

What Does This Program Do? (Strings)

GBW ACSL - Contest #4

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What Is A String?

- ▶ A string is a sequence of characters
- ▶ It is shown in the program inside "double quotation marks"
- ▶ It can be stored in a variable just like a numeric value.
- ▶ String variables end with a \$ like A\$
- ▶ There are functions to convert strings to and from numbers
- ▶ There are functions to manipulate strings just like for numbers
- ▶ String indexes start at 1, just like arrays

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LEFT\$ and RIGHT\$ functions

- ▶ The LEFT\$ function returns a specified number of characters from the beginning or left side of the string.
- ▶ The RIGHT\$ function returns a specified number of characters from the end or right side of the string.

```
1 A$ = "HELLO WORLD"  
2 PRINT RIGHT$(A$, 5), LEFT$(A$, 5)
```

This program will print "WORLD HELLO".

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MID\$ and LEN functions

- ▶ The MID\$ function returns a specified number of characters from anywhere in the string.
- ▶ The LEN function returns the number of characters in the string.

```
1 INPUT A$  
2 PRINT MID$(A$, 2, LEN(A$) - 2)
```

This program will prompt for a string, then print it out without the first and last characters. If you entered "HELLO WORLD" it would print "ELLO WORL".

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Joining Strings

- ▶ To join strings you will use the + operator
- ▶ You may also see some BASIC languages use the & operator
- ▶ When these are used, the result will be the two strings joined together with no extra spaces added.

```
1 A$ = "HELLO WORLD"  
2 PRINT MID$(A$,4,2) + MID$(A$,10,1)
```

What will this program print? (Hint: it will make you laugh out loud)

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Comparing Strings

- ▶ To compare strings you can use the same operators as numbers: =, , and <>
- ▶ The = and <> operators just check if the strings are equivalent or not.
- ▶ The <, >, <=, >= operators compare on ASCII code value.

```
1 INPUT A$  
2 INPUT B$  
3 IF A$>B$ THEN PRINT "A > B" ELSE PRINT "B >= A"
```

What do you think this will print if you input the following:

- ▶ "A" and "B"?
- ▶ "A" and "ABC"?
- ▶ "ABC" and "abc"?
- ▶ "ABC" and "123"?
- ▶ "100" and "2"?

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Converting Strings and Numbers

- ▶ The VAL function converts a string to a number.
- ▶ The STR\$ function will convert a string to a number.
- ▶ Note the STR\$ function always has a leading space for positive numbers. Why do you think that might be?

```
1 FOR I = -9 to 9
2   PRINT "The value is " + STR$(I)
3 NEXT I
```

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Miscellaneous

- ▶ String variables and functions that return strings always end with a \$.
- ▶ The website <http://yohan.es/swbasic/> has a simple BASIC interpreter you can try the programs in. It also has links to several other online BASIC interpreters. You can try these out if you're not sure how something works.

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