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Introduction to Computer Science, Winter Semester 2017  
Practice Assignment 8

Discussion: 16.12.2017 - 21.12.2017

**Exercise 8-1**     in class  
**Convert String**

Write an algorithm to print the characters in a String one by one.

**Solution:**

```
word = input()
n = len(word) # len() gets the length of the String
i = 0 # the first char is at position 0
while(i<n):
    _ print(word[i])
    _ i +=1
```

**Exercise 8-2**  
**Reverse String**

Write an algorithm to reverse a given String.

**Example:**

Input:  ablkwe  
Output: ewklba

**Solution:**

```
word = input()
n = len(word)
i = n - 1
result = ""
while(i >= 0):
    _ result += word[i]
    _ i -=1
print(result)
```

**Exercise 8-3**     in class  
**Search**

write an algorithm that searches a string for a given letter. When found, the search should stop immediately and its index should be printed

**Solution:**

```
N = input("Enter a string")
```

```

Key = input("Enter a character:")
m=len(N)
i = 0
FOUND = False
while i < m and FOUND == False:
    _ if Key == N[i]:
        _ _ FOUND = True
    _ else:
        _ _ i = i+1
if FOUND == True:
    _ print("Key found at ",i)
else:
    _ print("Key not found")

```

**Exercise 8-4**     in class  
                    **Palindrome**

Write an algorithm that determines whether the String the user inputs is a **palindrome** or not. A palindrome is a piece of text that can be read the same way in either direction (left to right and right to left). Examples of palindromes include words such as **racecar** and **noon**.

**Solution:**

```

x = input("insert a string")
i = 0
j = len(x) - 1
palindrome = True
while(i < j and palindrome == True):
    _ if(x[i] != x[j]):
        _ _ palindrome = False
    _ i += 1
    _ j -= 1
if(palindrome):
    _ print("The string is a palindrome")
else:
    _ print("The string is not a palindrome")

```

**Another Solution:**

```

result = ""
i = len(word)-1
while(i >= 0):
    _ result += word[i]
    _ i -= 1
if(word == result):
    _ print("The string is a palindrome")
else:
    _ print("The string is not a palindrome")

```