CODE

```
def rail_fence_encrypt(text, key):
    rail = [['\n' for _ in range(len(text))] for _ in range(key)]

    dir_down = False
    row, col = 0, 0

    for char in text:
        if (row == 0) or (row == key - 1):
            dir_down = not dir_down

        rail[row][col] = char
        col += 1

        row += 1 if dir_down else -1

    result = []
    for i in range(key):
        for j in range(len(text)):
            if rail[i][j] != '\n':
                result.append(rail[i][j])

    return "".join(result)


def rail_fence_decrypt(cipher, key):
    rail = [['\n' for _ in range(len(cipher))] for _ in range(key)]

    dir_down = None
    row, col = 0, 0

    for i in range(len(cipher)):
        if (row == 0):
            dir_down = True
        if (row == key - 1):
            dir_down = False

        rail[row][col] = '*'
        col += 1

        row += 1 if dir_down else -1

    index = 0
    for i in range(key):
        for j in range(len(cipher)):
            if ((rail[i][j] == '*') and (index < len(cipher))):
                rail[i][j] = cipher[index]
                index += 1

    result = []
    row, col = 0, 0
    for i in range(len(cipher)):
        if (row == 0):
```

```python
            dir_down = True
        if (row == key - 1):
            dir_down = False

        if (rail[row][col] != '*'):
            result.append(rail[row][col])
            col += 1

        row += 1 if dir_down else -1

    return "".join(result)


# Example Usage:
plaintext = "HELLOPYTHON"
key = 3

cipher_text = rail_fence_encrypt(plaintext, key)
print("Encrypted Text:", cipher_text)

decrypted_text = rail_fence_decrypt(cipher_text, key)
print("Decrypted Text:", decrypted_text)
```

OUTPUT

```
Encrypted Text: HOHELPTOLYN
Decrypted Text: HELLOPYTHON
```