1. Write a Python function that takes a sequence of numbers and determines whether all the numbers are different from each other.

2. Write a Python program that creates all possible strings using the letters 'a', 'e', 'i', 'o', and 'I'. Ensure that each character is used only once.

3. Write a Python program that removes and prints every third number from a list of numbers until the list is empty.

4. Write a Python program to identify unique triplets whose three elements sum to zero from an array of n integers.

5. Write a Python program to make combinations of 3 digits.

6. Write a Python program that prints long text, converts it to a list, and prints all the words and the frequency of each word.

7. Write a Python program to count the number of each character in a text file.

8. Write a Python program that retrieves the top stories from Google News.

9. Write a Python program to get a list of locally installed Python modules.

10. Write a Python program to display some information about the OS where the script is running.

11. Write a Python program to check the sum of three elements (each from an array) from three arrays is equal to a target value. Print all those three-element combinations.

Sample data:

```
/*
X = [10, 20, 20, 20]
Y = [10, 20, 30, 40]
Z = [10, 30, 40, 20]
target = 70
*/
```

12. Write a Python program that generates a list of all possible permutations from a given collection of distinct numbers.

13. Write a Python program to get all possible two-digit letter combinations from a 1-9 digit string.

```
string_maps = {
"1": "abc",
"2": "def",
"3": "ghi",
"4": "jkl",
"5": "mno",
"6": "pqrs",
"7": "tuv",
"8": "wxy",
"9": "z"
}
```

14. Write a Python program to add two positive integers without using the '+' operator.

Note: Use bit wise operations to add two numbers.

15. Write a Python program to check the priority of the four operators (+, -, *, /).

16. Write a Python program to get the third side of a right-angled triangle from two given sides.

17. Write a Python program to get all strobogrammatic numbers that are of length n.
A strobogrammatic number is a number whose numeral is rotationally symmetric, so that it appears the same when rotated 180 degrees. In other words, the numeral looks the same right-side up and upside down (e.g., 69, 96, 1001).
For example,
Given n = 2, return ["11", "69", "88", "96"].
Given n = 3, return ['818', '111', '916', '619', '808', '101', '906', '609', '888', '181', '986', '689']

18. Write a Python program to find the median among three given numbers.

19. Write a Python program that finds the value of n when n degrees of number 2 are written sequentially on a line without spaces between them.

20. Write a Python program to find the number of zeros at the end of a factorial of a given positive number.
Range of the number(n): (1 <= n <= 2*109).

21. Write a Python program to find the number of notes (Samples of notes: 10, 20, 50, 100, 200, 500) against an amount.
Range - Number of notes(n) : n (1 <= n <= 1000000).

22. Write a Python program to create a sequence where the first four members of the sequence are equal to one. Each successive term of the sequence is equal to the sum of the four previous ones. Find the Nth member of the sequence.

23. Write a Python program that accepts a positive number and subtracts from it the sum of its digits, and so on. Continue this operation until the number is positive.

24. Write a Python program to find the total number of even or odd divisors of a given integer.

25. Write a Python program to find the digits that are missing from a given mobile number.

26. Write a Python program to compute the summation of the absolute difference of all distinct pairs in a given array (non-decreasing order).
Sample array: [1, 2, 3]
Then all the distinct pairs will be:
1 2
1 3
2 3

27. Write a Python program to find the type of the progression (arithmetic progression / geometric progression) and the next successive member of the three successive members of a sequence.
According to Wikipedia, an arithmetic progression (AP) is a sequence of numbers such that the difference of any two successive members of the sequence is a constant. For instance, the sequence 3, 5, 7, 9, 11, 13, . . . is an arithmetic progression with common difference 2. For this problem, we will limit ourselves to arithmetic progression whose common difference is a non-zero integer.
On the other hand, a geometric progression (GP) is a sequence of numbers where each term after the first is found by multiplying the previous one by a fixed non-zero number called the common ratio. For example, the sequence 2, 6, 18, 54, . . . is a geometric progression with common ratio 3. For this problem, we will limit ourselves to geometric progression whose common ratio is a non-zero integer.

28. Write a Python program to print the length of the series and the series from the given 3rd term, 3rd last term and the sum of a series.
Sample Data:
Input third term of the series: 3
Input 3rd last term: 3
Input Sum of the series: 15
Length of the series: 5
Series:
1 2 3 4 5

29. Write a Python program to find common divisors between two numbers in a given pair.

30. Write a Python program to reverse the digits of a given number and add them to the original. Repeat this procedure if the sum is not a palindrome.
Note: A palindrome is a word, number, or other sequence of characters which reads the same backward as forward, such as madam or racecar.

31. Write a Python program to count the number of carry operations for each addition problem.
According to Wikipedia " In elementary arithmetic, a carry is a digit that is transferred from one column of digits to another column of more significant digits. It is part of the standard algorithm to add numbers together by starting with the rightmost digits and working to the left. For example, when 6 and 7 are added to make 13, the "3" is written to the same column and the "1" is carried to the left".

32. Write a Python program to find the heights of the top three buildings in descending order from eight given buildings.
Input:
0 <= height of building (integer) <= 10,000
Input the heights of eight buildings:
25
35

```
15
16
30
45
37
39
Heights of the top three buildings:
45
39
37
```

33. Write a Python program to compute the digit number of the sum of two given integers.

Input:

Each test case consists of two non-negative integers x and y which are separated by a space in a line.

0 <= x, y <= 1,000,000

```
Input two integers(a b):
5 7
Sum of two integers a and b.:
2
```

34. Write a Python program to check whether three given lengths (integers) of three sides form a right triangle. Print "Yes" if the given sides form a right triangle otherwise print "No".

Input:

Integers separated by a single space.

1 <= length of the side <= 1,000

```
Input three integers(sides of a triangle)
8 6 7
No
```

35. Write a Python program which solve the equation:

ax+by=c

dx+ey=f

Print the values of x, y where a, b, c, d, e and f are given.

Input:

a,b,c,d,e,f separated by a single space.

(-1,000 <= a,b,c,d,e,f <= 1,000)

Input the value of a, b, c, d, e, f:

5 8 6 7 9 4

Values of x and y:

-2.000 2.000

36. Write a Python program to compute the amount of debt in n months. Each month, the loan adds 5% interest to the $100,000 debt and rounds to the nearest 1,000 above.

Input:

An integer n (0 <= n <= 100)

Input number of months: 7

Amount of debt: $144000

37. Write a Python program that reads an integer n and finds the number of combinations of a,b,c and d (0 = a,b,c,d = 9) where (a + b + c + d) will be equal to n.

Input:

n (1 <= n <= 50)

Input the number(n): 15

Number of combinations: 592

38. Write a Python program to print the number of prime numbers that are less than or equal to a given number.

Input:

n (1 <= n <= 999,999)

Input the number(n): 35

Number of prime numbers which are less than or equal to n.: 11

39. Write a program to compute the radius and the central coordinate (x, y) of a circle which is constructed from three given points on the plane surface.

Input:

x1, y1, x2, y2, x3, y3 separated by a single space.

Input three coordinate of the circle:

9 3 6 8 3 6

Radius of the said circle:

3.358

Central coordinate (x, y) of the circle:

6.071 4.643

40. Write a Python program to check if a point (x,y) is in a triangle or not. A triangle is formed by three points.

Input:

x1,y1,x2,y2,x3,y3,xp,yp separated by a single space.

Input three coordinate of the circle:

9 3 6 8 3 6

Radius of the said circle:

3.358

Central coordinate (x, y) of the circle:

6.071 4.643

41. Write a Python program to compute and print the sum of two given integers (greater or equal to zero). In the event that the given integers or the sum exceed 80 digits, print "overflow".

Input first integer:

25

Input second integer:

22

Sum of the two integers: 47

42. Write a Python program that accepts six numbers as input and sorts them in descending order.

Input:

Input consists of six numbers n1, n2, n3, n4, n5, n6 (-100000 <= n1, n2, n3, n4, n5, n6 <= 100000). The six numbers are separated by a space.

```
Input six integers:
15 30 25 14 35 40
After sorting the said integers:
40 35 30 25 15 14
```

43. Write a Python program to test whether two lines PQ and RS are parallel. The four points are P(x1, y1), Q(x2, y2), R(x3, y3), S(x4, y4).

Input:

x1,y1,x2,y2,x3,y3,xp,yp separated by a single space

```
Input x1,y1,x2,y2,x3,y3,xp,yp:
2 5 6 4 8 3 9 7
PQ and RS are not parallel
```

44. Write a Python program to find the maximum sum of a contiguous subsequence from a given sequence of numbers a1, a2, a3, ... an. A subsequence of one element is also a continuous subsequence.

Input:

You can assume that 1 <= n <= 5000 and -100000 <= ai <= 100000.

Input numbers are separated by a space.

Input 0 to exit.

```
Input number of sequence of numbers you want to input (0 to exit):
3
Input numbers:
2
4
6
Maximum sum of the said contiguous subsequence: 12
Input number of sequence of numbers you want to input (0 to exit):
0
```

45. There are two circles C1 with radius r1, central coordinate (x1, y1) and C2 with radius r2 and central coordinate (x2, y2).

Write a Python program to test the followings -

- "C2 is in C1" if C2 is in C1
- "C1 is in C2" if C1 is in C2
- "Circumference of C1 and C2 intersect" if circumference of C1 and C2 intersect
- "C1 and C2 do not overlap" if C1 and C2 do not overlap and
- "Circumference of C1 and C2 will touch" if C1 and C2 touch

Input:

```
Input numbers (real numbers) are separated by a space.
Input x1, y1, r1, x2, y2, r2:
5 4 2 3 9 2
C1 and C2 do not overlap
Input x1, y1, r1, x2, y2, r2:
5 4 3 5 10 3
Circumference of C1 and C2 will touch
Input x1, y1, r1, x2, y2, r2:
6 4 3 10 4 2
Circumference of C1 and C2 intersect
Input x1, y1, r1, x2, y2, r2:
5 4 3 5 4 2
C2 is in C1
Input x1, y1, r1, x2, y2, r2:
5 4 2 5 4 3
C1 is in C2
```

46. Write a Python program that reads a date (from 2016/1/1 to 2016/12/31) and prints the day of the date. Jan. 1, 2016, is Friday. Note that 2016 is a leap year.

Input:

Two integers m and d separated by a single space in a line, m ,d represent the month and the day.

```
Input month and date (separated by a single space):
5 15
Name of the date: Sunday
```

47. Write a Python program that reads text (only alphabetical characters and spaces) and prints two words. The first word is the one that appears most often in the text. The second one is the word with the most letters.

Note: A word is a sequence of letters which is separated by the spaces.

Input:

A text is given in a line with following condition:
a. The number of letters in the text is less than or equal to 1000.
b. The number of letters in a word is less than or equal to 32.
c. There is only one word which is arise most frequently in given text.
d. There is only one word which has the maximum number of letters in given text.
Input text: Thank you for your comment and your participation.
Output: your participation.

48. Write a Python program that reads n digits (given) chosen from 0 to 9 and prints the number of combinations where the sum of the digits equals another given number (s). Do not use the same digits in a combination.

Input:

Two integers as number of combinations and their sum by a single space in a line. Input 0 0 to exit.

```
Input number of combinations and sum, input 0 0 to exit:
5 6
2 4
0 0
2
```

49. Write a Python program that reads the two adjoining sides and the diagonal of a parallelogram and checks whether the parallelogram is a rectangle or a rhombus.

According to Wikipedia-

parallelograms: In Euclidean geometry, a parallelogram is a simple (non-self-intersecting) quadrilateral with two pairs of parallel sides. The opposite or facing sides of a parallelogram are of equal length and the opposite angles of a parallelogram are of equal measure.

rectangles: In Euclidean plane geometry, a rectangle is a quadrilateral with four right angles. It can also be defined as an equiangular quadrilateral, since equiangular means that all of its angles are equal (360°/4 = 90°). It can also be defined as a parallelogram containing a right angle.

rhombus: In plane Euclidean geometry, a rhombus (plural rhombi or rhombuses) is a simple (non-self-intersecting) quadrilateral whose four sides all have the same length. Another name is equilateral quadrilateral, since equilateral means that all of its sides are equal in length. The rhombus is often called a diamond,

after the diamonds suit in playing cards which resembles the projection of an octahedral diamond, or a lozenge, though the former sometimes refers specifically to a rhombus with a 60° angle, and the latter sometimes refers specifically to a rhombus with a 45° angle.
Input:
Two adjoined sides and the diagonal.
1 <= ai, bi, ci <= 1000, ai + bi > ci
Input two adjoined sides and the diagonal of a parallelogram (comma separated):
3,4,5
This is a rectangle.

50. Write a Python program to replace a string "Python" with "Java" and "Java" with "Python" in a given string.
Input:
English letters (including single byte alphanumeric characters, blanks, symbols) are given on one line. The length of the input character string is 1000 or less.
Input a text with two words 'Python' and 'Java'
Python is popular than Java
Java is popular than Python

51. Write a Python program that determines the difference between the largest and smallest integers created by 8 numbers from 0 to 9. The number that can be rearranged shall start with 0 as in 00135668.
Input:
Input an integer created by 8 numbers from 0 to 9.:
2345
Difference between the largest and the smallest integer from the given integer:
3087

52. Write a Python program to compute the sum of the first n prime numbers.
Input:
n (n <= 10000). Input 0 to exit the program.
Input a number (n<=10000) to compute the sum:(0 to exit)
25

Sum of first 25 prime numbers:
1060

53. Write a Python program which accepts an even number (>=4, Goldbach number) from the user and creates combinations which express the given number as a sum of two prime numbers. Print the number of combinations.
Goldbach number: A Goldbach number is a positive even integer that can be expressed as the sum of two odd primes.[4] Since four is the only even number greater than two that requires the even prime 2 in order to be written as the sum of two primes, another form of the statement of Goldbach's conjecture is that all even integers greater than 4 are Goldbach numbers.
The expression of a given even number as a sum of two primes is called a Goldbach partition of that number. The following are examples of Goldbach partitions for some even numbers:
6 = 3 + 3
8 = 3 + 5
10 = 3 + 7 = 5 + 5
12 = 7 + 5
...
100 = 3 + 97 = 11 + 89 = 17 + 83 = 29 + 71 = 41 + 59 = 47 + 53
Input an even number (0 to exit):
100
Number of combinations:
6

54. If you draw a straight line on a plane, the plane is divided into two regions. For example, if you draw two straight lines in parallel, you get three areas, and if you draw vertically one to the other you get 4 areas.
Write a Python program to create the maximum number of regions obtained by drawing n given straight lines.
Input:
(1 <= n <= 10,000)
Input number of straight lines (o to exit):
5

Number of regions:
16

55. There are four different points on a plane, P(x_p,y_p), Q(x_q, y_q), R(x_r, y_r) and S(x_s, y_s). Write a Python program to determine whether AB and CD are orthogonal.

Input:

x_p,y_p, x_q, y_q, x_r, y_r, x_s and y_s are -100 to 100 respectively and each value can be up to 5 digits after the decimal point It is given as a real number including the number of. Output:

Output AB and CD are not orthogonal! or AB and CD are orthogonal!.

erical values (positive integers) embedded in a sentence.

Input:

Sentences with positive integers are given over multiple lines. Each line is a character string containing one-byte alphanumeric characters, symbols, spaces, or an empty line. However the input is 80 characters or less per line and the sum is 10,000 or less.

Input some text and numeric values (to exit):
Sum of the numeric values: 80
None
Input some text and numeric values (to exit):
Sum of the numeric values: 17
None
Input some text and numeric values (to exit):
Sum of the numeric values: 10
None

57. There are 10 vertical and horizontal squares on a plane. Each square is painted blue and green. Blue represents the sea, and green represents the land. When two green squares are in contact with the top and bottom, or right and left, they are said to be ground. The area created by only one green square is called "island". For example, there are five islands in the figure below.

Write a Python program to read the mass data and find the number of islands.

Input:

```
Input 10 rows of 10 numbers representing green squares (island) as 1 and blue squares (sea) as zeros
1100000111
1000000111
0000000111
0010001000
0000011100
0000111110
0001111111
1000111110
1100011100
1110001000
Number of islands:
5
```

58. When character are consecutive in a string , it is possible to shorten the character string by replacing the character with a certain rule. For example, in the case of the character string YYYYY, if it is expressed as # 5 Y, it is compressed by one character.

Write a Python program to restore the original string by entering the compressed string with this rule. However, the # character does not appear in the restored character string.

Input:

The restored character string for each character on one line.

```
Original text: XY#6Z1#4023
XYZZZZZZ1000023
Original text: #39+1=1#30
999+1=1000
```

59. A convex polygon is a simple polygon in which no line segment between two points on the boundary ever goes outside the polygon. Equivalently, it is a simple polygon whose interior is a convex set. In a convex polygon, all interior angles are less than or equal to 180 degrees, while in a strictly convex polygon all interior angles are strictly less than 180 degrees.

Write a Python program that compute the area of the polygon . The vertices have the names vertex 1, vertex 2, vertex 3, ... vertex n according to the order of edge connections

Note: The original sentences are uppercase letters, lowercase letters, numbers, symbols, less than 100 letters, and consecutive letters are not more than 9 letters.

Input:

```
Input number of sides: 5
Side: 1
Input the Coordinate:
Input Coordinate x: 1
Input Coordinate y: 0
Side: 2
Input the Coordinate:
Input Coordinate x: 0
Input Coordinate y: 0
Side: 3
Input the Coordinate:
Input Coordinate x: 1
Input Coordinate y: 1
Side: 4
Input the Coordinate:
Input Coordinate x: 2
Input Coordinate y: 0
Side: 5
Input the Coordinate:
Input Coordinate x: -1
Input Coordinate y: 1
Area of the Polygon: 0.5
```

60. Internet search engine giant, such as Google accepts web pages around the world and classify them, creating a huge database. The search engines also analyze the search keywords entered by the user and create inquiries for database search. In both cases, complicated processing is carried out in order to realize efficient retrieval, but basics are all cutting out words from sentences.

Write a Python program to cut out words of 3 to 6 characters length from a given sentence not more than 1024 characters.

Input:

English sentences consisting of delimiters and alphanumeric characters are given on one line.

```
Input a sentence (1024 characters. max.)
The quick brown fox
3 to 6 characters length of words:
The quick brown fox
```

61. Arrange integers (0 to 99) as narrow hilltop, as illustrated in Figure 1. Reading such data representing huge, when starting from the top and proceeding according to the next rule to the bottom. Write a Python program that compute the maximum value of the sum of the passing integers.

Input:

A series of integers separated by commas are given in diamonds. No spaces are included in each line. The input example corresponds to Figure 1. The number of lines of data is less than 100 lines.

Output:

The maximum value of the sum of integers passing according to the rule on one line.

```
Input the numbers (ctrl+d to exit):
8
4, 9
9, 2, 1
3, 8, 5, 5
5, 6, 3, 7, 6
3, 8, 5, 5
9, 2, 1
4, 9
8
Maximum value of the sum of integers passing according to the rule on one line.
64
```

62. Write a Python program to find the number of combinations that satisfy p + q + r + s = n where n is a given number <= 4000 and p, q, r, s are between 0 to 1000.

```
Input a positive integer: (ctrl+d to exit)
252
Number of combinations of a,b,c,d: 2731135
```

63. Write a Python program that adds up the columns and rows of the given table as shown in the specified figure.

```
Input number of rows/columns (0 to exit)
4
Input cell value:
25 69 51 26
68 35 29 54
54 57 45 63
61 68 47 59
Result:
25 69 51 26 171
68 35 29 54 186
54 57 45 63 219
61 68 47 59 235
208 229 172 202 811
Input number of rows/columns (0 to exit)
```

64. Given a list of numbers and a number k, write a Python program to check whether the sum of any two numbers from the list is equal to k or not.

For example, given [1, 5, 11, 5] and k = 16, return true since 11 + 5 is 16.

```
Sample Input:
([12, 5, 0, 5], 10)
([20, 20, 4, 5], 40)
([1, -1], 0)
([1, 1, 0], 0)
Sample Output:
True
```

True
True
False

65. In mathematics, a subsequence is a sequence that can be derived from another sequence by deleting some or no elements without changing the order of the remaining elements. For example, the sequence (A,B,D) is a subsequence of (A,B,C,D,E,F) obtained after removal of elements C, E, and F. The relation of one sequence being the subsequence of another is a preorder.
The subsequence should not be confused with substring (A,B,C,D) which can be derived from the above string (A,B,C,D,E,F) by deleting substring (E,F). The substring is a refinement of the subsequence.
The list of all subsequences for the word "apple" would be "a", "ap", "al", "ae", "app", "apl", "ape", "ale", "appl", "appe", "aple", "apple", "p", "pp", "pl", "pe", "ppl", "ppe", "ple", "pple", "l", "le", "e", "".
Write a Python program to find the longest word in a set of words which is a subsequence of a given string.
Sample Input:
("Green", {"Gn", "Gren", "ree", "en"})
("pythonexercises", {"py", "ex", "exercises"})
Sample Output:
Gren
exercises

66. From Wikipedia, the free encyclopaedia:
A happy number is defined by the following process:
Starting with any positive integer, replace the number by the sum of the squares of its digits, and repeat the process until the number equals 1 (where it will stay), or it loops endlessly in a cycle which does not include 1. Those numbers for which this process ends in 1 are happy numbers, while those that do not end in 1 are unhappy numbers.
Write a Python program to check whether a number is "happy" or not.
Sample Input:
(7)

(932)
(6)
Sample Output:
True
True
False

67. From Wikipedia,
A happy number is defined by the following process:
Starting with any positive integer, replace the number by the sum of the squares of its digits, and repeat the process until the number equals 1 (where it will stay), or it loops endlessly in a cycle which does not include 1. Those numbers for which this process ends in 1 are happy numbers, while those that do not end in 1 are unhappy numbers.
Write a Python program to find and print the first 10 happy numbers.
Sample Input:
[:10]
Sample Output:
[1, 7, 10, 13, 19, 23, 28, 31, 32, 44]

68. Write a Python program that counts the number of prime numbers that are less than a given non-negative number.
Sample Input:
(10)
(100)
Sample Output:
4
25

69. In abstract algebra, a group isomorphism is a function between two groups that sets up a one-to-one correspondence between the elements of the groups in a way that respects the given group operations. If there exists an isomorphism between two groups, then the groups are called isomorphic.
Two strings are isomorphic if the characters in string A can be replaced to get

string B
Given "foo", "bar", return false.
Given "paper", "title", return true.
Write a Python program to check if two given strings are isomorphic to each other or not.
Sample Input:

```
("foo", "bar")
("bar", "foo")
("paper", "title")
("title", "paper")
("apple", "orange")
("aa", "ab")
("ab", "aa")
```

Sample Output:

```
False
False
True
True
False
False
False
```

70. Write a Python program to find the longest common prefix string among a given array of strings. Return false if there is no common prefix.
For Example, longest common prefix of "abcdefgh" and "abcefgh" is "abc".
Sample Input:

```
["abcdefgh","abcefgh"]
["w3r","w3resource"]
["Python","PHP", "Perl"]
["Python","PHP", "Java"]
```

Sample Output:

```
abc
w3r
P
```

71. Write a Python program to reverse only the vowels of a given string.
Sample Input:
("w3resource")
("Python")
("Perl")
("USA")
Sample Output:
w3resuorce
Python
Perl
ASU

72. Write a Python program to check whether a given integer is a palindrome or not.
Note: An integer is a palindrome when it reads the same backward as forward. Negative numbers are not palindromic.
Sample Input:
(100)
(252)
(-838)
Sample Output:
False
True
False

73. Write a Python program that removes duplicate elements from a given array of numbers so that each element appears only once and returns the new length of the array.
Sample Input:
[0,0,1,1,2,2,3,3,4,4,4]
[1, 2, 2, 3, 4, 4]
Sample Output:
5

4

74. Write a Python program to calculate the maximum profit from selling and buying values of stock. An array of numbers represent the stock prices in chronological order.
For example, given [8, 10, 7, 5, 7, 15], the function will return 10, since the buying value of the stock is 5 dollars and sell value is 15 dollars.
Sample Input:
([8, 10, 7, 5, 7, 15])
([1, 2, 8, 1])
([])
Sample Output:
10
7
0

75. Write a Python program to remove all instances of a given value from a given array of integers and find the length of the newly created array.
Sample Input:
([1, 2, 3, 4, 5, 6, 7, 5], 5)
([10,10,10,10,10], 10)
([10,10,10,10,10], 20)
([], 1)
Sample Output:
6
0
5
0

76. Write a Python program to find the starting and ending position of a given value in an array of integers, sorted in ascending order.
If the target is not found in the array, return [-1, 0].
Input: [5, 7, 7, 8, 8, 8] target value = 8
Output: [3, 5]

Input: [1, 3, 6, 9, 13, 14] target value = 4
Output: [-1, 0]

77. The price of a given stock on each day is stored in an array.
Write a Python program to find the maximum profit in one transaction i.e., buy one and sell one share of the stock from the given price value of the said array.
You cannot sell a stock before you buy one.
Input (Stock price of each day): [224, 236, 247, 258, 259, 225]
Output: 35
Explanation:
236 - 224 = 12
247 - 224 = 23
258 - 224 = 34
259 - 224 = 35
225 - 224 = 1
247 - 236 = 11
258 - 236 = 22
259 - 236 = 23
225 - 236 = -11
258 - 247 = 11
259 - 247 = 12
225 - 247 = -22
259 - 258 = 1
225 - 258 = -33
225 - 259 = -34

78. Write a Python program to print a given N by M matrix of numbers line by line in forward > backwards > forward >... order.
Input matrix:
[[1, 2, 3,4],
[5, 6, 7, 8],
[0, 6, 2, 8],
[2, 3, 0, 2]]
Output:

1
2
3
4
8
7
6
5
0
6
2
8
2
0
3
2

79. Write a Python program to compute the largest product of three integers from a given list of integers.
Sample Input:
[-10, -20, 20, 1]
[-1, -1, 4, 2, 1]
[1, 2, 3, 4, 5, 6]
Sample Output:

```
4000
8
120
```

80. Write a Python program to find the first missing positive integer that does not exist in a given list.
Sample Input:
[2, 3, 7, 6, 8, -1, -10, 15, 16]
[1, 2, 4, -7, 6, 8, 1, -10, 15]
[1, 2, 3, 4, 5, 6, 7]

[-2, -3, -1, 1, 2, 3]
Sample Output:

```
4
3
8
4
```

81. Write a Python program to randomly generate a list of 10 even numbers between 1 and 100 inclusive.
Note: Use random.sample() to generate a list of random values.
Sample Input:
(1,100)
Sample Output:

```
[4, 22, 8, 20, 24, 12, 30, 98, 28, 48]
```

82. Write a Python program to calculate the median from a list of numbers.
Sample Input:
[1,2,3,4,5]
[1,2,3,4,5,6]
[6,1,2,4,5,3]
[1.0,2.11,3.3,4.2,5.22,6.55]
[1.0,2.11,3.3,4.2,5.22]
[2.0,12.11,22.3,24.12,55.22]
Sample Output:
3
3.5
3.5
3.75
3.3
22.3

83. Write a Python program to test whether a given number is symmetrical or not.
A number is symmetrical when it is equal to its reverse.
A number is symmetrical when it is equal of its reverse.
Sample Input:

(121)
(0)
(122)
(990099)
Sample Output:
True
True
False
True

84. Write a Python program that accepts a list of numbers. Count the negative numbers and compute the sum of the positive numbers of the said list. Return these values through a list.
Original list: [1, 2, 3, 4, 5]
Number of negative of numbers and sum of the positive numbers of the said list:
[0, 15]
Original list: [-1, -2, -3, -4, -5]
[5, 0]
Number of negative of numbers and sum of the positive numbers of the said list:
[5, 0]
Original list: [1, 2, 3, -4, -5]
[2, 6]
Number of negative of numbers and sum of the positive numbers of the said list:
[2, 6]
Original list: [1, 2, -3, -4, -5]
[3, 3]
Number of negative of numbers and sum of the positive numbers of the said list:
[3, 3]

85. From Wikipedia:
An isogram (also known as a "nonpattern word") is a logological term for a word or phrase without a repeating letter. It is also used by some people to mean a word or phrase in which each letter appears the same number of times, not necessarily just once. Conveniently, the word itself is an isogram in both senses

of the word, making it autological.
Write a Python program to check whether a given string is an "isogram" or not.
Sample Input:
("w3resource")
("w3r")
("Python")
("Java")
Sample Output:
False
True
True
False

86. Write a Python program to count the number of equal numbers from three given integers.
Sample Input:
(1, 1, 1)
(1, 2, 2)
(-1, -2, -3)
(-1, -1, -1)
Sample Output:
3
2
0
3

87. Write a Python program to check whether a given employee code is exactly 8 digits or 12 digits. Return True if the employee code is valid and False if it's not.
Sample Input:
('12345678')
('1234567j')
('12345678j')
('123456789123')
('123456abcdef')

Sample Output:
True
False
False
True
False

88. Write a Python program that accepts two strings and determines whether the letters in the second string are present in the first string.
Sample Input:
["python", "ypth"]
["python", "ypths"]
["python", "ypthon"]
["123456", "01234"]
["123456", "1234"]
Sample Output:
True
False
True
False
True

89. Write a Python program to compute the sum of the three lowest positive numbers from a given list of numbers.
Original list of numbers: [10, 20, 30, 40, 50, 60, 7]
Sum of the three lowest positive numbers of the said array: 37
Original list of numbers: [1, 2, 3, 4, 5]
Sum of the three lowest positive numbers of the said array: 6
Original list of numbers: [0, 1, 2, 3, 4, 5]
Sum of the three lowest positive numbers of the said array: 6

90. Write a Python program that replaces all but the last five characters of a string with "*" and returns the modified string.
Original String: kdi39323swe

new string: ******23swe
Original String: 12345abcdef
new string: ******bcdef
Original String: 12345
new string: 12345

91. Write a Python program to count the number of arguments in a given function.
Sample Input:
()
(1)
(1, 2)
(1, 2, 3)
(1, 2, 3, 4)
[1, 2, 3, 4]
Sample Output:
0
1
2
3
4
1

92. Write a Python program to compute the cumulative sum of numbers in a given list.
Note: Cumulative sum = sum of itself + all previous numbers in the said list.
Sample Input:
[10, 20, 30, 40, 50, 60, 7]
[1, 2, 3, 4, 5]
[0, 1, 2, 3, 4, 5]
Sample Output:
[10, 30, 60, 100, 150, 210, 217]
[1, 3, 6, 10, 15]

```
[0, 1, 3, 6, 10, 15]
```

93. Write a Python program to find the central character(s) of a given string. Return the two middle characters if the length of the string is even. Return the middle character if the length of the string is odd.

```
Original string: Python
Middle character(s) of the said string: th
Original string: PHP
Middle character(s) of the said string: H
Original string: Java
Middle character(s) of the said string: av
```

94. Write a Python program to find the largest product of a pair of adjacent elements from a given list of integers.

```
Original list: [1, 2, 3, 4, 5, 6]
Largest product of the pair of adjacent elements of the said list: 30
Original list: [1, 2, 3, 4, 5]
Largest product of the pair of adjacent elements of the said list: 20
Original list: [2, 3]
Largest product of the pair of adjacent elements of the said list: 6
```

95. Write a Python program that checks whether every even index contains an even number and every odd index contains an odd number of a given list.

```
Original list of numbers: [2, 1, 4, 3, 6, 7, 6, 3]
Check whether every even index contains an even number and every
odd index contains odd number of a given list:
True
Original list of numbers: [2, 1, 4, 3, 6, 7, 6, 4]
Check whether every even index contains an even number and every
odd index contains odd number of a given list:
False
Original list of numbers: [2, 1, 4, 3, 6, 7, 6, 4]
Check whether every even index contains an even number and every
odd index contains odd number of a given list:
```

```
True
```

96. Write a Python program to check whether a given number is a narcissistic number or not.

If you are a reader of Greek mythology, then you are probably familiar with Narcissus. He was a hunter of exceptional beauty that he died because he was unable to leave a pool after falling in love with his own reflection. That's why I keep myself away from pools these days (kidding).
In mathematics, he has kins by the name of narcissistic numbers - numbers that can't get enough of themselves. In particular, they are numbers that are the sum of their digits when raised to the power of the number of digits.
For example, 371 is a narcissistic number; it has three digits, and if we cube each digits $3^3 + 7^3 + 1^3$ the sum is 371. Other 3-digit narcissistic numbers are
$153 = 1^3 + 5^3 + 3^3$
$370 = 3^3 + 7^3 + 0^3$
$407 = 4^3 + 0^3 + 7^3$.
There are also 4-digit narcissistic numbers, some of which are 1634, 8208, 9474 since
$1634 = 1^4+6^4+3^4+4^4$
$8208 = 8^4+2^4+0^4+8^4$
$9474 = 9^4+4^4+7^4+4^4$
It has been proven that there are only 88 narcissistic numbers (in the decimal system) and that the largest of which is
115,132,219,018,763,992,565,095,597,973,971,522,401
has 39 digits.

Ref.: //https://bit.ly/2qNYxo2
Sample Input:
(153)
(370)
(407)
(409)
(1634)
(8208)
(9474)
(9475)

Sample Output:

```
True
True
True
False
True
True
True
False
```

97. Write a Python program to find the highest and lowest number from a given string of space-separated integers.

```
Original string: 1 4 5 77 9 0
Highest and lowest number of the said string: (77, 0)
Original string: -1 -4 -5 -77 -9 0
Highest and lowest number of the said string: (0, -77)
Original string: 0 0
Highest and lowest number of the said string: (0, 0)
```

98. Write a Python program to check whether a sequence of numbers has an increasing trend or not.

Sample Input:

```
[1,2,3,4]
[1,2,5,3,4]
[-1,-2,-3,-4]
[-4,-3,-2,-1]
[1,2,3,4,0]
```

Sample Output:

```
True
False
False
True
False
```

99. Write a Python program to find the position of the second occurrence of a given string in another given string. If there is no such string return -1.
Sample Input:
("The quick brown fox jumps over the lazy dog", "the")
("the quick brown fox jumps over the lazy dog", "the")
Sample Output:
-1
31

100. Write a Python program to compute the sum of all items in a given array of integers where each integer is multiplied by its index. Return 0 if there is no number.
Sample Input:
[1,2,3,4]
[-1,-2,-3,-4]
[]
Sample Output:
20
-20
0

101. Write a Python program to find the name of the oldest student in a given dictionary containing the names and ages of a group of students.
Sample Input:
{"Bernita Ahner": 12, "Kristie Marsico": 11, "Sara Pardee": 14, "Fallon Fabiano": 11, "Nidia Dominique": 15}
{"Nilda Woodside": 12, "Jackelyn Pineda": 12.2, "Sofia Park": 12.4, "Joannie Archibald": 12.6, "Becki Saunder": 12.7}
Sample Output:
Nidia Dominique
Becki Saunder

102. Write a Python program to create a string with no duplicate consecutive letters from a given string.

Sample Input:
("PPYYYTTHON")
("PPyyythonnn")
("Java")
("PPPHHHPPP")
Sample Output:
PYTHON
Python
Java
PHP

103. Write a Python program to check whether two given lines are parallel or not.
Note: Parallel lines are two or more lines that never intersect. Parallel Lines are like railroad tracks that never intersect.
The General Form of the equation of a straight line is: ax + by = c
The said straight line is represented in a list as [a, b, c]
Example of two parallel lines:
x + 4y = 10 and x + 4y = 14
Sample Input:
([2,3,4], [2,3,8])
([2,3,4], [4,-3,8])
Sample Output:
True
False

104. Write a Python program to find a number in a given matrix that is maximum in its column and minimum in its row.
Sample Input:
Original matrix: [[1, 2], [2, 3]]
Number in the said matrix which is maximum in its column and minimum in its row:
[2]
Original matrix: [[1, 2, 3], [3, 4, 5]]
Number in the said matrix which is maximum in its column and minimum in its

row:
[3]
Original matrix: [[7, 5, 6], [3, 4, 4], [6, 5, 7]]
Number in the said matrix which is maximum in its column and minimum in its row:
[5]

105. Write a Python program to check whether a given sequence is linear, quadratic or cubic.
Sequences are sets of numbers that are connected in some way.
Linear sequence:
A number pattern which increases or decreases by the same amount each time is called a linear sequence. The amount it increases or decreases by is known as the common difference.
Quadratic sequence:
In quadratic sequence, the difference between each term increases, or decreases, at a constant rate.
Cubic sequence:
Sequences where the 3rd difference are known as cubic sequence.
Sample Output:
Original Sequence: [0, 2, 4, 6, 8, 10]
Check the said sequence is Linear, Quadratic or Cubic?
Linear Sequence
Original Sequence: [1, 4, 9, 16, 25]
Check the said sequence is Linear, Quadratic or Cubic?
Quadratic Sequence
Original Sequence: [0, 12, 10, 0, -12, -20]
Check the said sequence is Linear, Quadratic or Cubic?
Cubic Sequence
Original Sequence: [1, 2, 3, 4, 5]
Check the said sequence is Linear, Quadratic or Cubic?
Linear Sequence

106. Write a Python program to test whether a given integer is a Pandigital number or not.
From Wikipedia,
In mathematics, a pandigital number is an integer that in a given base has among its significant digits each digit used in the base at least once.
For example,
1223334444555556666667777777888888889999999990 is a pandigital number in base 10.
The first few pandigital base 10 numbers are given by:
1023456789, 1023456798, 1023456879, 1023456897, 1023456978, 1023456987, 1023457689

Sample Output:
Original number: 1023456897 Check the said number is Pandigital number or not? True Original number: 1023456798 Check the said number is Pandigital number or not? True Original number: 1023457689 Check the said number is Pandigital number or not? True Original number: 1023456789 Check the said number is Pandigital number or not? True Original number: 102345679 Check the said number is Pandigital number or not? False

107. Write a Python program to check whether a given number is odd or even.
A number is called "Oddish" if the sum of all of its digits is odd, and a number is called "Evenish" if the sum of all of its digits is even.
Sample Output:
Original Number 120
Check whether the sum of all digits of the said number is odd or even!
Oddish
Original Number 321
Check whether the sum of all digits of the said number is odd or even!
Evenish
Original Number 43
Check whether the sum of all digits of the said number is odd or even!
Oddish
Original Number 4433
Check whether the sum of all digits of the said number is odd or even!

```
Evenish
Original Number 373
Check whether the sum of all digits of the said number is odd or even!
Oddish
```

108. Write a Python program that takes three integers and checks whether the sum of the last digit of the first number and the last digit of the second number equals the last digit of the third number.

Sample Input:

```
(12, 26, 44)
(145, 122, 1010)
(0, 20, 40)
(1, 22, 40)
(145, 129, 104)
```

Sample Output:

```
True
False
True
False
True
```

109. Write a Python program to find the indices of all occurrences of a given item in a given list.

Sample Input:

```
([1,2,3,4,5,2], 2)
([3,1,2,3,4,5,6,3,3], 3)
([1,2,3,-4,5,2,-4], -4)
```

Sample Output:

```
Original list of numbers: [1, 2, 3, 4, 5, 2]
Given Number 2
Indices of all occurrences of the said item in the given list:
[1, 5]
Original list of numbers: [3, 1, 2, 3, 4, 5, 6, 3, 3]
Given Number 3
```

Indices of all occurrences of the said item in the given list:
[0, 3, 7, 8]
Original list of numbers: [1, 2, 3, -4, 5, 2, -4]
Given Number -4
Indices of all occurrences of the said item in the given list:
[3, 6]
Original list of numbers: [1, 2, 3, 4, 5, 2]
Given Number 7
Indices of all occurrences of the said item in the given list:
[]

110. Write a Python program to remove duplicate numbers from a given list of numbers.
Sample Input:
([1,2,3,2,3,4,5])
([1,2,3,2,4,5])
([1,2,3,4,5])
Sample Output:
Original list of numbers: [1, 2, 3, 2, 3, 4, 5]
After removing the duplicate numbers from the said list:
[1, 4, 5]
Original list of numbers: [1, 2, 3, 2, 4, 5]
After removing the duplicate numbers from the said list:
[1, 3, 4, 5]
Original list of numbers: [1, 2, 3, 4, 5]
After removing the duplicate numbers from the said list:
[1, 2, 3, 4, 5]

111. Write a Python program which checks whether two circles in the same plane (with the same center (x,y) and radius) intersect. If intersection occurs, return true, otherwise return false.
Sample Input:
([1,2, 4], [1,2, 8])
([0,0, 2], [10,10, 5])

Sample Output:

```
True
False
```

112. Write a Python program to compute the digit distance between two integers. The digit distance between two numbers is the absolute value of the difference of those numbers.

For example, the distance between 3 and -3 on the number line given by the |3 - (-3) | = |3 + 3 | = 6 units

Digit distance of 123 and 256 is

Since |1 - 2| + |2 - 5| + |3 - 6| = 1 + 3 + 3 = 7

Sample Input:

```
(123, 256)
(23, 56)
(1, 2)
(24232, 45645)
```

Sample Output:

```
7
6
1
11
```

113. Write a Python program to reverse all words of odd lengths.

Sample Input:

```
("The quick brown fox jumps over the lazy dog")
("Python Exercises")
```

Sample Output:

```
The quick brown fox jumps revo the yzal dog
nohtyP Exercises
```

114. Write a Python program to print letters from the English alphabet from a-z and A-Z.

Sample Input:

```
("Alphabet from a-z:")
```

("\nAlphabet from A-Z:")
Sample Output:
Alphabet from a-z:
a b c d e f g h i j k l m n o p q r s t u v w x y z
Alphabet from A-Z:
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

115. Write a Python program to generate and print a list of numbers from 1 to 10.
Sample Input:
range(1,10)
Sample Output:
[1, 2, 3, 4, 5, 6, 7, 8, 9]
['1', '2', '3', '4', '5', '6', '7', '8', '9']

116. Write a Python program to identify non-prime numbers between 1 and 100 (integers). Print the non-prime numbers.
Sample Input:
range(1, 101)
Sample Output:
Nonprime numbers between 1 to 100:
4
6
8
9
10
..
96
98
99
100

117. Write a Python program to make a request to a web page, and test the status code, and display the HTML code of the specified web page.
Sample Output:

```
Web page status: <Response [200]>
HTML code of the above web page:
<!doctype html>
<html>
<head>
<title>Example Domain</title>
<meta charset="utf-8" />
<meta http-equiv="Content-type" content="text/html; charset=utf-8" />
<meta name="viewport" content="width=device-width, initial-scale=1" />
</head>
<body>
<div>
<h1>Example Domain</h1>
<p>This domain is for use in illustrative examples in documents. You may use
this
domain in literature without prior coordination or asking for permission.</p>
<p><a href="https://www.iana.org/domains/example">More
information...</a></p>
</div>
</body>
</html>
```

118. In multiprocessing, processes are spawned by creating a Process object. Write a Python program to show the individual process IDs (parent process, process ID etc.) involved.

Sample Output:

```
Main line
module name: __main__
parent process: 23967
process id: 27986
function f
module name: __main__
parent process: 27986
process id: 27987
```

hello bob

119. Write a Python program to check if two given numbers are Co Prime or not. Return True if two numbers are Co Prime otherwise return false.
Sample Input:
(17, 13)
(17, 21)
(15, 21)
(25, 45)
Sample Output:
True
True
False
False

120. Write a Python program to calculate Euclid's totient function for a given integer. Use a primitive method to calculate Euclid's totient function.
Sample Input:
(10)
(15)
(33)
Sample Output:
4
8
20

121. Write a Python program to create a coded string from a given string, using a specified formula.
Replace all 'P' with '9', 'T' with '0', 'S' with '1', 'H' with '6' and 'A' with '8'
Original string: PHP
Coded string: 969
Original string: JAVASCRIPT
Coded string: J8V81CRI90

122. Write a Python program to check if a given string contains only lowercase or uppercase characters.

```
Original string: PHP
Coded string: True
Original string: javascript
Coded string: True
Original string: JavaScript
Coded string: False
```

123. Write a Python program to remove the first and last elements from a given string.

```
Original string: PHP
Removing the first and last elements from the said string: H
Original string: Python
Removing the first and last elements from the said string: ytho
Original string: JavaScript
Removing the first and last elements from the said string: avaScrip
```

124. Write a Python program to check if a given string contains two similar consecutive letters.

```
Original string: PHP
Check for consecutive similar letters! False
Original string: PHHP
Check for consecutive similar letters! True
Original string: PHPP
Check for consecutive similar letters! True
```

125. Write a Python program to reverse a given string in lower case.

```
Original string: PHP
Reverse the said string in lower case: php
Original string: JavaScript
Reverse the said string in lower case: tpircsavaj
Original string: PHPP
```

Reverse the said string in lower case: pphp

126. Write a Python program to convert the letters of a given string (same case-upper/lower) into alphabetical order.
Original string: PHP
Convert the letters of the said string into alphabetical order: HPP
Original string: javascript
Convert the letters of the said string into alphabetical order: aacijprstv
Original string: python
Convert the letters of the said string into alphabetical order: hnopty

127. Write a Python program to check whether the average value of the elements of a given array of numbers is a whole number or not.
Original array:
1 3 5 7 9
Check the average value of the elements of the said array is a whole number or not: True
Original array:
2 4 2 6 4 8
Check the average value of the elements of the said array is a whole number or not:
False

128. Write a Python program to remove all vowels from a given string.
Original string: Python
After removing all the vowels from the said string: Pythn
Original string: C Sharp
After removing all the vowels from the said string: C Shrp
Original string: JavaScript
After removing all the vowels from the said string: JvScrpt

129. Write a Python program to get the index number of all lower case letters in a given string.

Original string: Python
Indices of all lower case letters of the said string: [1, 2, 3, 4, 5] Original string: JavaScript
Indices of all lower case letters of the said string: [1, 2, 3, 5, 6, 7, 8, 9] Original string: PHP
Indices of all lower case letters of the said string: []

130. Write a Python program to check whether a given month and year contains a Monday 13th.
Month No.: 11 Year: 2022
Check whether the said month and year contains a Monday 13th.: False
Month No.: 6 Year: 2022
Check whether the said month and year contains a Monday 13th.: True

131. Write a Python program to count the number of zeros and ones in the binary representation of a given integer.
Original number: 12
Number of ones and zeros in the binary representation of the said number:
Number of zeros: 2, Number of ones: 2
Original number: 1234
Number of ones and zeros in the binary representation of the said number:
Number of zeros: 6, Number of ones: 5

132. Write a Python program to find all the factors of a given natural number.
Factors:
The factors of a number are the numbers that divide into it exactly. The number 12 has six factors:
1, 2, 3, 4, 6 and 12 If 12 is divided by any of the six factors then the answer will be a whole number. For example:
12 / 3 = 4
Original Number: 1
Factors of the said number: {1}
Original Number: 12
Factors of the said number: {1, 2, 3, 4, 6, 12}

Original Number: 100
Factors of the said number: {1, 2, 4, 100, 5, 10, 50, 20, 25}

133. Write a Python program to compute the sum of the negative and positive numbers in an array of integers and display the largest sum.
Original array elements: {0, 15, 16, 17, -14, -13, -12, -11, -10, 18, 19, 20}
Largest sum - Positive/Negative numbers of the said array: 105
Original array elements: {0, 3, 4, 5, 9, -22, -44, -11}
Largest sum - Positive/Negative numbers of the said array: -77

134. Write a Python program that alternates the case of each letter in a given string, with the first letter in the string being uppercase.
Original string: Python Exercises
After alternating the case of each letter of the said string: PyThOn ExErCiSeS
Original string: C# is used to develop web apps, desktop apps, mobile apps, games and much more.
After alternating the case of each letter of the said string: C# iS uSeD tO dEvElOp WeB aPpS, dEsKtOp ApPs, MoBiLe ApPs, GaMeS aNd MuCh MoRe.

135. Write a Python program that calculates the Least Common Multiple (LCM) of more than two numbers. The numbers should be taken from a given list of positive integers.
From Wikipedia,
In arithmetic and number theory, the least common multiple, lowest common multiple, or smallest common multiple of two integers a and b, usually denoted by lcm(a, b), is the smallest positive integer that is divisible by both a and b. Since division of integers by zero is undefined, this definition has meaning only if a and b are both different from zero. However, some authors define lcm(a,0) as 0 for all a, which is the result of taking the lcm to be the least upper bound in the lattice of divisibility.
Original list elements: [4, 6, 8]
LCM of the numbers of the said array of positive integers: 24
Original list elements: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
LCM of the numbers of the said array of positive integers: 2520

Original list elements: [48, 72, 108]
LCM of the numbers of the said array of positive integers: 432

136. Write a Python program to reverse all words of odd lengths.
Original string: The quick brown fox jumps over the lazy dog
Reverse all the words of the said string which have odd length: ehT kciuq nworb xof spmuj over eht lazy god
Original string: Python Exercises
Reverse all the words of the said string which have odd length: Python sesicrexE

137. Write a Python program to find the longest common ending between two given strings.
Original strings: running ruminating
Common ending between said two strings: ing
Original strings: thisisatest testing123testing
Common ending between said two strings:

138. Write a Python program to reverse the binary representation of a given number and convert the reversed binary number into an integer.
Original number: 13
Reverse the binary representation of the said integer and convert it into an integer: 11
Original number: 145
Reverse the binary representation of the said integer and convert it into an integer: 137
Original number: 1342
Reverse the binary representation of the said integer and convert it into an integer: 997

139. Write a Python program to find the closest palindrome number to a given integer. If there are two palindrome numbers in absolute distance return the smaller number.
Original number: 120

```
Closest Palindrome number of the said number: 121
Original number: 321
Closest Palindrome number of the said number: 323
Original number: 43
Closest Palindrome number of the said number: 44
Original number: 1234
Closest Palindrome number of the said number: 1221
```

140. Write a Python program to convert all items in a given list to float values.

```
Original list:
['0.49', '0.54', '0.54', '0.54', '0.54', '0.54', '0.55', '0.54', '0.54', '0.54', '0.55', '0.55',
'0.55', '0.54', '0.55', '0.55', '0.54', '0.55', '0.55', '0.54']
List of Floats:
[0.49, 0.54, 0.54, 0.54, 0.54, 0.54, 0.55, 0.54, 0.54, 0.54, 0.55, 0.55, 0.55, 0.54,
0.55, 0.55, 0.54, 0.55, 0.55, 0.54]
```

141. Write a Python program to get the domain name using PTR DNS records from a given IP address.

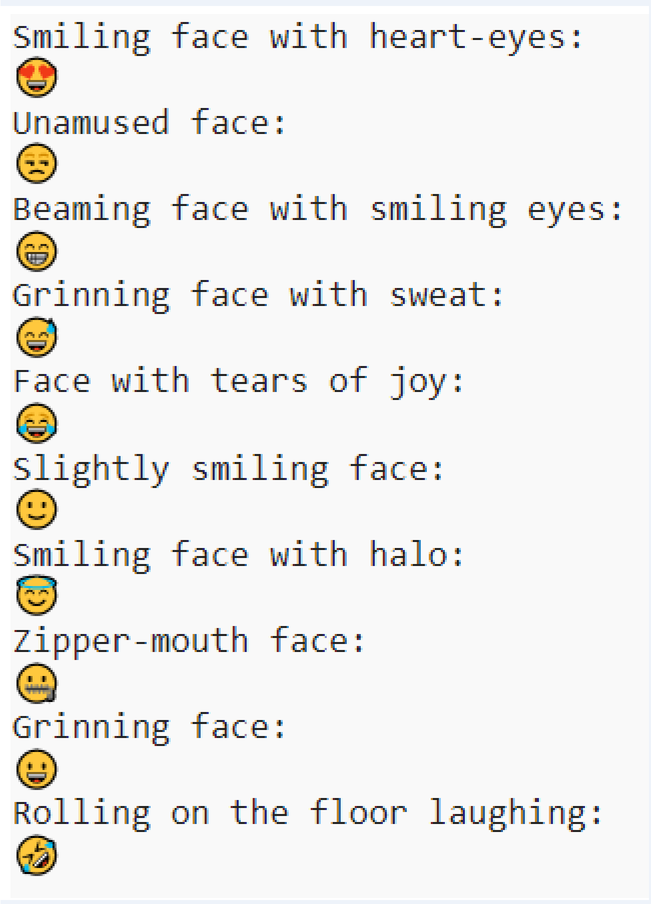
```
Domain name using PTR DNS:
dns.google
ec2-13-251-106-90.ap-southeast-1.compute.amazonaws.com
dns.google
ec2-23-23-212-126.compute-1.amazonaws.com
```

142. Write a Python program to check if every consecutive sequence of zeroes is followed by a consecutive sequence of ones of the same length in a given string. Return True/False.

```
Original sequence: 001011
Check if every consecutive sequence of zeroes is followed by a consecutive
sequence of ones in the said string:
False
Original sequence: 01010101
Check if every consecutive sequence of zeroes is followed by a consecutive
sequence of ones in the said string:
```

```
True
Original sequence: 00
Check if every consecutive sequence of zeroes is followed by a consecutive
sequence of ones in the said string:
False
Original sequence: 000111000111
Check if every consecutive sequence of zeroes is followed by a consecutive
sequence of ones in the said string:
True
Original sequence: 00011100011
Check if every consecutive sequence of zeroes is followed by a consecutive
sequence of ones in the said string:
False
Original sequence: 0011101
Check if every consecutive sequence of zeroes is followed by a consecutive
sequence of ones in the said string:
False
```

143. Write a Python program to print Emojis using Unicode characters or CLDR (Common Locale Data Repository) short names.



```
Smiling face with heart-eyes:
😍
Unamused face:
😒
Beaming face with smiling eyes:
😁
Grinning face with sweat:
😅
Face with tears of joy:
😂
Slightly smiling face:
🙂
Smiling face with halo:
😇
Zipper-mouth face:
🤐
Grinning face:
😀
Rolling on the floor laughing:
🤣
```

144. Write a Python program to convert integer to string.
Sample Input:
language = "Python"
version = 3.6
sample Output:
Language: Python, Version: 3.6

145. Write a Python program to find the largest and smallest digits of a given number.
Original Number: 9387422
Largest Digit of the said number: 9
Smallest Digit of the said number: 2
Original Number: 500
Largest Digit of the said number: 5

Smallest Digit of the said number: 0
Original Number: 231548
Largest Digit of the said number: 8
Smallest Digit of the said number: 1

146. A Python list contains two positive integers. Write a Python program to check whether the cube root of the first number is equal to the square root of the second number.

Sample Data:

([8, 4]) -> True
([64, 16]) -> True
([64, 36]) -> False

147. A Python list contains three positive integers. Write a Python program to check whether the sum of the digits in each number is equal or not. Return true otherwise false.

Sample Data:

([13, 4, 22]) -> True
([-13, 4, 22]) -> False
([45, 63, 90]) -> True

148. A Python list contains some positive integers. Write a Python program to count the numbers that are greater than the previous number on the list.

Sample Data:

([1, 4, 7, 9, 11, 5]) -> 4
([1, 3, 3, 2, 2]) -> 1
([4, 3, 2, 1]) -> 0

149. Write a Python program that takes a positive integer and creates an N x N square filled with the integer N. Display the N x N square.

Sample Data:

(2) -> [[2, 2], [2, 2]]
(5) -> [[5, 5, 5, 5, 5], [5, 5, 5, 5, 5], [5, 5, 5, 5, 5], [5, 5, 5, 5, 5], [5, 5, 5, 5, 5]]

(-6) -> []

150. Write a Python program that takes a positive integer and calculates the cube root of the number until the number is less than three. Count the number of steps to complete the task.

Sample Data:

(3) -> 1
(39) -> 2
(10000) -> 2