ACM Tasks

Set - 2

Crypto challenges

Implementation :

Greatest common divisor :

```
def GCD(x,y):
    while y>0:
        x , y = y , (x % y)
    return x

x = int(input("Enter the first number :"))
y = int(input("Enter the second number :"))

print("the gcd of two numbers is",GCD(x,y))
```

```
Enter the first number :2
Enter the second number :6
the gcd of two numbers is 2
```

Extended GCD

```python
x = int(input("Enter the first number :"))
y = int(input("Enter the second number :"))

def xgcd(a,b):
    a,b = max(a,b) , min(a,b)


    p = [-1,-1]
    q = [a,b]
    r = [1,0]
    s = [0,1]

    p.append(q[-2]//q[-1])
    q.append(q[-2] % q[-1])
    r.append(r[-2] - p[-1] * r[-1])
    s.append(s[-2] - p[-1] * s[-1])

    return r[-2] , s[-2]

print(xgcd(x,y))
```

```
Enter the first number :77
Enter the second number :30
(0, 1)
```