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''. Write a Python function to find the first, second and third greatest digit in a
number.
 Sample Number: 6328
 Expected Output: 8, 6, 3'''

def greatest(n):
    for i in range(1,n+1):
        d = [int(d) for d in str(n)]
        d.sort(reverse=True)
        return d[0],d[1],d[2]

print(greatest(6328))
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''' 2. Find the numbers between 100 and 500, which are divisible by 3 and multiples of 5
using function in
 Python.'''

def diviBy3():
    for i in range(100,500+1):
        if(i%3==0  and i%5==0):
            print(i,end=" ")

diviBy3()
```

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''' 3. Write a Python function to add the squares of the even numbers between 1 and 50
(both included).'''

def squr():
    sum=0
    for i in range(1,51):
        if i%2==0:
            sum+=i**2
    print(sum)
squr()
```

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''' 4. Write a function that takes a string as input and returns the reversed string.
'''

def rev(s):
    return s[::-1]

s=input("Enter a String: ")
print(rev(s))
```

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''' 5. Write a function that takes a positive integer and returns the number of digits.
'''
def digit(n):
    c=0
    while(n>0):
        n=n//10
        c+=1
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    print(c)


n=int(input("Enter a Number: "))
digit(n)
```

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''' 6. Define a function to check if a given string is a palindrome. Example: madam ↺
madam, racecar ↺
 racecar.'''

def palindrome(s):
    rev=s[::-1]
    if s==rev:
        print("Palindrome")
    else:
        print("Not Palindrome")

s=input("Enter a String: ")
palindrome(s)
```

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''' 7. Write a Python function to check whether an alphabet is a vowel or consonant.'''

def vowel(a):
    if a=='a' or a=='e' or a=='i' or a=='o' or a=='u':
        print("Vowel")
    else:
        print("Consonant")

a=input("Enter an Alphabet: ")
vowel(a)
```

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''' 8. Write a Python program that takes the name of a month as input and returns the
number of days in
 that month.
 Input: The name of the Month: February
 Output: No. of days: 28/29 days'''

def NOD(month):
    if month=='Jan' or 'Mar' or'May' or 'July' or'June' or 'Sept' or 'Nov':
        print("31 Days")
    elif month=='Feb':
        print("28 Days")
    else:
        print("30 Days")

month=input("Enter the Month")
NOD(month)
```

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''' 9. Write two functions, one of which converts a binary number to decimal and the other
one does the
 reverse.'''
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```python
def binary_to_decimal(binary):
    return int(binary, 2)

def decimal_to_binary(decimal):
    return bin(decimal)[2:]

print("Binary to Decimal:", binary_to_decimal("1010"))
print("Decimal to Binary:", decimal_to_binary(10))
```

```python
''' 13. Write a program that converts a Roman numeral to its integer equivalent.'''

def RTN(n):
    RN={'I': 1, 'V': 5, 'X': 10, 'L': 50,'C': 100, 'D': 500, 'M': 1000 }
    intPrev=0
    total=0

    for char in reversed(n):
        val=RN[char]

        if val<intPrev:
            total-=val
        else:
            total+=val

        intPrev=val
    print(total)

val=input("Enter a Roman Numeral: ").upper()
RTN(val)
```

```python
''' 14. Write a function to determine if a given number is an Armstrong number. '''

def AN(n):
    store=n
    sum=0
    for i in str(n):
        sum+=int(i)**len(str(n))
    if sum==store:
        print("YES")
    else:
        print("NO")
n=int(input("Enter a Number: "))
AN(n)
```

```python
''' 15. Create a function that returns the nth number in the Fibonacci sequence.'''

def fibo(n):
    if n <= 0:
        print("Invalid input. Enter a positive integer.")
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        return
    elif n == 1:
        print(0)
        return
    elif n == 2:
        print(1)
        return
    a, b = 0, 1

    for _ in range(3, n + 1):
        a, b = b, a + b

    print(b)
n = int(input("Enter the position (n) in the Fibonacci sequence: "))
fibo(n)
```

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'''16. Write a function to implement a basic calculator that can add, subtract, multiply,
and divide two
 numbers based on user input.'''

def cal(a,b,op):
    if op=='+':
        print(a+b)
    elif op=='-':
        print(a-b)

a=int(input("Enter a: "))
b=int(input("Enter b: "))
op=input("Enter operand: ")
cal(a,b,op)
```

```
''' 17. Create a function that takes a string and returns a new string where all the
vowels are removed.'''

def removeVowel(s):
    for char in str(s):
        if char=='a' or char=='i' or char=='o' or char=='u' or char=='e':
            continue
        print(char,end=" ")

s=input("Enter String: ")
removeVowel(s)
```

```
''' 19. Create a function to find the greatest common divisor (GCD) of two numbers using a
while loop.'''

def GCD(n,m):
    while m!=0:
        n,m=m,n%m
    print(n)
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n=int(input("Enter  number 1: "))
m=int(input("Enter  number 2: "))

GCD(n,m)
```

```
''' 20. Write a function to print all prime numbers between 1 and 100.'''

def prime(n):
    for n in range(1,101):
        c=0
        for i in range(1,n+1):
            if n%i==0:
                c+=1
        if c==2:
            print(n,end=" ")


prime(100)
```

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''' 21. Write a function to calculate the factorial of a number using a loop.'''

def fact(n):
    sum=1
    for i in range(1,n+1):
        sum*=i

    print(sum)

n=int(input("Enter n: "))
fact(n)
```

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''' 22. Create a function that prints the first 10 terms of an arithmetic progression.'''

def AP(a,d):
    for i in range(1,11):
        ap=a+(i-1)*d
        print(ap,end=" ")


AP(1,2)
```

```
''' 23. Write a function that returns the index of each vowel in a string using a for
loop.'''

def vowelIndex(n):
    for i in range(len(n)):
        if n[i] in 'aeiouAEIOU':
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            print(n[i],i)

n = input("Enter a string: ")
vowelIndex(n)
```

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'''24. Write a function that removes all punctuation from a string.'''

import string

def removePunc(s):
    res=' '.join(char for char in s if char not in string.punctuation)
    print(res)

s=input("Enter String: ")
removePunc(s)
```

```
''' 25. Write a function to check if two numbers are coprime.'''

def coPrimes(n,m):
    while m!=0:
        n,m=m,n%m
        print(n)

    if n==1:
        print("Co-Primes")
    else:
        print("No")

n=int(input("Enter  number 1: "))
m=int(input("Enter  number 2: "))

coPrimes(n,m)
```

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'''26. Write a function that replaces all vowels in a string with the character ”*”.'''

def replace(s):
    res=""
    for char in str(s):
        if char=='a' or char=='e' or char=='i' or char=='o' or char=='u':
            res+="*"
        else:
            res+=char
    print(res)


s=input("Enter a String: ")
replace(s)
```

```
''' 27. Write a function that takes a positive number as an input and converts the
respective digits into corre
sponding text. Example: 85 → eight five, 123 → one two three.'''

def number_to_text(num):
    digit_to_text = {
        '0': 'zero', '1': 'one', '2': 'two', '3': 'three',
        '4': 'four', '5': 'five', '6': 'six', '7': 'seven',
        '8': 'eight', '9': 'nine'
    }
    num_str = str(num)
    text_representation = [digit_to_text[digit] for digit in num_str]
    return ' '.join(text_representation)

print(number_to_text(85))
print(number_to_text(123))
```

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''' 28. Write a function that takes a string of lowercase alphabets as inputs and gives an
output by shifting
 them by one letter ahead. Note that if the string has ’z’, then it will be treated as
’a’. Example: python
 → qzuipo, pythonzabc → qzuipobbcd.'''

def shift_letters(input_string):
    shifted_string = ''.join(
        chr((ord(char) - ord('a') + 1) % 26 + ord('a')) if char.isalpha() else char
        for char in input_string
    )
    return shifted_string

# Example usage:
print(shift_letters("python"))      # Output: qzuipo
print(shift_letters("pythonzabc"))  # Output: qzuipobbcd
```

```
''' 29. Write a function to check if a given number is a perfect number. '''

def perfectNum(n):
    sum=0
    for i in range(1,n):
        if n%i==0:
            sum+=i
    if sum==n:
            print("Perfect Number.")
    else:
            print ("No")

n=int(input("Enter a Number: "))
perfectNum(n)
```

```
''' 30. Write a function that inputs a number and returns the product of digits of that
number'''

def POD(n):
    product=1
    if n<10:
        print(n)
    else:
        while n>0:
            digit=n%10
            product*=digit
            n=n//10
            print(product)

n=int(input("Enter a Number: "))
POD(n)
```