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Q1:

Code:

# this programs calculate the npr of the given number

```
def factorial(num):
```

```
    fact = 1
```

```
    for i in range(1,num+1):
```

```
        fact = fact * i
```

```
    return fact
```

```
def npr():
```

```
    n = int(input("enter the value for n:"))
```

```
    r = int(input("enter the value for r:"))
```

```
    N = factorial(n)
```

```
    R = factorial(n-r)
```

```
    result = N/R
```

```
    return result,n,r
```

```
npr,n,r = npr()
```

```
print("npr for",n,'and',r,"is:",npr)
```

output:

```
enter the value for n:5
enter the value for r:4
npr for 5 and 4 is: 120.0
```

---

Q2:

# this program give us the factors of the given number

```
def factor():
```

```
num = int(input("enter number:"))  
for i in range(2,num):  
    if num % i == 0:  
        print(i,end=" ")  
factor()
```

output:

```
enter number:12  
2 3 4 6
```

Q3:

# this program gives us the sum number that are divisible by 3 and 9

```
def Sum():  
    num = 1  
    add = 0  
    i = 0  
    while i < 10:  
        if num % 3 == 0 and num % 9 == 0:  
            add = num + add  
            i+=1  
            num+=1  
        else:  
            num+=1  
    return add  
add = Sum()  
print("the sum of first 10 num which are divisible by 3 and 9 is:",add)
```

output:

---

```
the sum of first 10 num which are divisible by 3 and 9 is: 495
```

Q4:

# this program calculate us the fibonacci numbers

```
def fibonacci(num):
```

```
    a = 0
```

```
    b = 1
```

```
    for i in range(num):
```

```
        print(a)
```

```
        add = a + b
```

```
        a = b
```

```
        b = add
```

```
num = int(input("enter number till which you want to calculate: "))
```

```
fibonacci(num)
```

output:

---

```
enter number till which you want to calculate: 15
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
```

Q5:

Code1:

```
def vote(bev):
```

```
    coff =0
```

```
    tea =0
```

```
orange =0
juice = 0
if bev == 1:
    coff +=1
elif bev == 2:
    tea+=1
elif bev == 3:
    orange+= 1
elif bev == 4:
    juice+= 1
return coff, tea, orange, juice
```

```
def favBev():
    Coff = 0
    Tea = 0
    Orange = 0
    Juice = 0
    counter = 1
    print("Choose your favourite beverage from the following list")
    print("1.Coffee  2.Tea  3.Orange  4.Juice")
    beverage = 0
    while beverage != -1:
        coff, tea, orange, juice = vote(beverage)
        Coff+=coff
        Tea+=tea
        Orange+=orange
        Juice+=juice

        beverage = int(input("Please input the favourite beverage of person#{}. Choose 1,2,3,4 from the
above menu or -1 to exit the program:".format(counter)))
```

```
counter+=1
```

```
return Coff, Tea ,Orange , Juice
```

```
coff, tea ,orange , juice = favBev()
```

```
print("""Beverage      Name of votes
```

```
*****""")
```

```
print('1.Coffee',"      ",coff)
```

```
print('2.Tea',"        ",tea)
```

```
print('3.Orange',"      ",orange)
```

```
print('4.Juice',"       ",juice)
```

```
code2:
```

```
def favBev():
```

```
    Coff = 0
```

```
    Tea = 0
```

```
    Orange = 0
```

```
    Juice = 0
```

```
    counter = 1
```

```
    print("Choose your favourite beverage from the following list")
```

```
    print("1.Coffee  2.Tea  3.Orange  4.Juice")
```

```
    beverage = 0
```

```
    while beverage != -1:
```

```
        if beverage == 1:
```

```
            Coff+=1
```

```
        elif beverage ==2:
```

```
            Tea+=1
```

```
elif beverage == 3:
```

```
    Orange += 1
```

```
elif beverage == 4:
```

```
    Juice +=1
```

```
    beverage = int(input("Please input the favourite beverage of person#{}. Choose 1,2,3,4 from the  
above menu or -1 to exit the program:".format(counter)))
```

```
    counter+=1
```

```
    return Coff, Tea ,Orange , Juice
```

```
coff, tea ,orange , juice = favBev()
```

```
print("""Beverage      Name of votes
```

```
*****""")
```

```
print('1.Coffee',"      ",coff)
```

```
print('2.Tea',"        ",tea)
```

```
print('3.Orange',"      ",orange)
```

```
print('4.Juice',"       ",juice)
```

output:

```
Choose your favourite beverage from the following list
1.Coffee 2.Tea 3.Orange 4.Juice
Please input the favourite beverage of person#1. Choose 1,2,3,4 from the above menu or -1 to exit the program:1
Please input the favourite beverage of person#2. Choose 1,2,3,4 from the above menu or -1 to exit the program:2
Please input the favourite beverage of person#3. Choose 1,2,3,4 from the above menu or -1 to exit the program:3
Please input the favourite beverage of person#4. Choose 1,2,3,4 from the above menu or -1 to exit the program:2
Please input the favourite beverage of person#5. Choose 1,2,3,4 from the above menu or -1 to exit the program:2
Please input the favourite beverage of person#6. Choose 1,2,3,4 from the above menu or -1 to exit the program:-1
Beverage      Name of votes
*****
1.Coffee      1
2.Tea         3
3.Orange      1
4.Juice       0
```

EXTRA TASK

```
num1 = int(input('enter number'))
```

```
num2 = int(input('enter number'))
```

```
num = 1
```

```
mod = 1
```

```
if num>num2:
```

```
    Max = num1
```

```
else:
```

```
    Max = num2
```

```
if num>num2:
```

```
    Min = num2
```

```
else:
```

```
    Min = num1
```

```
while num <= Max:
```

```
    if num < Max and num > Min:
```

```
        if num == mod:
```

```
            print(num)
```

```
            num+=1
```

```
            mod = 2
```

```
        elif num % mod == 0:
```

```
            num+=1
```

```
            mod=2
```

```
        else:
```

```
            mod+=1
```

```
    else:
```

```
        num+=1
```

output:

```
enter number5
enter number15
7
11
13
```

