What Does This Program Do? - String

Strings: They can contain 0 or more characters and the indexed position starts with 0 as the first character. An empty string has a length of 0. Errors occur if accessing a character that is in a negative position or greater than the length of the string. The len[A] function will find the length of the string which is the total number of characters.	Strings are identified with surrounding double quotes. Use [] for identifying the characters in a substring of a given string as follows: If S = "ACSL WDTPD", then S[:3] = "ACS" S[5:] = "WDTPD" S[2:6] = "SL WD" S[0] = "A"

Sample Problems

After the following program is executed, what is the final value of *X*? A = "BANANAS" X = 0 : T = "" FOR j = len[A] TO 1 STEP –1 T = T + A[j] NEXT FOR j = 1 TO len[A] if A[j] = T[j] then X = X+1 NEXT	The program first stores the reverse of *A$* into *T$*, and then counts the number of letters that are in the same position in both strings. **A** B A N A N A S **T** S A N A N A B * * * * * Those positions marked with an asterisk contribute one to the value of *X*. There are 5 such positions.

. **02-03 C4 What Does This Program Do – Strings**

What is the length of B after this program is run?

```
A = "CINDERELLA" : B= ""
FOR I = 0 TO LEN [A] – 1 STEP 2
IF A[ I: I] < A[ I + 1: I + 1] THEN B = B + A[ I: I]
IF A[I + 1: I + 1] = "L" THEN B =  A[I: I] + B
IF A[I: I] >  "J" THEN B = B + A[I: I] + A[ I: I] + B
NEXT I
PRINT B
```

Answer:

02-03 C4 What Does This Program Do – Strings

I	B
0	C
2	CNNC
4	CNNCE
6	ECNNCEE
8	ECNNCEELLECNNCEE

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03-04 C4 What Does this Program Do - Strings

What value is printed when the following program is run?

```
X= "": Y= ""
A = "UNITEDSTATESOFAMERICA"
FOR J = 0 TO LEN [A] − 1
        IF A[J: J] > A[LEN [A] – J − 1: LEN[A] − J − 1] THEN X = X + A[J: J]
NEXT J
FOR K = 0 TO LEN [X] − 1
        IF X[K: K] < "N" THEN Y= Y + X[K: K]
NEXT K
PRINT Y
END
```

Answer:

The original A has its letters compared from each end, letter 1 is compared with letter 21, 2 is compared with 20, etc. If the first numbered letter is the bigger, it is added to X. The second loop adds just those letters less than N to X= "UNTSTTOM" and Y = "M".