Name: Ayush Sah

UID: 2019450046

1. Input a number and display it is even or odd

Program:

```
# Input a number and display it is even or

repeat = True
while repeat:

  num = int(input("Enter a number: "))

  if num%2 == 0:
    print("It is Even Number.")

  else:
    print("It is Odd Number.")

  repeat = input("Do you want to repeat ('Y','N'):  ")

  if repeat in ['y', 'Y', 'yes', 'Yes', 'YES']:
    continue

  else:
    repeat = False
```
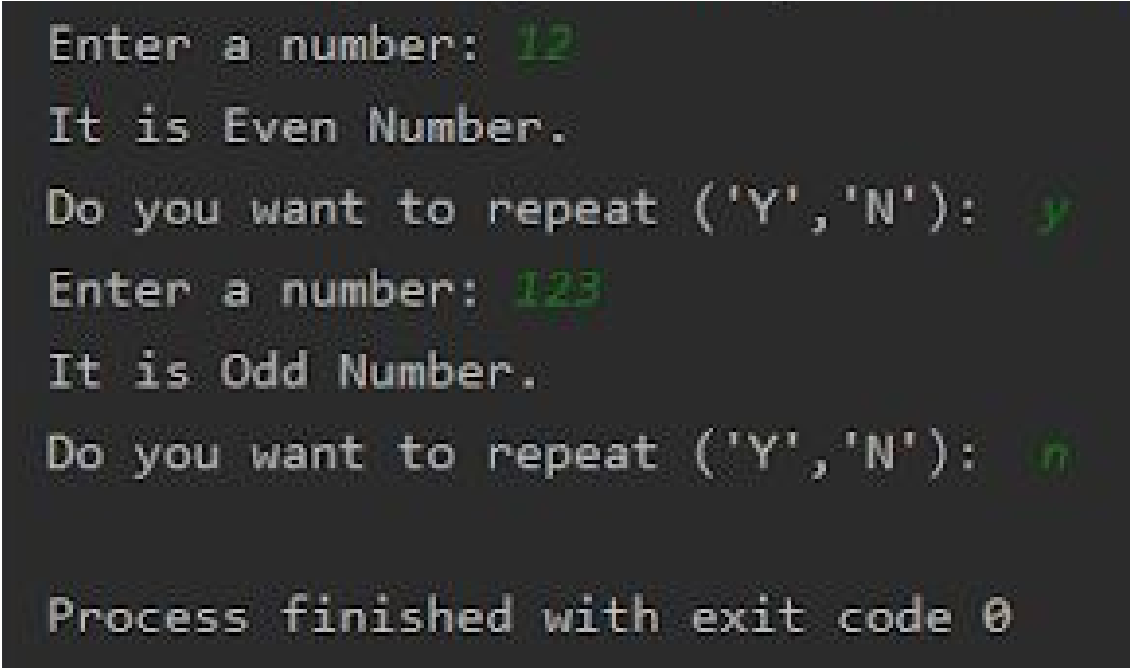
Output:

```
Enter a number: 12
It is Even Number.
Do you want to repeat ('Y','N'):  y
Enter a number: 123
It is Odd Number.
Do you want to repeat ('Y','N'):  n


Process finished with exit code 0
```

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2.   Display prime number between 1 and 100

Program:
```
# Display prime number between 1 and 100
import math
i = 1
print("Prime Numbers are: ")

while i <= 100:
    flag = True
    for j in range(2, int(math.sqrt(i)) + 1):
        if i % j == 0:
            flag = False

    if i > 1:
        if flag:
            print(i, " ")

    i += 1
```
Output:

```
Prime Numbers are:
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97

Process finished with exit code 0
```

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3.   Input marks of 5 subject and display result

Program:

```
# Input marks of 5 subject and display result
repeat = True
while repeat:
    subjects = ["English", "Science", "Maths", "History", "Geography"]
    total = 0
    result = "Passed"

    for i in subjects:
        print("Enter marks for ", i, "(out of 100):")
        mark = int(input())
        if mark < 40:
            result = "Failed"
        total += mark

     print("\nThe student ", result, " total marks scored by student is ", total, "
and the percentage scored by student is ", (total / 500) * 100)

    repeat = input("\nDo you want to repeat ('Y','N'):  ")
    if repeat in ['y', 'Y', 'yes', 'Yes', 'YES']:
        continue
    else:
        repeat = False
```

Output:

```
Enter marks for  English (out of 100):
91
Enter marks for  Science (out of 100):
95
Enter marks for  Maths (out of 100):
92
Enter marks for  History (out of 100):
88
Enter marks for  Geography (out of 100):
94


The student  Passed  total marks scored by student is  460  and the percentage scored by student is  92.0

Do you want to repeat ('Y','N'):  n

Process finished with exit code 0
```

4.   To check if the number is Armstrong or not
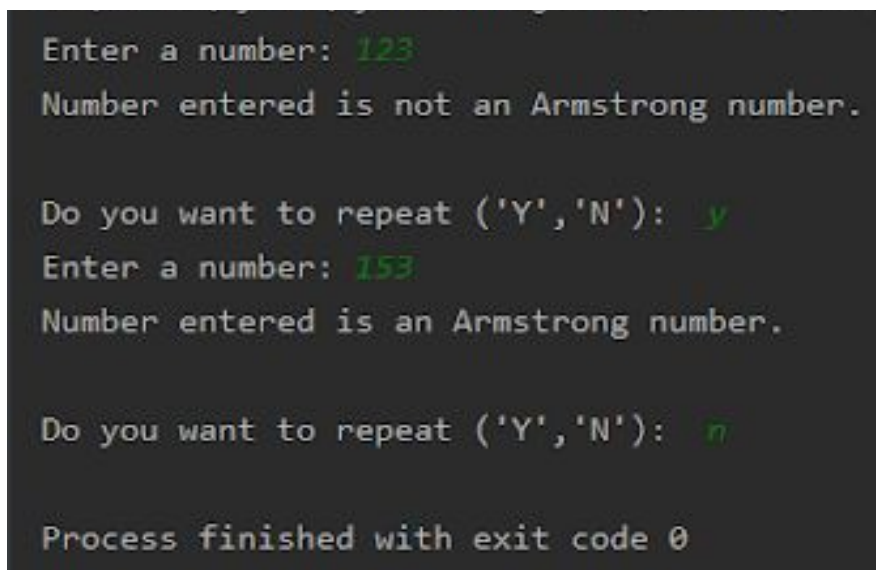
Program:

```
# To check if the number is Armstrong or not
repeat = True
while repeat:
    num = int(input("Enter a number: "))
    power = 0
    temp = num
    while temp > 0:
        power += 1
        temp = int(temp / 10)

    sum = 0
    temp = num
    while temp > 0:
        sum += int((temp % 10) ** power)
        temp = int(temp / 10)

    if sum == num:
        print("Number entered is an Armstrong number.")
    else:
        print("Number entered is not an Armstrong number.")

    repeat = input("\nDo you want to repeat ('Y','N'):  ")
    if repeat in ['y', 'Y', 'yes', 'Yes', 'YES']:
        continue
    else:
        repeat = False
```

`Output:

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5.   To check whether the character entered is vowel or consonant

Program:
```
# To check whether the character entered is vowel or consonant

repeat = True
while repeat:

    ch = input("Enter an Alphabet: ")

    vowels = ['A', 'E', 'I', 'O', 'U', 'a', 'e', 'i', 'o', 'u']

    found = False

    for i in vowels:
        if i == ch:
            found = True

    if found:
        print("The alphabet you entered is a vowel.")
    else:
        print("The alphabet you entered is a consonant.")

    repeat = input("\nDo you want to repeat ('Y','N'):  ")
    if repeat in ['y', 'Y', 'yes', 'Yes', 'YES']:
        continue
    else:
        repeat = False
```
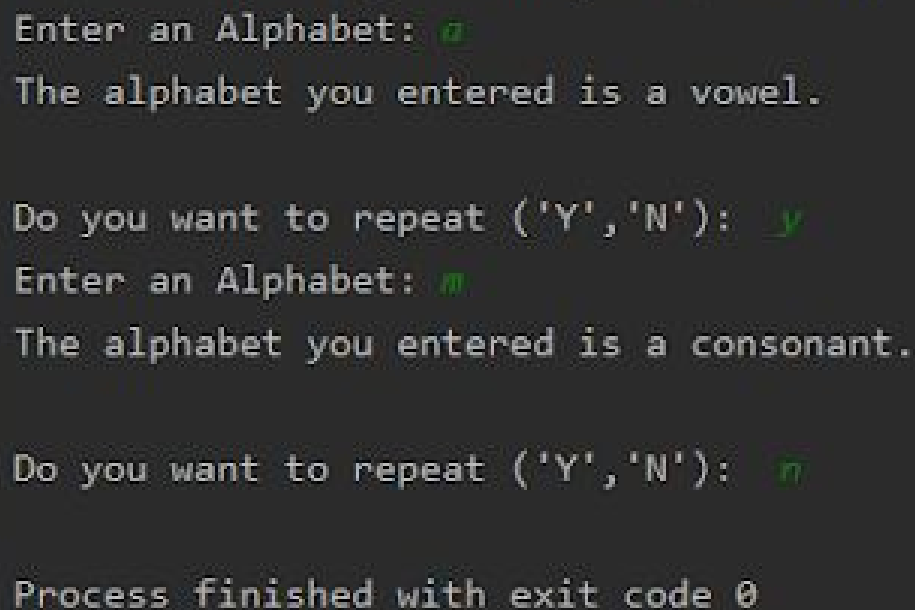
Output:

```
Enter an Alphabet: a
The alphabet you entered is a vowel.


Do you want to repeat ('Y','N'):  y
Enter an Alphabet: m
The alphabet you entered is a consonant.


Do you want to repeat ('Y','N'):  n


Process finished with exit code 0
```
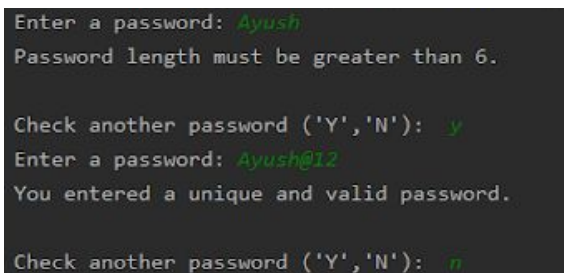
6.   WAP to validate a password

Program:

```
# WAP to validate a password
repeat = True
while repeat:
    password = input("Enter a password: ")
    special = ['~', '!', '@', '#', '$', '%', '^', '&', '*', '(', ')', '\', '\"', ':', ';', '<', '>',
'/', '?', '{',
             '}',
             '[', ']']
    lower, upper, symbol, digit = 0, 0, 0, 0
    for a in password:
        if a.islower():
            lower += 1
        if a.isupper():
            upper += 1
        for s in special:
            if a == s:
                symbol += 1
        if a.isdigit():
            digit += 1
    if len(password) < 6:
        print("Password length must be greater than 6.")
    elif len(password) > 16:
        print("Password length must be lower than 16")
    elif lower == 0:
        print("Lower Case character missing.")
    elif upper == 0:
        print("Upper Case character missing.")
    elif symbol == 0:
        print("Special character missing.")
    elif digit == 0:
        print("Digit missing.")
    else:
        print("You entered a unique and valid password.")
    repeat = input("\nCheck another password ('Y','N'):  ")
    if repeat in ['y', 'Y', 'yes', 'Yes', 'YES']:
        continue
    else:
        repeat = False
```

Output: