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Ans

```
def generatedKey (String, key):
```

```
    key = list(key)
```

```
    if len(String) == len(key):
```

```
        return key
```

```
    else:
```

```
        for i in range(len(String) - len(key)):
```

```
            key.append(key[i % len(key)])
```

```
        return " ".join(key)
```

```
def CipherText (String, key):
```

```
    CipherText = []
```

```
    for i in range(len(String)):
```

```
        x = (ord(String[i]) + ord(key[i % len(key)]) % 26
```

```
        x += ord('A')
```

```
Cipher-text.append(chr(x))
```

```
return " ".join(Cipher-text))
```

```
def originalText(Cipher-text, Key):
```

```
    x = (ord(Cipher-text[i]) - ord(Key[i] + 26)) % 26
```

```
    x += ord('A')
```

```
    orig-text.append(chr(x))
```

```
    return " ".join(orig-text))
```

```
If __name__ == "__main__":
```

```
    String = "Cryptography"
```

```
    Keyword = "Monarchy"
```

```
    Key = generateKey(String, Keyword)
```

```
    Cipher-text = generateKey CipherText(String, Key)
```

```
    print("Cipher-text", Cipher-text)
```

```
    print("original Text:" originalText(Cipher-text, Key))
```