

Assignment -I(Priyanka Thakare)

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1 Selection Statement

In []: 1.WAP to check whether a number is even or odd

```
In [31]: n=int(input())
        if n%2==0:
            print("Number is Even")
        else:
            print("Number is Odd")
```

89

Number is Odd

In []: 2.WAP to check whether a person is eligible for voting or not.

```
In [30]: age=18
        if age>=18:
            print("You are eligible for voting")
        else:
            print("You are eligible for voting")
```

You are eligible for voting

In []: 3.WAP to accept Cost Price from user and ask whether the user is a student or not. If the user is student and cost price is greater than 500, give discount of 10% ELSE discount will be 5%. If user is not student and cost price is greater 500 then give discount of 8% ELSE discount will be 2%. (Take all inputs from USER)

```
In [ ]: cost_price=int(input("Enter the cost price: "))
        check=input("Whether student or not: yes/No")
        print(check)
        if check=="Yes" and cost_price>500:
            print("Discount will be 10%")
        else:
            print("Discount will be 5%")
```

```

if check=='No' and cost_price>500:
    print("Discount will be 8%")
else:
    print("Discount will be 2%")

```

In []: 4. WAP to check whether Number is positive or negative or ZERO.

```

In [29]: n=int(input("enter the number to check whether it is negative,positive or zero: "))
        if n<0:
            print("Number is negative")
        elif n>0:
            print("Number is positive")
        else:
            print("Number is zero")

```

enter the number to check whether it is negative,positive or zero: -5
Number is negative

In []: 5.WAP a program to accept Percentage from user and check the GRADE A. Above 70% - Grade A B. Between 60% to 70% - Grade B+. C. Between 45% to 60% - Grade B. D. Between 35% to 45% - Grade C. E. Less than 35% - Fail

```

In [27]: per=float(input("Enter the percentage to check the GRADE: "))
        #print(per)
        if per>70:
            print("GRADE A")
        elif per>60 and per<=70:
            print("GRADE B+")
        elif per>45 and per<=60:
            print("GRADE B")
        elif per>=35 and per<=45:
            print("GRADE C")
        else:
            print("FAIL")

```

Enter the percentage to check the GRADE: 45
GRADE C

In []: 6. Accept three numbers from user and find out largest number among three and also find out whether that three numbers are equal or not.(else if ladder)

```

In [26]: a=int(input("Enter first number "))
        b=int(input("Enter second number "))

```

```

c=int(input("Enter third number "))
#To find the greatest number among them

if (a>b) and (a>c):
    largest=a
else:
    if b>c and b>a:
        largest=b
    else:
        largest=c
print("The greatest number is",largest)

```

```

Enter first number 6
Enter second number 2
Enter third number 3
The greatest number is 6

```

2 Branching Statements

In []: 1.WAP using following menus- Choice-1: Accept number and find out square and cube. Choice-2: Check whether the given year is LEAP or not. If user enters wrong choice appropriate message should get displayed.

```

In [3]: print("Choice 1: To find the square and cube of a number\n")
print("Choice 2: To check whether the entered year is a leap year or not\n")
choice=int(input("Enter choice: "))
#print(choice)
if choice==1:
    n=int(input("Enter the number to print square and cube: "))
    print("Square of number is", n*n)
    print("Cube of a number is",n**3)
elif choice==2:
    year=int(input("Enter the year to check whether it is even or not: "))
    if year%4==0 or (year%400==0 or year%100==0):
        print("Year is leap year")
    else:
        print("Year is not a leap year")
else:
    print("Entered wrong choice")

```

Choice 1: To find the square and cube of a number

Choice 2: To check whether the entered year is a leap year or not

```

Enter choice: 3
Entered wrong choice

```

In []: 2.WAP using switch case for arithmetic operation on two numbers, if user enters an operator as choice, the appropriate operation should perform. If user enters wrong choice appropriate message should get displayed. i.e. + is for addition - is for subtraction

```
In [ ]: a=10
        b=6
        print("Enter the choice to perform operations as + or - ")
        choice=input()
        sum=0
        sub=0
        for i in choice:
            if choice=='+':
                sum=a+b
                print("Addition: ",sum)
                break
            if choice=='-':
                sub=a-b
                print("Subtraction: ",sub)
                break
            if choice!='+' and choice!='-':
                print("Entered wrong choice\n")
                print("Enter '+' for addition and '-' for subtraction")
```

Enter the choice to perform operations as + or -

3 Looping Statements

In []: 1. WAP to check whether a number is prime or not.

```
In [3]: n=int(input("Enter the number to check whether it is prime or not"))
        count=0
        for i in range(1,n+1):
            if n%i==0:
                count=count+1
        if (count==2):
            print("Entered number is prime number")
        else:
            print("Entered number is not a prime number")
```

Enter the number to check whether it is prime or not6
Entered number is not a prime number

In []: 2.WAP to accept a number from user and find out sum of even digits from that given number.

```

In [20]: n=int(input("enter the number"))
        if (n % 2 == 0) :
            isEven = True
        else:
            isEven = False

        sumOdd = 0
        sumEven = 0

        while (n != 0) :
            if (isEven):
                sumEven += n % 10
            else:
                sumOdd += n % 10

            # Invert state
            isEven = not isEven

            n =n//10

        #print( "Sum odd = " , sumOdd )
        print("Sum even = " ,sumEven)

```

enter the number1324
Sum even = 7

In []: 4.WAP to print the following on output screen using jumping statements

```

In [17]: rows=4
        for i in range(4):

            for j in range(1):
                if i>=2:
                    rows=rows-1
                    print(i+2," ",end='')
                    print(rows+1," ",end='')

                else:
                    print(i+1," ",end='')
                    print(rows+1," ",end='')
                    rows=rows-1
            print(" ")

```

```

1 5
2 4
4 2

```

5 1

In []: 6. GCD of two numbers

```
In [ ]: #gcd of two numbers
n1=int(input("Enter First number: "))
n2=int(input("Enter second number: "))
i=1
while(n1>=i and n2>=i):
    if(n1%i==0 and n2%i==0):
        gcd=i
    i=i+1
print("Gcd of two numbers is",gcd)
```

In [15]: a=[1,4,6] # create a list of three nos

```
def gcd(n1,n2):
    while n2>0:
        n1,n2=n2,n1%n2
    return n1
n=a[0]
for i in a[1:]:
    n=gcd(n,i)
print(n)
```

1

In []: 7.Find all pythagorean triplet below the given limit

```
In [23]: ### Pythagorean triplet means
#a=m**2-n**2
#b=2*m*n
#c**2=a**2+b**2
limit=int(input("Enter the limit to print the Pythagorean triplet "))
c=0
m=2
while c<limit:
    for n in range(1,m+1):
        a=m*m-n*n
        b=2*m*n
        c=m*m+n*n

        if c>limit:
            break
        if a==0 or b==0 or c==0:
            break
        print(a,b,c)
    m=m+1
```

```
Enter the limit to print the Pythagorean triplet 20
3 4 5
8 6 10
5 12 13
15 8 17
12 16 20
```

```
In [ ]: 8.a) WAP to convert decimal to binary /binary to octal
```

```
In [8]: n=int(input("Enter number to convert it into binary: "))
        binary=0
        rem=0
        i=1
        while n>0:
            rem = int(n%2)
            binary = (rem*i)+ binary      #adding the remainder on left of binary
            n = n/2
            i= i*10                       #update i, so that on next iteration, # rem
        print(binary)
```

```
Enter number to convert it into binary: 5
101
```

```
In [ ]: b) Binary to octal
```

```
In [10]: #Simply pass the binary number example 5-0b101
        print("Octal number : ",oct(0b101))
```

```
Octal number : 0o5
```