

Strings Topic

What is String?

→ String is a sequence of characters. It is immutable

→ immutable → which means once you created then values can't be changed

Why immutable?

→ Due to security reasons

What is concatenation?

Adding two strings

→ `length()` → we want find the length of the string then we use this

→ `charAt()` → we want to call particular element by applying index number in fun we get.

2.) Palindrome

↓

"race car" → To reverse → ~~race car~~

logic

race car
0 1 2 3 4 5 6

$n = 7$

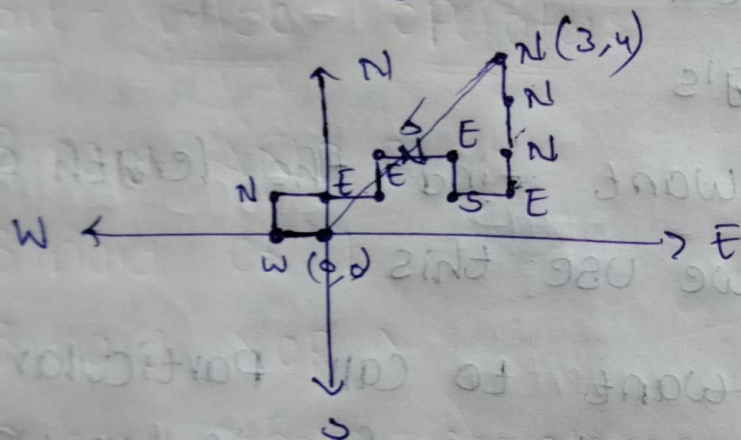
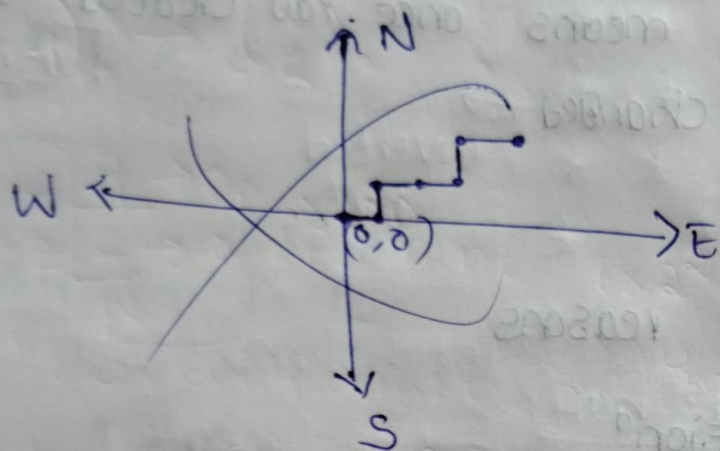
1) for (int i = 0 to `str.length() / 2`)

2) if (`str.charAt(i)` == ~~str~~ `str.charAt(n-1-i)`)

Q2) Shortest Path

contain 4 directions (E, W, N, S)

"W N E E N E S E N N N"



$$(x_1, y_1) = (0, 0)$$

$$(x_2, y_2) = (3, 4)$$

distance

$$\begin{aligned} & \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(3 - 0)^2 + (4 - 0)^2} \\ &= \sqrt{9 + 16} \\ &= \sqrt{25} = 5 \end{aligned}$$

Q3) Largest String

"apple", "Mango", "banana"

str1.compareTo(str2)

↓

0: equal

< 0: -ve

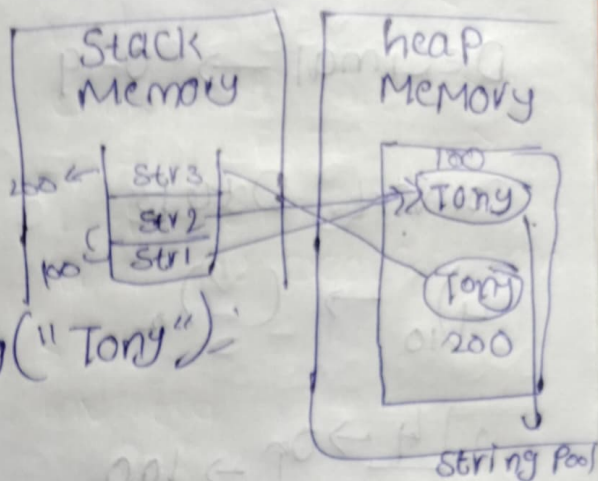
str1 < str2

> 0 : +ve st1 > st2

What are strings?

```
String str1 = "Tony";  
String str2 = "Tony";  
+ String str3 = new String("Tony");
```

Interning



String builder

It is a type of class to create mutable strings

~~compare~~ → in java strings are immutable you can not change them after creation

→ But string builder allows modifying strings without creating new objects, making faster and memory-efficient, especially in loops

Q5) String compression

"aaaa bbbdd" → "a4b3d2"

logic

```
for (int i = 0 to str.length())
```

ch[i]

count = 1

```
while (repeat) {
```

count++

}

count > 1 → no

count = 1 → X