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Lab 3

Task 1: Caesar cipher using python

Python Code:

```python
def encrypt(text,s):
    result = ""
    # transverse the plain test
    for i in range(len(text)):
        char = text[i]
        # Encrypt uppercase characters in plain text
        if (char.isupper()):
            result += chr((ord(char) + s-65) % 26 + 65)
            # Encrypt lowercase characters in plain text
        else:
            result += chr((ord(char) + s -97) %26 +97)
    return result

#check the above function
text = "CEASER CIPHER DEMO"
s = 4
print("Plain Text: " + text)
print("Shift pattern : " + str(s))
print("Cipher: " + encrypt(text,s))
```

Output:

```
Plain Text: CEASER CIPHER DEMO
Shift pattern : 4
Cipher: GIEWIVrGMTLIVrHIQS
```

Task 2: Brute Force Caesar Cipher using Python

Python Code:

```python
message = 'MVGRZUDPULVJKZDVRWKVIKZDVZMVUFEVDPJVEKVETVSLK
TFDDZKKVUEFTIZDVREUSRUDZJKRBVJZMVDRUVRWVNZMV
YRUDPJYRIVFWJREUBZTBVUZEDPWRTVSLKZMVTFDVKYIFL
XYNVRIVKYVTYRDGZFEJDPWIZVEUJREUNVCCBVVGFEWZXY
KZEXKZCKYVVEUNVRIVKYVTYRDGZFEJNVRIVKYVTYRDGZF
EJEFKZDVWFICFJVIJTRLJVNVRIVKYVTYRDGZFEJFWKYVNFI
CUZMVKRBVEDPSFNJREUDPTLIKRZETRCCJPFLSIFLXYKDVW
RDVREUWFIKLEVREUVMVIPKYZEXKYRKXFVJNZKYZKZKYRE
BPFLRCCSLKZKJSVVEEFSVUFWIFJVJEFGCVRJLIVTILZJVZTF
EJZUVIZKRTYRCCVEXVSVWFIVKYVNYFCVYLDREIRTVREUZR
ZEKXFEERCFJVNVRIVKYVTYRDGZFEJDPWIZVEUJREUNVCC'
LETTERS = 'ABCDEFGHIJKLMNOPQRSTUVWXYZ'

for key in range(len(LETTERS)):
    translated = ''
    for symbol in message:
        if symbol in LETTERS:
            num = LETTERS.find(symbol)
            num = num - key
            if num < 0:
                num = num + len(LETTERS)
            translated = translated + LETTERS[num]
        else:
            translated = translated + symbol
    print(f"Key #{key}: {translated}")
```

Output:

Most probable key (17):

Key #17: VEPAIDMYDUESTIMEAFTERTIMEIVEDONEMYSENTENCEBUT
COMMITTEDNOCRIMEANDBADMISTAKESIVEMADEAFEWIVE
HADMYSHAREOFSANDKICKEDINMYFACEBUTIVECOMETHROU
GHWEARETHECHAMPIONSMYFRIENDSANDWELLKEEPONFIGH
TINGTILTHEENDWEARETHECHAMPIONSWEARETHECHAMPIO
NSNOTIMEFORLOSERSCAUSEWEARETHECHAMPIONSOFTHEWOR
LDIVETAKENMYBOWSANDMYCURTAINCALLSYOUBROUGHTMEF
AMEANDFORTUNEANDEVERYTHINGTHATGOESWITHITITHAN
KYOUALLBUTITSBEENNOBEDOFROSESNOPLEASURECRUISEICO
NSIDERITACHALLENGEBEFORETHEWHOLEHUMANRACEANDIA
INTGONNALOSEWEARETHECHAMPIONSMYFRIENDSANDWELL