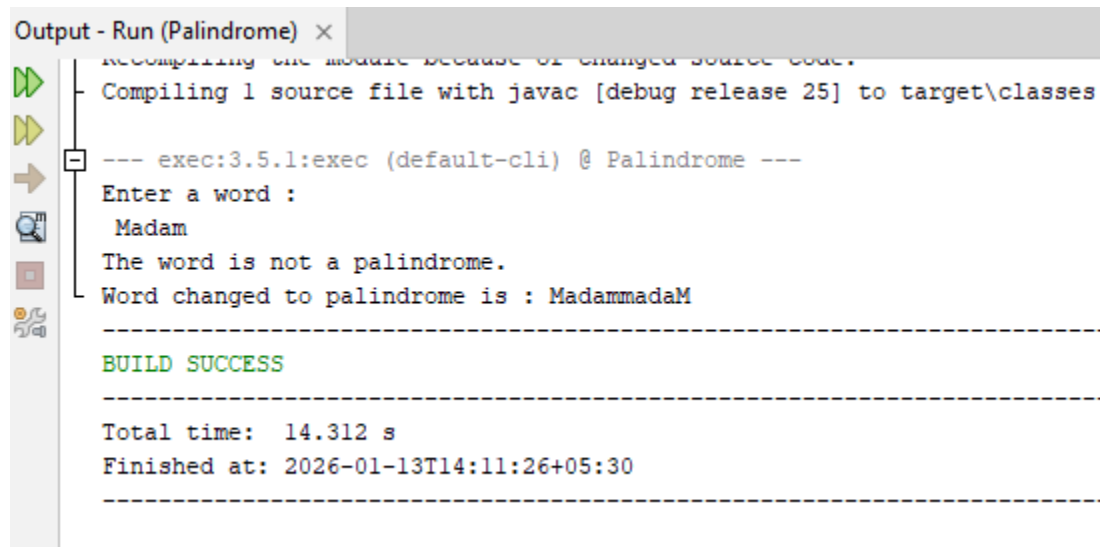
```

```

String s1 = "";
int l = s.length();
for(int i = 0; i < l; i++){
    ch = s.charAt(i);
    s1 = ch + s1;
}
if(s.equals(s1)){
    System.out.println("The word is a palindrome.");
}else{
    System.out.println("The word is not a palindrome.");
    String s2 = s + s1;
    System.out.println("Word changed to palindrome is : "+ s2);
}
}
}
}

```

OUTPUT:



```

Output - Run (Palindrome) x
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\classes
--- exec:3.5.1:exec (default-cli) @ Palindrome ---
Enter a word :
    Madam
The word is not a palindrome.
Word changed to palindrome is : MadammadaM

-----
BUILD SUCCESS
-----

Total time: 14.312 s
Finished at: 2026-01-13T14:11:26+05:30
-----

```

PROGRAM 6 :

```

import java.util.Scanner;
public class Word
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter a word:");
        String word = in.nextLine();
        int len = word.length();
        for (int i = 0; i < len; i++) {
            for (int j = i; j < len; j++) {

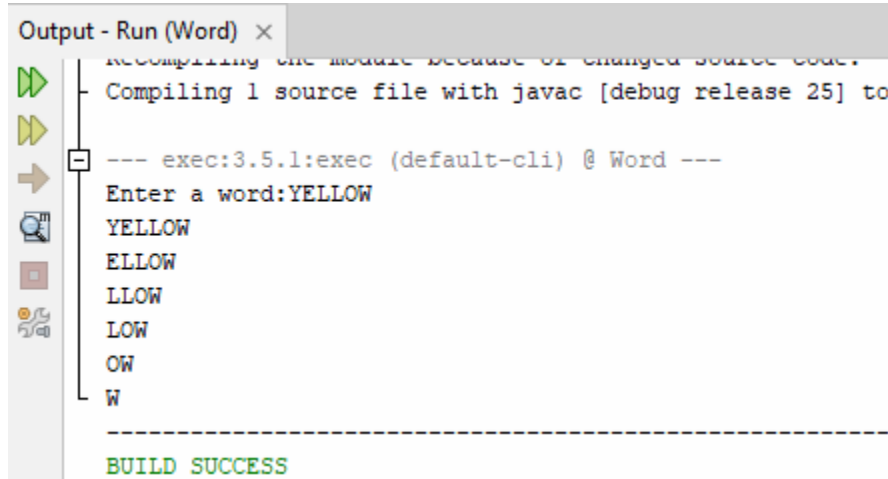
```

```

char ch = word.charAt(j);
System.out.print(ch); }
System.out.println();
}
}
}

```

OUTPUT:



```

Output - Run (Word) x
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to
--- exec:3.5.1:exec (default-cli) @ Word ---
Enter a word:YELLOW
YELLOW
ELLOW
LLOW
LOW
OW
W
-----
BUILD SUCCESS

```

PROGRAM 7:

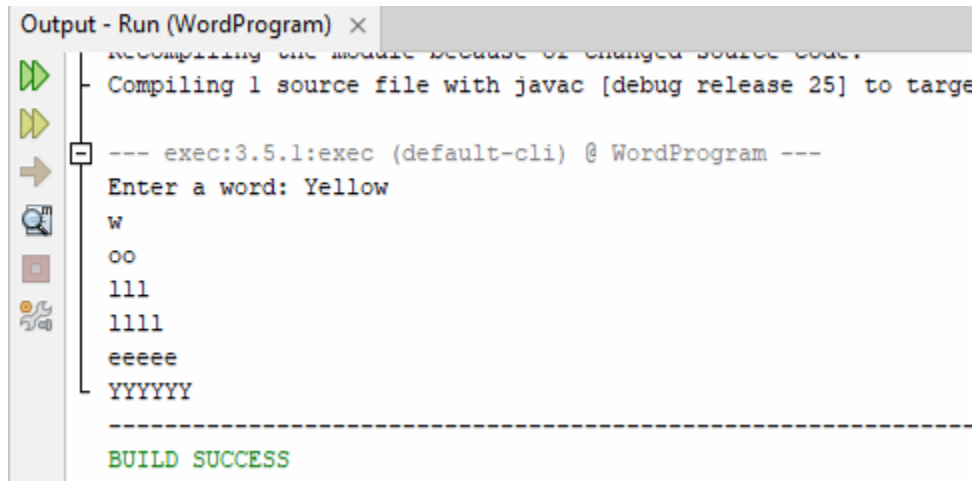
```

import java.util.Scanner;

public class WordProgram
{
    public static void main(String args[])
    {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter a word: ");
        String word = in.nextLine();
        int len = word.length();
        for (int i = len - 1; i >= 0; i--)
        {
            for (int j = len - 1; j >= i; j--)
            {
                char ch = word.charAt(i);
                System.out.print(ch);
            }
            System.out.println();
        }
    }
}

```

OUTPUT:

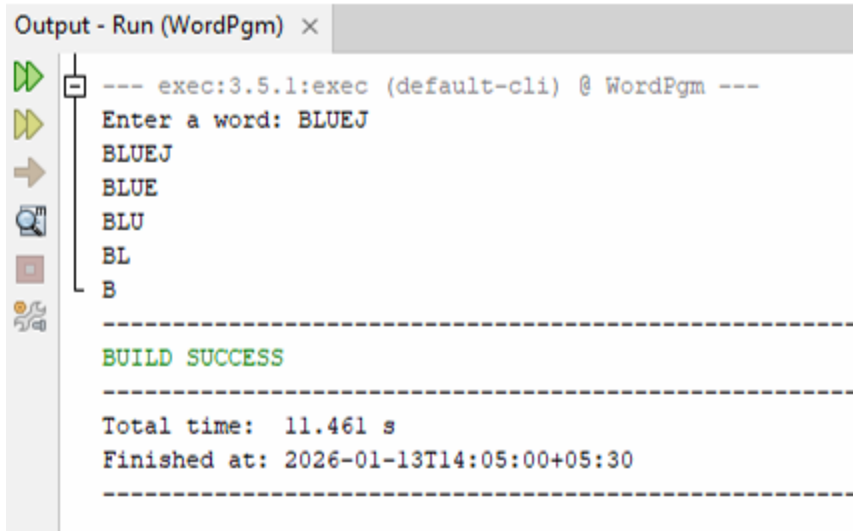


```
Output - Run (WordProgram) x
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target
--- exec:3.5.1:exec (default-cli) @ WordProgram ---
Enter a word: Yellow
W
oo
lll
llll
eeee
YYYYYY
-----
BUILD SUCCESS
```

PROGRAM 8:

```
import java.util.Scanner;
public class WordPgm {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter a word: ");
        String word = in.nextLine();
        int len = word.length();
        for (int i = len; i > 0; i--) {
            for (int j = 0; j < i; j++) {
                System.out.print(word.charAt(j));
            }
            System.out.println();
        }
    }
}
```

OUTPUT:



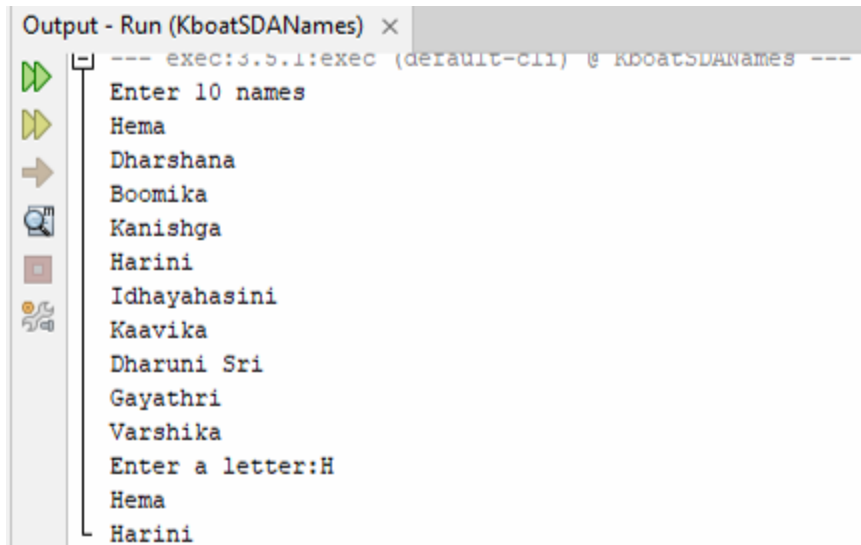
```
Output - Run (WordPgm) ×
--- exec:3.5.1:exec (default-cli) @ WordPgm ---
Enter a word: BLUEJ
BLUEJ
BLUE
BLU
BL
B
-----
BUILD SUCCESS
-----
Total time: 11.461 s
Finished at: 2026-01-13T14:05:00+05:30
-----
```

PROGRAM 9:

```
import java.util.Scanner;
public class KboatSDANames
{

    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        String names[] = new String[10];
        System.out.println("Enter 10 names");
        for (int i = 0; i<names.length; i++) {
            names[i] = in.nextLine();
        }
        System.out.print("Enter a letter:");
        char ch = in.next().charAt(0);
        ch = Character.toUpperCase(ch);
        for (int i = 0; i<names.length; i++) {
            if (Character.toUpperCase(names[i].charAt(0)) == ch) {
                System.out.println(names[i]);
            }
        }
    }
}
```

OUTPUT:

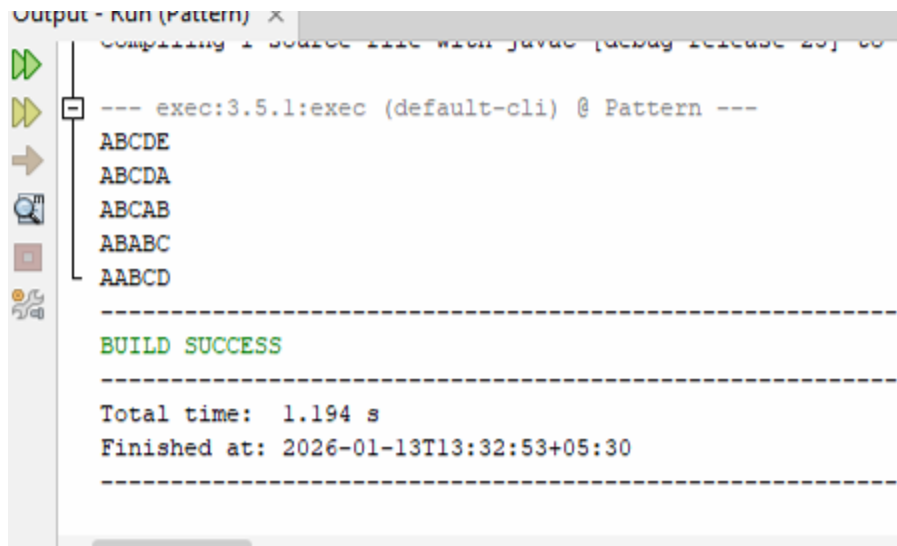


```
Output - Run (KboatSDANames) ×
--- exec:3.5.1:exec (default-cil) @ KboatSDANames ---
Enter 10 names
Hema
Dharshana
Boomika
Kanishga
Harini
Idhayahasini
Kaavika
Dharuni Sri
Gayathri
Varshika
Enter a letter:H
Hema
Harini
```

PROGRAM 10:

```
public class Pattern
{
    public static void main(String args[]) {
        String word = "ABCDE";
        int len = word.length();
        for (int i = 0; i<len; i++) {
            for (int j = 0; j<len - i; j++) {
                System.out.print(word.charAt(j));
            }
            for (int k = 0; k<i; k++) {
                System.out.print(word.charAt(k));
            }
            System.out.println();
        }
    }
}
```

OUTPUT :

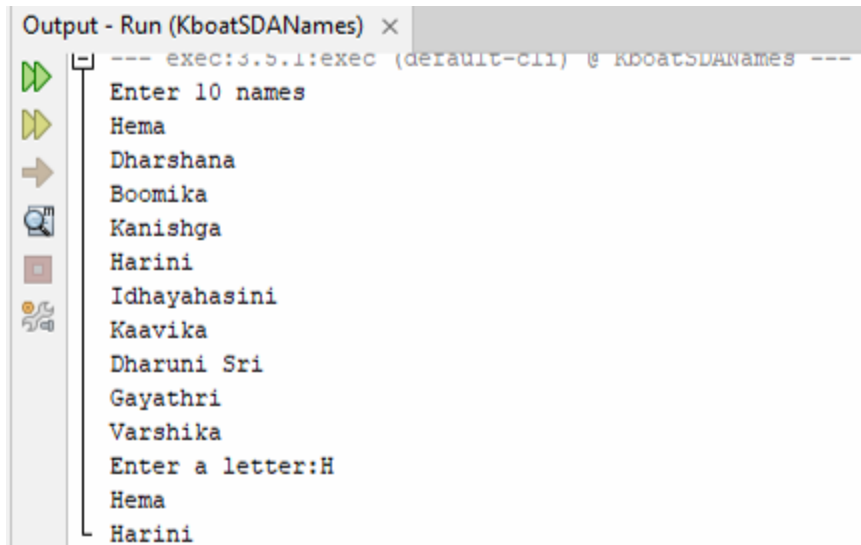
A screenshot of an IDE's output window. The window title is "Output - Run (Pattern)". The output text is as follows:

```
--- exec:3.5.1:exec (default-cli) @ Pattern ---
ABCDE
ABCD A
ABCAB
ABABC
AABCD
-----
BUILD SUCCESS
-----
Total time: 1.194 s
Finished at: 2026-01-13T13:32:53+05:30
-----
```

PROGRAM 11:

```
import java.util.Scanner;
public class KboatSDANames
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        String names[] = new String[10];
        System.out.println("Enter 10 names");
        for (int i = 0; i < names.length; i++) {
            names[i] = in.nextLine();
        }
        System.out.print("Enter a letter:");
        char ch = in.next().charAt(0);
        ch = Character.toUpperCase(ch);
        for (int i = 0; i < names.length; i++) {
            if (Character.toUpperCase(names[i].charAt(0)) == ch) {
                System.out.println(names[i]);
            }
        }
    }
}
```

OUTPUT:

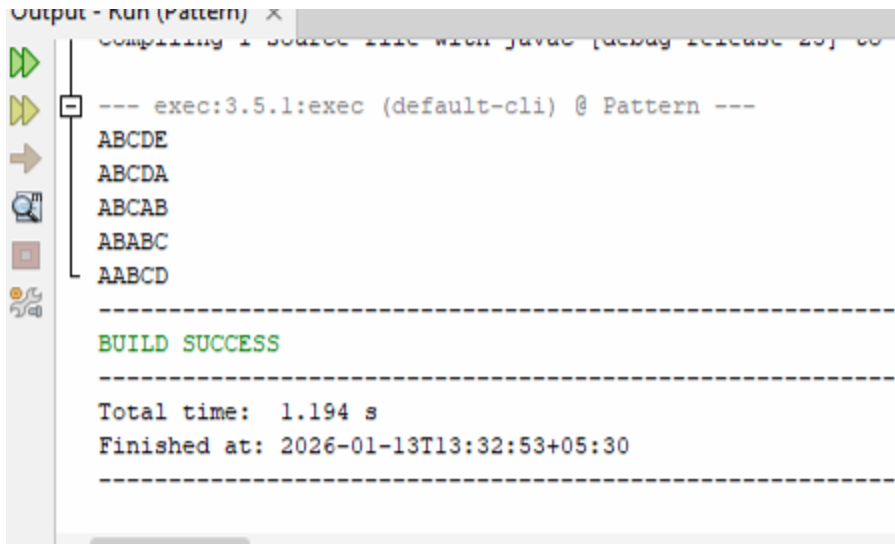


```
Output - Run (KboatSDANames) ×
--- exec:3.5.1:exec (default-cii) @ KboatSDANames ---
Enter 10 names
Hema
Dharshana
Boomika
Kanishga
Harini
Idhayahasini
Kaavika
Dharuni Sri
Gayathri
Varshika
Enter a letter:H
Hema
Harini
```

PROGRAM 12:

```
public class Pattern
public class Pattern{
public static void main(String args[]) {
String word = "ABCDE";
int len = word.length();
for (int i = 0; i<len; i++) {
for (int j = 0; j<len - i; j++) {
System.out.print(word.charAt(j));
}
for (int k = 0; k<i; k++) {
System.out.print(word.charAt(k));
}
System.out.println();
}
}
}
```

OUTPUT :

A screenshot of an IDE's output window. The window title is "Output - Run (Pattern)". It shows the output of a Java program. The output starts with a separator line "--- exec:3.5.1:exec (default-cli) @ Pattern ---". Below this, five permutations of the string "ABCDE" are listed: "ABCDE", "ABCD A", "ABCAB", "ABABC", and "AABCD". Each permutation is preceded by a small icon (a green arrow, a yellow arrow, a blue arrow, a red arrow, and an orange arrow respectively). After the permutations, there is a dashed line, followed by the text "BUILD SUCCESS" in green, another dashed line, and then the execution statistics: "Total time: 1.194 s" and "Finished at: 2026-01-13T13:32:53+05:30".

```
Output - Run (Pattern) x
--- exec:3.5.1:exec (default-cli) @ Pattern ---
ABCDE
ABCD A
ABCAB
ABABC
AABCD
-----
BUILD SUCCESS
-----
Total time: 1.194 s
Finished at: 2026-01-13T13:32:53+05:30
-----
```

PROGRAM 13:

```
import java.util.*;
public class Main1 {
    public static void main(String[] args) {
        HashMap<Integer, String> hashMap = new HashMap<>();
        hashMap.put(1, "Red");
        hashMap.put(2, "Green");
        hashMap.put(3, "Blue");
        System.out.println("HashMap Elements: ");
        for (Integer key : hashMap.keySet()) {
            System.out.println("Key: " + key + ", Value: " + hashMap.get(key));
        }
        Hashtable<Integer, String> hashtable = new Hashtable<>();
        hashtable.put(1, "Aji");
        hashtable.put(2, "Azeen");
        hashtable.put(3, "Banu");
        System.out.println("\nHashtable Elements:");

        for (Integer key : hashtable.keySet()) {
            System.out.println("Key: " + key + ", Value: " + hashtable.get(key));
        }
    }
}
```

OUTPUT:

```
com.mycompany.main1.Main1 > main >
Output - Run (Main1) x Check Regular Expression
--- exec:3.5.1:exec (default-cli) @ Main1 ---
HashMap Elements:
Key: 1, Value: Red
Key: 2, Value: Green
Key: 3, Value: Blue

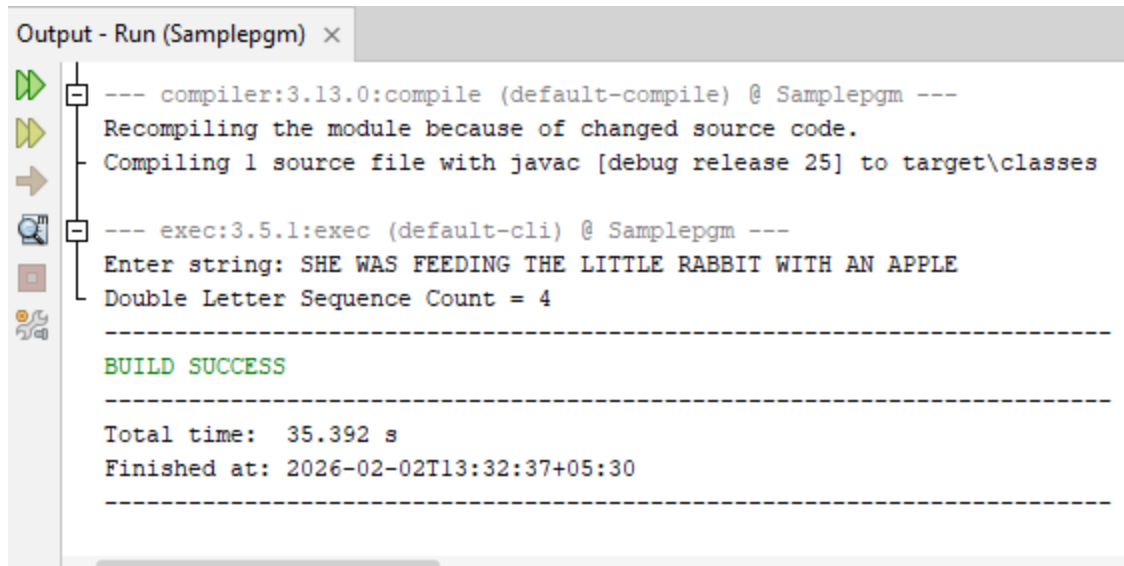
Hashtable Elements:
Key: 3, Value: Banu
Key: 2, Value: Azeen
Key: 1, Value: Aji
```

PROGRAM 14:

```
import java.util.Scanner;
public class Samplepgm {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter string: ");
        String s = in.nextLine();
        String str = s.toUpperCase(); int
        count = 0;
        int len = str.length();
        for (int i = 0; i < len - 1; i++) {
            if (str.charAt(i) == str.charAt(i + 1))
                count++;
        }

        System.out.println("Double Letter Sequence Count = " + count);
    }
}
```

OUTPUT:



```
Output - Run (Samplepgm) ×
--- compiler:3.13.0:compile (default-compile) @ Samplepgm ---
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\classes

--- exec:3.5.1:exec (default-cli) @ Samplepgm ---
Enter string: SHE WAS FEEDING THE LITTLE RABBIT WITH AN APPLE
Double Letter Sequence Count = 4

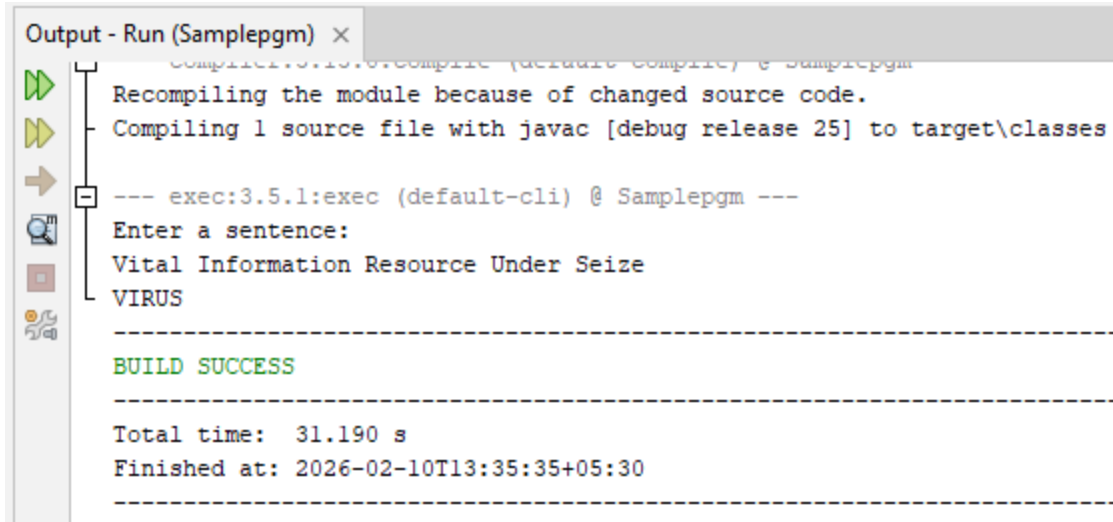
-----
BUILD SUCCESS
-----

Total time: 35.392 s
Finished at: 2026-02-02T13:32:37+05:30
-----
```

PROGRAM 15:

```
import java.util.Scanner;
public class Samplepgm
{
    public static void main(String args[]) { Scanner
in = new Scanner(System.in);
    System.out.println("Enter a sentence:"); String
str = in.nextLine();
    String word = "" + str.charAt(0); int
len = str.length();
    for (int i = 0; i < len; i++) {
        char ch = str.charAt(i);
        if (ch == ' ')
            word += str.charAt(i + 1);
    }
    System.out.println(word);
}
```

OUTPUT:

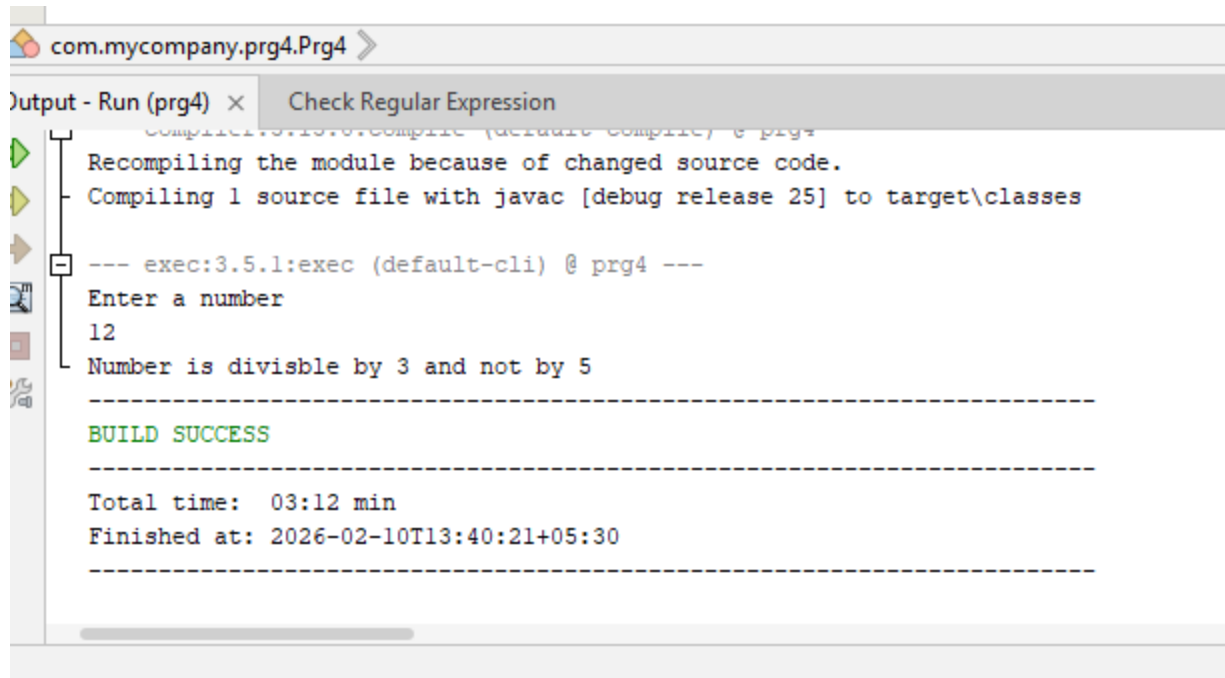


```
Output - Run (Samplepgm) X
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\classes
--- exec:3.5.1:exec (default-cli) @ Samplepgm ---
Enter a sentence:
Vital Information Resource Under Seize
VIRUS
-----
BUILD SUCCESS
-----
Total time: 31.190 s
Finished at: 2026-02-10T13:35:35+05:30
-----
```

PROGRAM 16:

```
import java.util.*;
class Prg4{
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
System.out.println("Enter a number"); int
num = sc.nextInt();
if(num % 3 == 0 && num % 5 == 0){
System.out.println("Number is divisible by both 3 and 5");
}else
if(num % 3 == 0 && num % 5 != 0 ){
System.out.println("Number is divisible by 3 and not by 5"); }else
if(num % 3 != 0 && num % 5 == 0 ){
System.out.println("Number is divisible by 5 and not by 3");
}else{
System.out.println("The number is neither divisible by 5 nor by 3");
}
}
}
```

OUTPUT:



```
com.mycompany.prg4.Prg4 >
Output - Run (prg4) x Check Regular Expression
--- exec:3.5.1:exec (default-cli) @ prg4 ---
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\classes
Enter a number
12
Number is divisble by 3 and not by 5
-----
BUILD SUCCESS
-----
Total time: 03:12 min
Finished at: 2026-02-10T13:40:21+05:30
-----
```

PROGRAM 17:

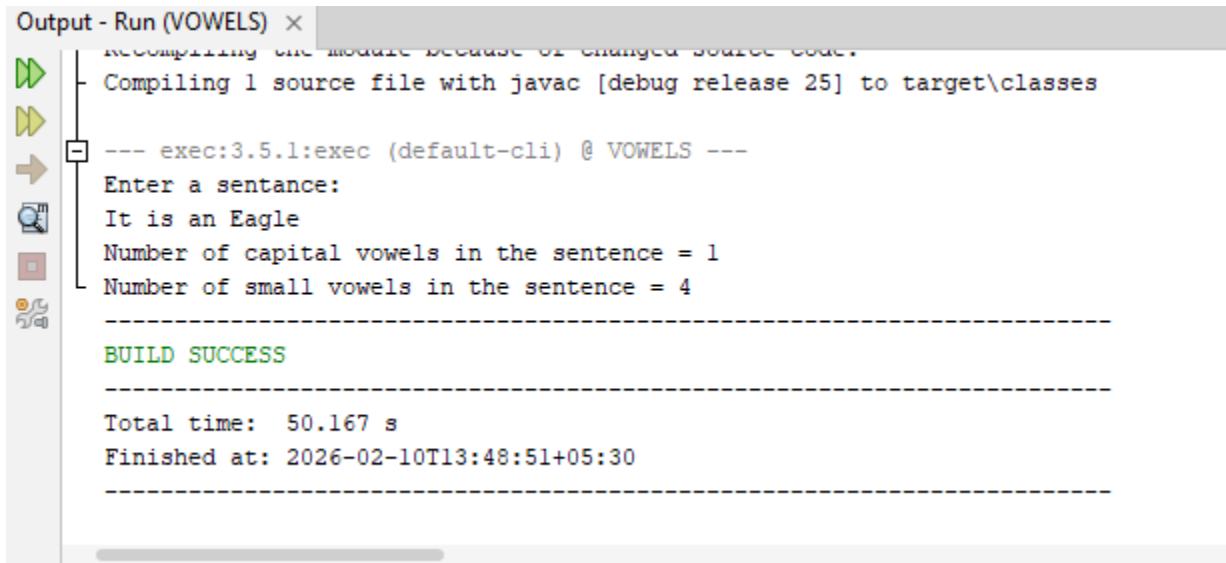
```
import java.util.*;
public class VOWELS {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a sentence: ");
        String s = sc.nextLine();
        int c =0,sm=0;
        for(int i =1; i<s.length(); i++){
            char ch = s.charAt(i);
            if("AEIOU".indexOf(ch) != -1){
                c++;
            }else if("aeiou".indexOf(ch) != -1){
                sm++;
            }
        }
        System.out.println("Number of capital vowels in the sentence = "+c);
        System.out.println("Number of small vowels in the sentence = "+sm);
    }
}
```



```
}
```

OUTPUT:

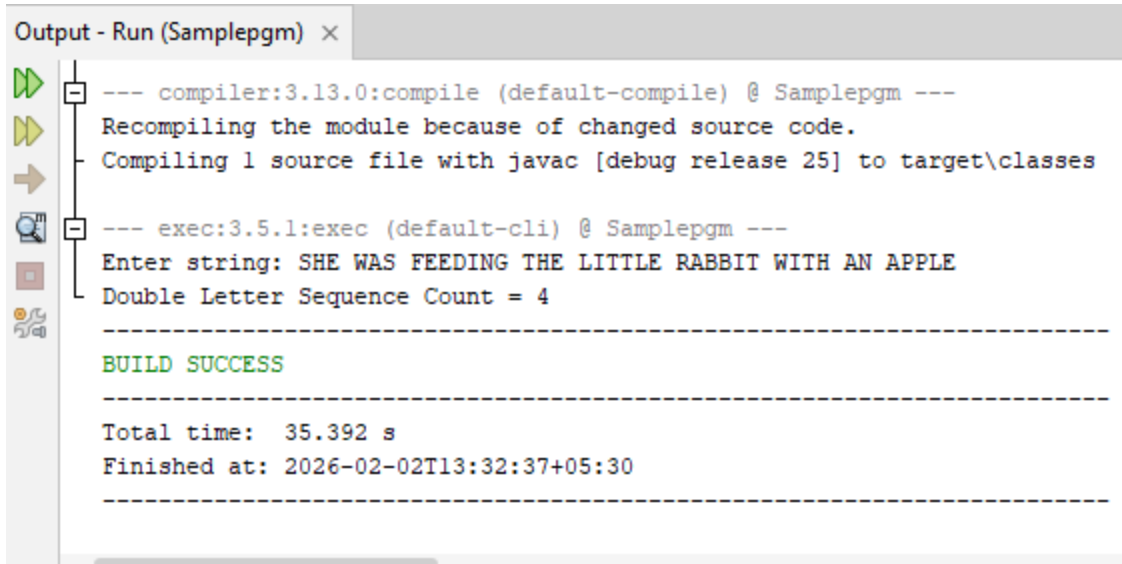


```
Output - Run (VOWELS) x
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\classes
--- exec:3.5.1:exec (default-cli) @ VOWELS ---
Enter a sentence:
It is an Eagle
Number of capital vowels in the sentence = 1
Number of small vowels in the sentence = 4
-----
BUILD SUCCESS
-----
Total time: 50.167 s
Finished at: 2026-02-10T13:48:51+05:30
-----
```

PROGRAM 18:

```
import java.util.Scanner;
public class Samplepgm {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter string: ");
        String s = in.nextLine();
        String str = s.toUpperCase(); int
        count = 0;
        int len = str.length();
        for (int i = 0; i < len - 1; i++) {
            if (str.charAt(i) == str.charAt(i + 1))
                count++;
        }
        System.out.println("Double Letter Sequence Count = " + count);
    }
}
```

OUTPUT:



```
Output - Run (Samplepgm) x
--- compiler:3.13.0:compile (default-compile) @ Samplepgm ---
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\classes

--- exec:3.5.1:exec (default-cli) @ Samplepgm ---
Enter string: SHE WAS FEEDING THE LITTLE RABBIT WITH AN APPLE
Double Letter Sequence Count = 4

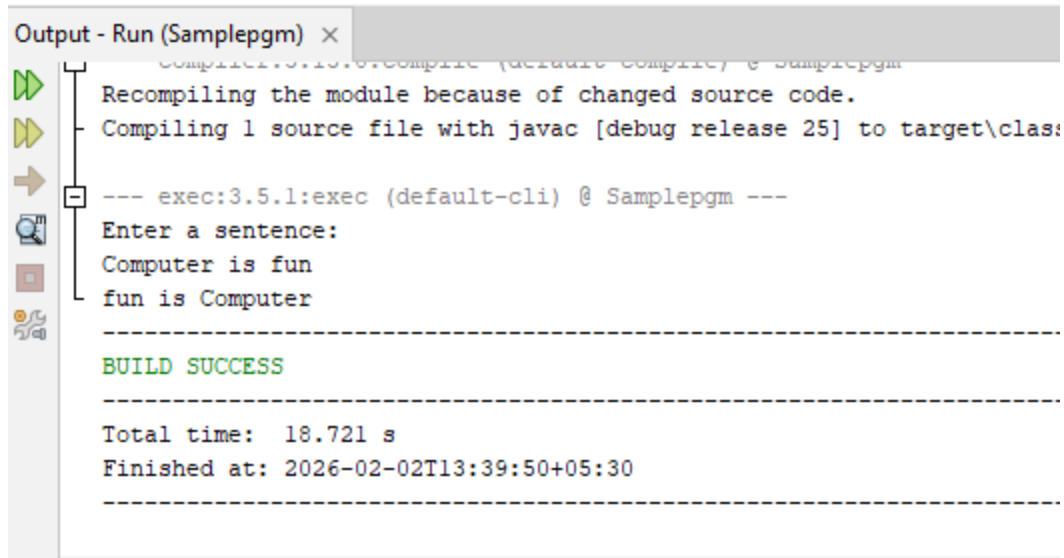
-----
BUILD SUCCESS
-----

Total time: 35.392 s
Finished at: 2026-02-02T13:32:37+05:30
-----
```

PROGRAM 19:

```
import java.util.Scanner;
public class Samplepgm
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter a sentence:");
        String str = in.nextLine();
        str = " " + str;
        String word = "";
        int len = str.length();
        for (int i = len - 1; i >= 0; i--) {
            char ch = str.charAt(i);
            if (ch == ' ') {
                System.out.print(word + " ");
                word = "";
            }
            else {
                word = ch + word;
            }
        }
    }
}
```

OUTPUT:

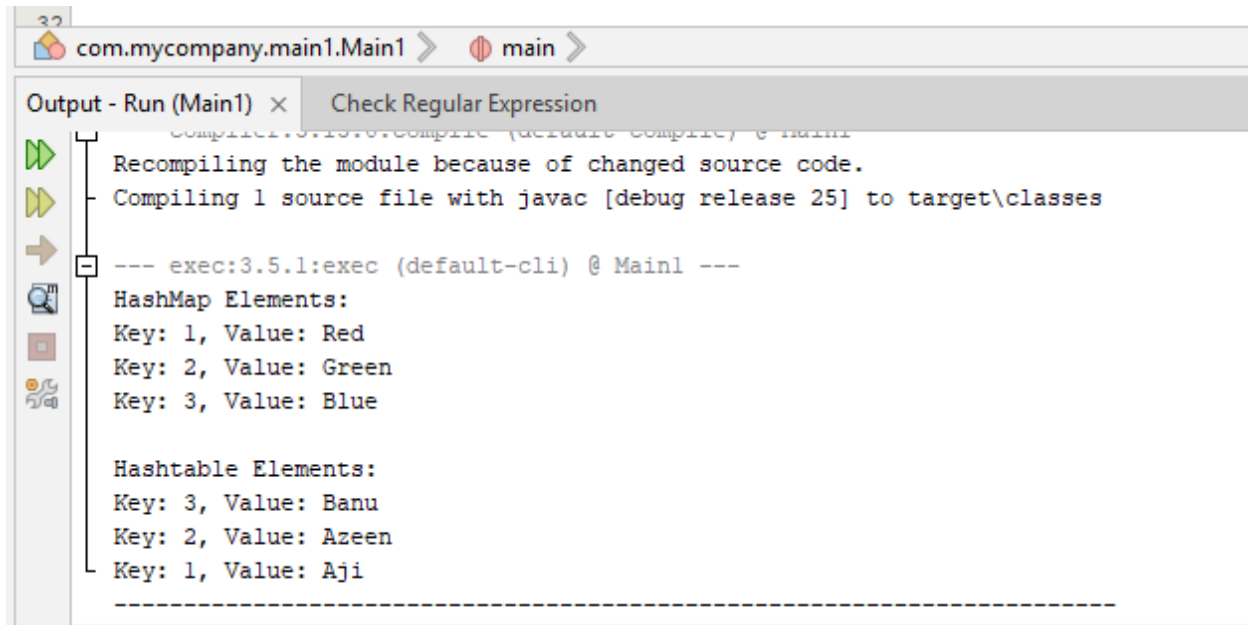


```
Output - Run (Samplepgm) ×
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target\clas:
--- exec:3.5.1:exec (default-cli) @ Samplepgm ---
Enter a sentence:
Computer is fun
fun is Computer
-----
BUILD SUCCESS
-----
Total time: 18.721 s
Finished at: 2026-02-02T13:39:50+05:30
-----
```

PROGRAM 20:

```
import java.util.*;
public class Main1 {
    public static void main(String[] args) {
        HashMap<Integer, String> hashMap = new HashMap<>();
        hashMap.put(1, "Red");
        hashMap.put(2, "Green");
        hashMap.put(3, "Blue");
        System.out.println("HashMap Elements: ");
        for (Integer key : hashMap.keySet()) {
            System.out.println("Key: " + key + ", Value: " + hashMap.get(key));
        }
        Hashtable<Integer, String> hashtable = new Hashtable<>();
        hashtable.put(1, "Aji");
        hashtable.put(2, "Azeen");
        hashtable.put(3, "Banu");
        System.out.println("\nHashtable Elements:");
        for (Integer key : hashtable.keySet()) {
            System.out.println("Key: " + key + ", Value: " + hashtable.get(key));
        }
    }
}
```

OUTPUT:



PROGRAM 21:

```

import java.util.Scanner;
public class KboatSDANames
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        String names[] = new String[10];
        System.out.println("Enter 10 names");
        for (int i = 0; i < names.length; i++) {
            names[i] = in.nextLine();
        }
        System.out.print("Enter a letter:");
        char ch = in.next().charAt(0);
        ch = Character.toUpperCase(ch);
        for (int i = 0; i < names.length; i++) {
            if (Character.toUpperCase(names[i].charAt(0)) == ch) {
                System.out.println(names[i]);
            }
        }
    }
}

```

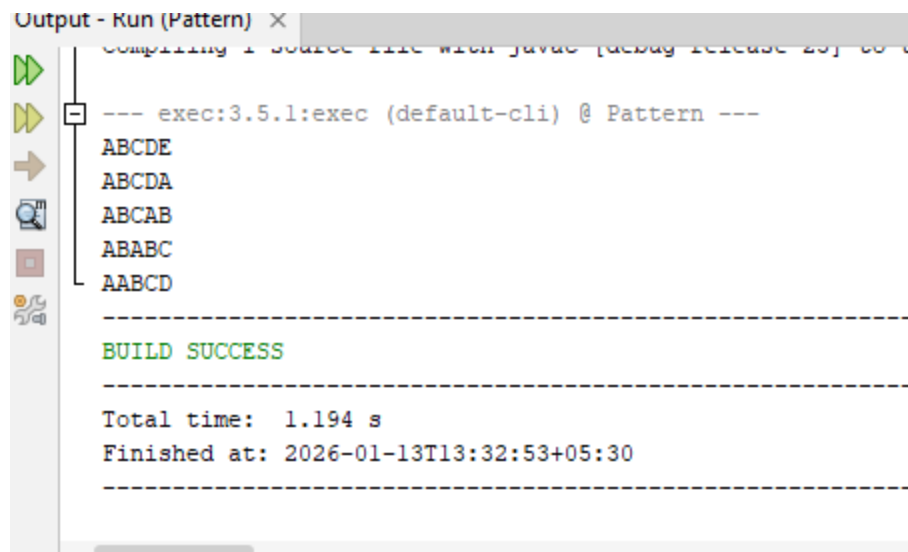
OUTPUT:

```
Output - Run (KboatSDANames) x
--- exec:3.5.1:exec (default-cil) @ KboatSDANames ---
Enter 10 names
Hema
Dharshana
Boomika
Kanishga
Harini
Idhayahasini
Kaavika
Dharuni Sri
Gayathri
Varshika
Enter a letter:H
Hema
Harini
```

PROGRAM 22:

```
public class Pattern
{
    public static void main(String args[]) {
        String word = "ABCDE";
        int len = word.length();
        for (int i = 0; i<len; i++) {
            for (int j = 0; j<len - i; j++) {
                System.out.print(word.charAt(j));
            }
            for (int k = 0; k<i; k++) {
                System.out.print(word.charAt(k));
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

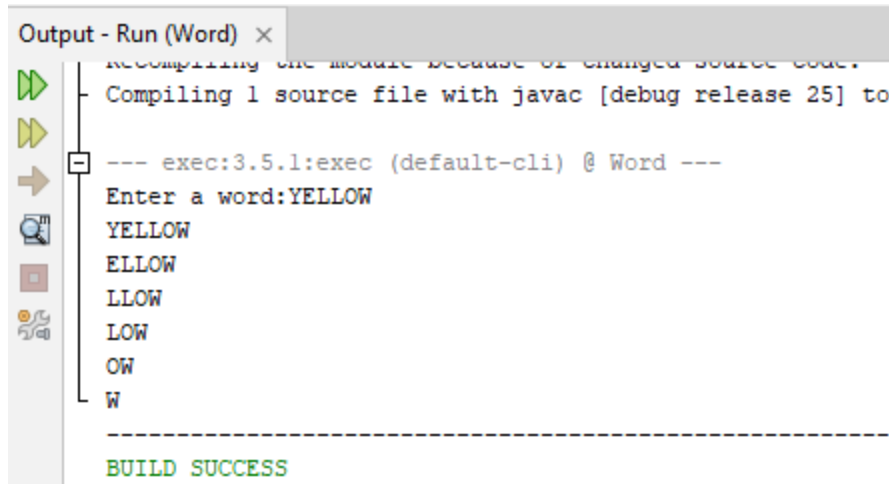


```
Output - Run (Pattern) X
Compiling 1 source file with javac [debug release 20] to ...
--- exec:3.5.1:exec (default-cli) @ Pattern ---
ABCDE
ABCDA
ABCAB
ABABC
AABCD
-----
BUILD SUCCESS
-----
Total time: 1.194 s
Finished at: 2026-01-13T13:32:53+05:30
-----
```

PROGRAM 23:

```
import java.util.Scanner;
public class Word
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter a word:");
        String word = in.nextLine();
        int len = word.length();
        for (int i = 0; i<len; i++) {
            for (int j = i; j<len; j++) {
                char ch = word.charAt(j);
                System.out.print(ch); }
            System.out.println();
        }
    }
}
```

OUTPUT:

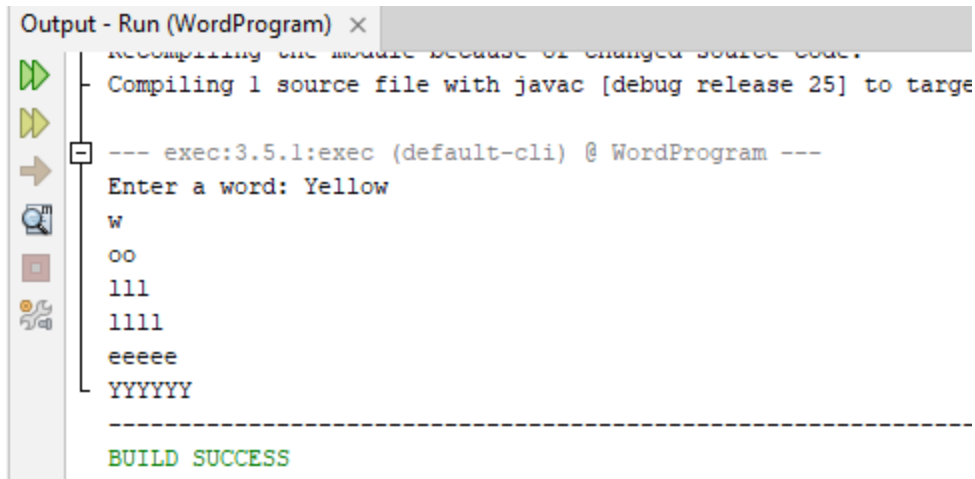


```
Output - Run (Word) x
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to
--- exec:3.5.1:exec (default-cli) @ Word ---
Enter a word:YELLOW
YELLOW
ELLOW
LLOW
LOW
OW
W
-----
BUILD SUCCESS
```

PROGRAM 24:

```
import java.util.Scanner;
public class WordProgram
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter a word: ");
        String word = in.nextLine();
        int len = word.length();
        for (int i = len - 1; i >= 0; i--) {
            for (int j = len - 1; j >= i; j--) {
                char ch = word.charAt(i);
                System.out.print(ch);
            }
            System.out.println();
        }
    }
}
```

OUTPUT:



```
Output - Run (WordProgram) ×
Recompiling the module because of changed source code.
Compiling 1 source file with javac [debug release 25] to target
--- exec:3.5.1:exec (default-cli) @ WordProgram ---
Enter a word: Yellow
w
oo
lll
llll
eeeeee
YYYYYY
-----
BUILD SUCCESS
```

PROGRAM 25:

```
import java.util.Scanner;
public class WordPgm
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter a word: ");
        String word = in.nextLine();
        int len = word.length();

        for (int i = len; i > 0; i--) {
            for (int j = 0; j < i; j++) {
                System.out.print(word.charAt(j));
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

Output - Run (WordPgm) ×

--- exec:3.5.1:exec (default-cli) @ WordPgm ---

Enter a word: BLUEJ

BLUEJ

BLUE

BLU

BL

B

BUILD SUCCESS

Total time: 11.461 s

Finished at: 2026-01-13T14:05:00+05:30
