



## Today's agenda

↳ Char and String

↳ ASCII

↳ Problems

↳ Sunday → optional class (Problem Solving)

→ 8PM

↳ Abhisv Kumar

→ 7\* on Codechef

masters on Codeforces



# AlgoPrep



String: <sup>combination</sup> Sequence of Characters

↳ upper case, lowercase, special etc.

```
String st = "AlgoPrep";
```

Characters: a) Alphabet

↳ a-z (lowercase)

↳ A-Z (uppercase)

b) Special characters

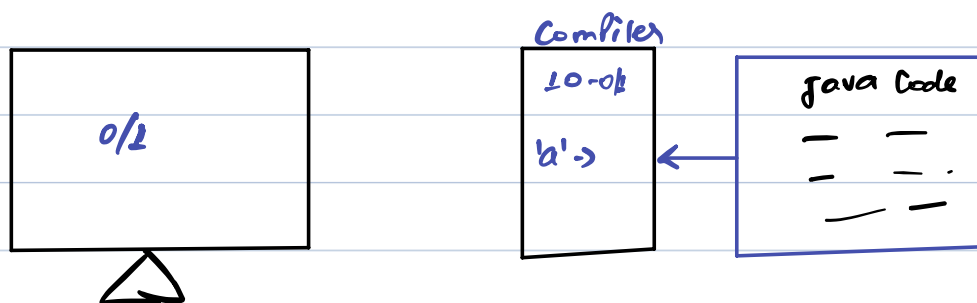
↳ @ # ? etc.

c) Numbers

↳ '0' - '9'

Syntax:

<sup>type</sup> <sup>name</sup> <sup>character</sup>  
char ch = 'A';



1. numbers → binary numbers

2. Characters → number → binary numbers  
↳ predefined



ASCII → 256 Characters

'A' : 65

'B' : 66

'C' : 67

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'a' : 97

'b' : 98

'c' : 99

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'0' : 48

'1' : 49

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'9' : 57

'10' : Not a Character

→ input

→ get



## \* char rules

1. char to int: implicit. ex: int x = 'A'; ↴

2. int to char: Complicated. → (Typecast always)  
Simplicity.

Char ch = (char)66;



AlgoPrep



Quiz 1:

```
char ch1 = 'B';  
s.o.p(ch1);
```

Quiz 2:

```
char ch2 = 66; → typecast automatic → 'B'  
s.o.p(ch2);
```

Quiz 3:

```
char ch3 = 'm2';  
s.o.p(ch3); → error
```

Quiz 4:

```
int n = 'A'; → 65  
n = n + 2; → n = 67  
System.out.println(n); → 67
```

Quiz 5:

→ mathematical operation in characters allowed (ASCII)

```
char ch4 = 'A';  
ch4 = (char)ch4 + 3;  
s.o.p(ch4);
```

↳ explicit conversion,

Quiz 6:

```
char ch5 = 'A';  
if (ch5 65 >= 90) {  
    s.o.p("Greater");  
}  
else {  
    s.o.p("Smaller");  
}
```

→ Smaller

Back till 9:45 PM

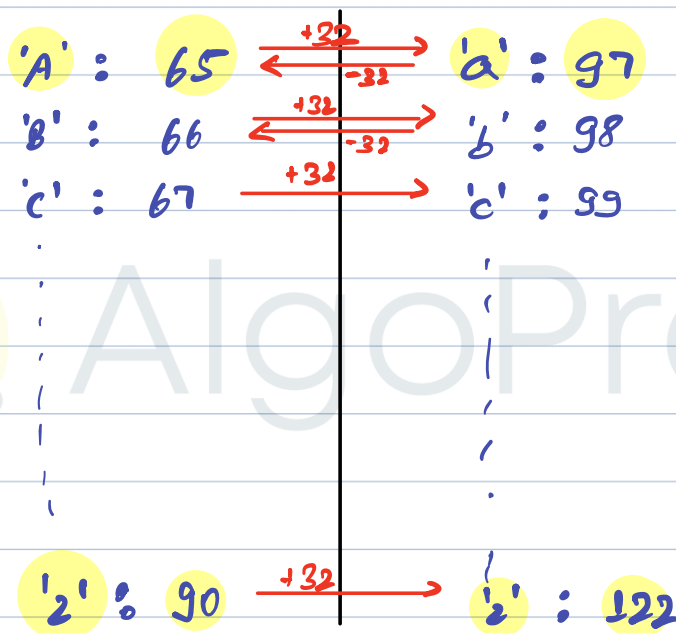


## Q) Toggle Character

Given a `char[]` which contains only small and capital letters, toggle them.

↳ lowercase  $\rightarrow$  uppercase  
uppercase  $\rightarrow$  lowercase

Eni AlgoPrep : **ALGOprep**



uppercase to lowercase  $\rightarrow +32$

lowercase to uppercase  $\rightarrow -32$



//Pseudo code

```
P S void main ( ) {  
    Scanner scn = new Scanner (System.in);  
    int n = scn.nextInt();  
    char[] ch = new char[n];  
    String st = scn.nextLine();  
    for (int i=0; i<n; i++) {  
        ch[i] = st.charAt(i);  
        Toggle (ch);  
    }  
}
```

```
P S void Toggle (char[] ch) {  
    for (int i=0; i<ch.length; i++) {  
        if (ch[i] >= 65 && ch[i] <= 90) { // Uppercase  
            ch[i] = (char) (ch[i] + 32);  
        }  
        else { // lowercase  
            ch[i] = (char) (ch[i] - 32);  
        }  
    }  
}
```





Q) Reverse the given String

↳ Given a String str, reverse and print it.

ex: algoPrep : perPogla

// Pseudo Code

```
P S String reverseString (String str){  
    int n = str.length();
```

```
    char[] ch = str.toCharArray();
```

```
    int sp = 0;
```

```
    int ep = n-1;
```

```
    while (sp < ep) {
```

```
        char temp = ch[sp];
```

```
        ch[sp] = ch[ep];
```

```
        ch[ep] = temp;
```

```
        sp++; ep--;
```

```
    }
```

```
    String ans = str.valueOf(ch);
```

```
    return ans;
```

```
}
```



```
String st = "Hello";
```

```
st = st + "e";
```

```
s-o-p (st); → Helloe
```

```
char [] ch = {'a', 'e', 'o', 'm'};
```

```
String ans = "";
```

```
i   ans   | for (int i=0; i<ch.length; i++) {  
0   "a"    |   ans = ans + ch[i];  
1   "ae"   |  
2   "aeo"  | }  
3   "aeom" |
```

