

Write java program using For, while and do while loop

1. Find the sum of numbers from 1 to 40.
2. Calculate the sum of the first 15 natural numbers.
3. Find the sum of even numbers from 2 to 50.
4. Calculate the sum of the first 20 odd numbers.
5. Find the sum of numbers from 10 to 100.
6. Calculate the sum of multiples of 5 from 5 to 100.
7. Find the sum of squares of numbers from 1 to 25.
8. Calculate the sum of the first 10 prime numbers.
9. Find the sum of all two-digit prime numbers.
10. Calculate the sum of the first 12 Fibonacci numbers.
11. Find the sum of the first 10 square numbers.
12. Calculate the sum of cubes of numbers from 1 to 15.
13. Find the sum of the first 8 triangular numbers.
14. Calculate the sum of multiples of 7 from 14 to 140.
15. Find the sum of numbers from 3 to 33, excluding multiples of 4.
16. Calculate the sum of the first 25 even natural numbers.
17. Find the sum of numbers from 100 to 200.
18. Calculate the sum of multiples of 3 from 9 to 99.
19. Find the sum of squares of even numbers from 2 to 20.
20. Calculate the sum of the first 10 powers of 2 ($2^0 + 2^1 + \dots + 2^9$).
21. Find the sum of numbers from 1 to 50, excluding multiples of 3.
22. Calculate the sum of the first 5 cube numbers ($1^3 + 2^3 + \dots + 5^3$).
23. Find the sum of numbers from 2 to 52, excluding multiples of 6.
24. Calculate the sum of multiples of 4 from 12 to 120.
25. Find the sum of the first 7 square numbers.
26. Calculate the sum of multiples of 8 from 16 to 160.
27. Find the sum of numbers from 1 to 60, excluding multiples of 5.
28. Calculate the sum of the first 6 prime numbers.
29. Find the sum of numbers from 1000 to 2000.
30. Calculate the sum of multiples of 9 from 18 to 180.
31. Find the sum of odd numbers from 1 to 41.
32. Calculate the sum of the first 9 triangular numbers.
33. Find the sum of multiples of 10 from 10 to 1000.
34. Calculate the sum of the first 11 natural numbers.

35. Find the sum of numbers from 1 to 70, excluding multiples of 7.
36. Calculate the sum of multiples of 11 from 11 to 110.
37. Find the sum of numbers from 50 to 150.
38. Calculate the sum of the first 10 Fibonacci numbers.
39. Find the sum of numbers from 1 to 80, excluding multiples of 8.
40. Calculate the sum of multiples of 12 from 12 to 1200.
41. Find the sum of numbers from 2 to 90, excluding multiples of 9.
42. Calculate the sum of the first 13 square numbers.
43. Find the sum of numbers from 10 to 90, excluding multiples of 10.
44. Calculate the sum of multiples of 13 from 13 to 130.
45. Find the sum of numbers from 60 to 160.
46. Calculate the sum of the first 7 powers of 3 ($3^0 + 3^1 + \dots + 3^6$).
47. Find the sum of numbers from 1 to 100, excluding multiples of 11.
48. Calculate the sum of multiples of 14 from 14 to 1400.
49. Find the sum of numbers from 30 to 130, excluding multiples of 12.
50. Calculate the sum of the first 15 triangular numbers.
51. **Find the factorial of a given number.**
52. Check whether a number is a Prime Number.
53. Print all prime numbers between 1 and N.
54. Count the number of prime numbers between 100 and 500.
55. Reverse the digits of a given number.
56. Check whether a number is a Palindrome.
57. Check whether a number is an Armstrong Number.
58. Print all Armstrong numbers from 1 to 1000.
59. Find the sum of digits of a number.
60. Find the product of digits of a number.
61. Find the largest digit in a number.
62. Find the smallest digit in a number.
63. Count the number of digits in a number.
64. Find the frequency of each digit in a number.
65. Check whether a number is a Perfect Number.
66. Print all Perfect Numbers between 1 and 10000.
67. Check whether a number is a Strong Number.
68. Print all Strong Numbers between 1 and 100000.
69. Find the Greatest Common Divisor (GCD) of two numbers using loops.
70. Find the Least Common Multiple (LCM) of two numbers using loops.
71. Generate the Fibonacci series up to N terms.
72. Print Fibonacci numbers less than 1000.
73. Find the first Fibonacci number greater than 10000.
74. Print the multiplication table of a given number.

75. Print multiplication tables from 2 to 20.

76. Display all factors of a given number.

77. Count the number of factors of a number.

78. Find the sum of all factors of a number.

79. Check whether a number is a Harshad (Niven) Number.

80. Check whether a number is a Neon Number.

81. Convert a decimal number into binary without using library functions.

82. Convert a binary number into decimal using loops.

83. Convert decimal to octal.

84. Convert decimal to hexadecimal.

85. Print all binary numbers from 1 to 31.

86. Find the decimal equivalent of a binary number entered as an integer.

87. Find whether a binary number is valid or not.

88. Count the number of 1's in the binary representation of a decimal number.

89. Print the binary representation of numbers from 1 to 50.

90. Reverse a binary number.

91. Print the following pattern:

```
1
12
123
1234
12345
```

92. Print:

```
54321
5432
543
54
5
```

93. Print Floyd's Triangle.

94. Print Pascal's Triangle.

95. Print the following pattern:

```
*
**
***
****
*****
```

96. Print:

```
*****
****
***
**
*
```

97. Print the pyramid:

```

  *
 ***
*****
*****
*****
*****
```

98. Print the diamond pattern.

99. Print the hollow rectangle pattern of stars.

100. Print the hollow pyramid using stars.

Bonus Advanced Questions (Excellent for Class 11 & 12)

101. Check whether a number is an Automorphic Number.

102. Check whether a number is a Duck Number.

103. Check whether a number is a Spy Number.

104. Check whether a number is a Disarium Number.

105. Check whether a number is a Happy Number.

106. Check whether two numbers are Twin Primes.

107. Find all Twin Prime pairs between 1 and 1000.

108. Print all Palindrome Prime Numbers between 1 and 1000.

109. Print all Emirp Numbers between 1 and 1000.

110. Find the smallest prime factor of a number.

111. Print all composite numbers between 1 and N.

112. Find the sum of all prime factors of a number.

113. Check whether a number is a Circular Prime.

114. Generate all Pythagorean Triplets up to 100.

115. Print all numbers whose digit sum is equal to 10.

116. Find the digital root of a number.

117. Check whether a number is divisible by 11 without using the modulus (%) operator.

118. Reverse only the odd digits of a number while keeping even digits in their original positions.

119. Print all numbers between 1 and 1000 whose reverse is also prime.

120. Generate the Collatz sequence for a given number and count the number of steps required to reach 1.

121. Find the Factorial of a Number

Example:

Input:
5

Output:
Factorial = 120

Q.122 Check Whether a Number is Prime

Example:

Input:
29

Output:
29 is a Prime Number.



Q.123 Print All Prime Numbers from 1 to N

Example:

Input:
30

Output:
2 3 5 7 11 13 17 19 23 29

Q.124 Count Prime Numbers Between 100 and 500

Example:

Output:
Total Prime Numbers = 70

Q.125 Reverse the Digits of a Number

Example:

Input:
58329

Output:
92385

Q.126 Check Whether a Number is Palindrome

Example:

Input:
12321

Output:
Palindrome Number

Q.127 Check Whether a Number is an Armstrong Number

Example:

Input:
371

Output:
Armstrong Number

Q.128 Print All Armstrong Numbers Between 1 and 1000

Example:

Output:
1 153 370 371 407

Q.129 Find the Sum of Digits

Example:

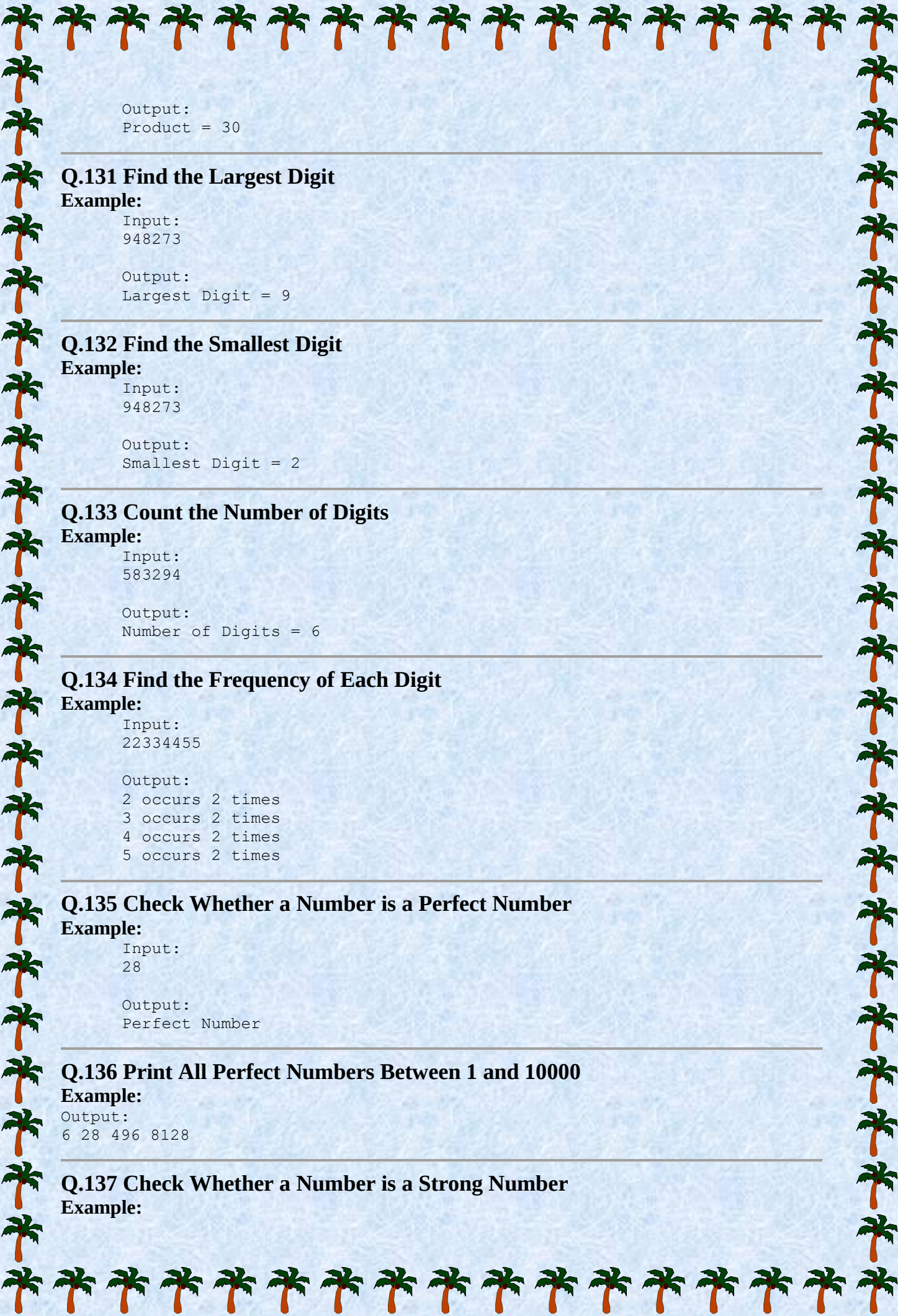
Input:
58329

Output:
Sum of Digits = 27

Q.130 Find the Product of Digits

Example:

Input:
523



Output:
Product = 30

Q.131 Find the Largest Digit

Example:

Input:
948273

Output:
Largest Digit = 9

Q.132 Find the Smallest Digit

Example:

Input:
948273

Output:
Smallest Digit = 2

Q.133 Count the Number of Digits

Example:

Input:
583294

Output:
Number of Digits = 6

Q.134 Find the Frequency of Each Digit

Example:

Input:
22334455

Output:
2 occurs 2 times
3 occurs 2 times
4 occurs 2 times
5 occurs 2 times

Q.135 Check Whether a Number is a Perfect Number

Example:

Input:
28

Output:
Perfect Number

Q.136 Print All Perfect Numbers Between 1 and 10000

Example:

Output:
6 28 496 8128

Q.137 Check Whether a Number is a Strong Number

Example:



Input:
145

Output:
Strong Number

Q.138 Print All Strong Numbers Between 1 and 100000

Example:

Output:
1 2 145 40585

Q.139 Find the GCD of Two Numbers

Example:

Input:
24
36

Output:
GCD = 12

Q.140 Find the LCM of Two Numbers

Example:

Input:
12
18

Output:
LCM = 36

Fibonacci and Factors

Q.141 Generate Fibonacci Series

Example:

Input:
10

Output:
0 1 1 2 3 5 8 13 21 34

Q.142 Print Fibonacci Numbers Less Than 1000

Example:

Output:
0 1 1 2 3 5 ... 987

Q.143 Find the First Fibonacci Number Greater Than 10000

Example:

Output:
10946

Q.144 Print the Multiplication Table

Example:

Input:
7

Output:



$7 \times 1 = 7$
 $7 \times 2 = 14$
...
 $7 \times 10 = 70$

Q.145 Print Multiplication Tables from 2 to 20

Example:

Output:
Table of 2

$2 \times 1 = 2$
...
Table of 3
...

Q.146 Display All Factors

Example:

Input:
24

Output:
1 2 3 4 6 8 12 24

Q.147 Count Factors

Example:

Input:
24

Output:
Total Factors = 8

Q.148 Sum of Factors

Example:

Input:
24

Output:
Sum = 60

Q.149 Check Harshad Number

Example:

Input:
18

Output:
Harshad Number

Q.150 Check Neon Number

Example:

Input:
9

Output:
Neon Number



Number Conversion

Q.151 Decimal to Binary

Example:

Input:
25

Output:
11001

Q.152 Binary to Decimal

Example:

Input:
11001

Output:
25

Q.153 Decimal to Octal

Example:

Input:
65

Output:
101

Q.154 Decimal to Hexadecimal

Example:

Input:
255

Output:
FF

Q.155 Print Binary Numbers from 1 to 31

Example:

Output:
1
10
11
100
...
11111

Q.156 Convert Binary (Integer) to Decimal

Example:

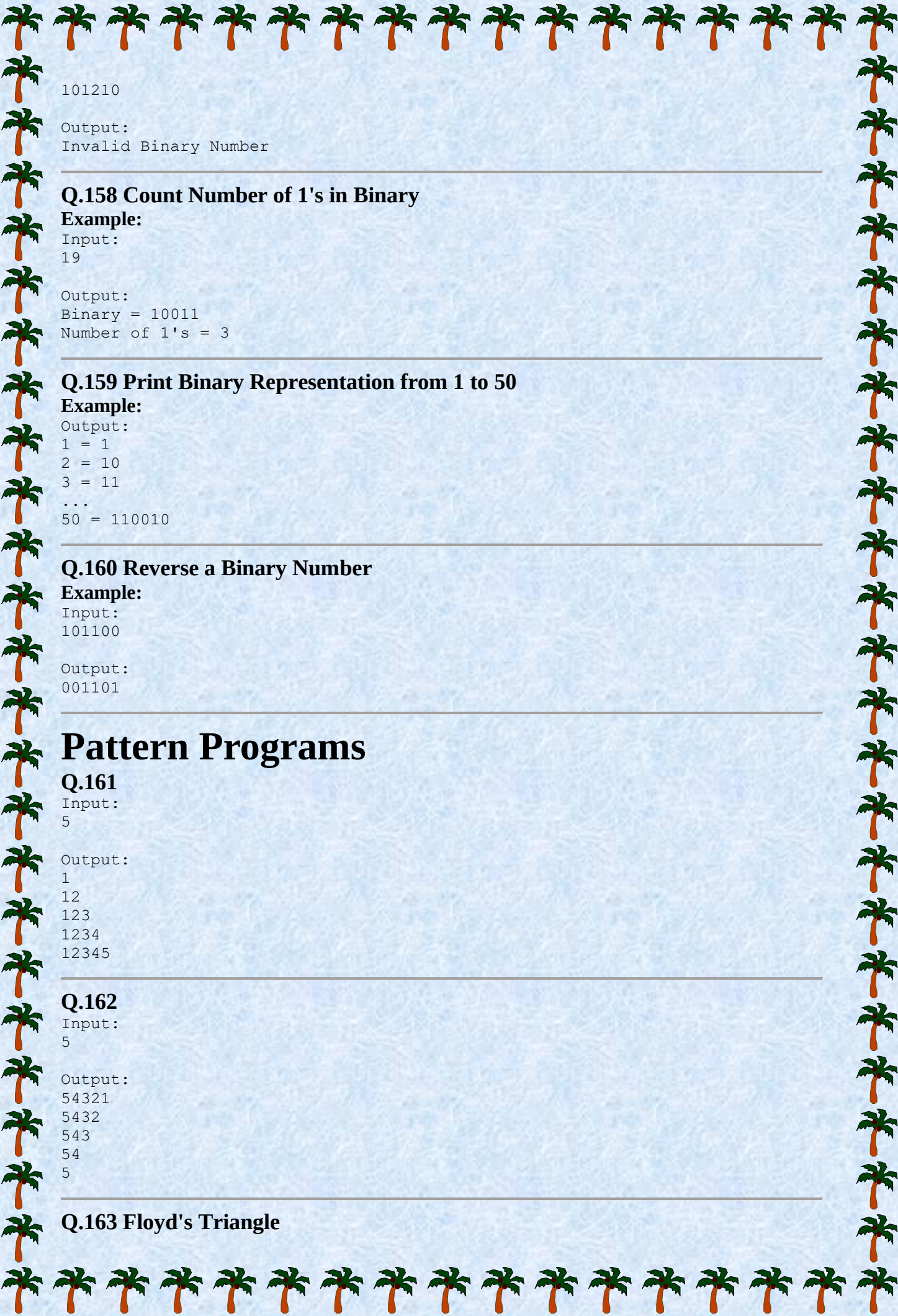
Input:
101011

Output:
43

Q.157 Check Whether a Binary Number is Valid

Example:

Input:



101210

Output:
Invalid Binary Number

Q.158 Count Number of 1's in Binary

Example:

Input:
19

Output:
Binary = 10011
Number of 1's = 3

Q.159 Print Binary Representation from 1 to 50

Example:

Output:
1 = 1
2 = 10
3 = 11
...
50 = 110010

Q.160 Reverse a Binary Number

Example:

Input:
101100

Output:
001101

Pattern Programs

Q.161

Input:
5

Output:
1
12
123
1234
12345

Q.162

Input:
5

Output:
54321
5432
543
54
5

Q.163 Floyd's Triangle

Input:
5

Output:
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

Q.164 Pascal's Triangle

Input:
5

Output:
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1

Q.165 Star Triangle

Input:
5

Output:
*
**

Q.166 Inverted Star Triangle

Input:
5

Output:

**
*

Q.167 Pyramid

Input:
5

Output:
*

Q.168 Diamond Pattern

Input:
5

Output:

```
  *
 ***
*****
*****
*****
*****
*****
  *
  *
```

Q.169 Hollow Rectangle

Input:

5 7

Output:

```
*****
*       *
*       *
*       *
*****
```

Q.170 Hollow Pyramid

Input:

5

Output:

```
  *
 * *
*   *
*     *
*****
```
