Problem Statement: Find the reverse of a given string

Description: This program reverses a string that a user inputs. For example, if a user enters a string "reverse me" then on reversing it will be "em esrever".

Test Cases:

|  |  |
| --- | --- |
| **Expected Input** | **Expected Output** |
| Manasa | asanaM |
| Tree | eerT |
| A | A |
| Hello | olleH |
| In | nI |

Solution:

**Algorithm:**

Step 1: Start

Step 2: “Str \ ”, a=ToCharacters(a)

Step 3: len=1

Step 4: if a[len]!=”\” go to step 4.1

Else go to step 5

Step 4.1: len= len+1 , go to step 4

Step 5: b=a,i=1

Step 6: if i< len go to step 6.1

Else go to step 7

Step 6.1: b[i]= a[len-i], i=i+1

Go to step 6

Step 7: Print b

Step 8: END

**Pseudocode:**

START

QUERY "Enter a string : ", str

str=ToString(str)+"$"

a=ToCharacters(str)

i=1

WHILE a[i]!='$' DO

i=i+1

ENDWHILE

len=i

j=1

WHILE j<len DO

b[j]=a[len-j]

j=j+1

ENDWHILE

output=ToString(b)

WRITE output

END

Trace Table:

|  |  |  |  |
| --- | --- | --- | --- |
| i | A[i] | B[j] | length |
| 0 | A[0] | B[7] | l-1-0 |
| 1 | A[1] | B[6] | l-1-1 |
| 2 | A[2] | B[5] | l-1-2 |
| 3 | A[3] | B[4] | l-1-3 |
| 4 | A[4] | B[3] | l-1-4 |
| 5 | A[3] | B[2] | l-i-3 |
| 6 | A[2] | B[1] | l-1-2 |
| 7 | A[1] | B[0] | l-1-1 |

Final Result:

|  |  |  |  |
| --- | --- | --- | --- |
| **Expected input** | **Expected output** | **Actual output** | **Test result** |
| Manasa | asanaM | asanaM | **1** |
| Tree | eerT | eerT | **1** |
| A | A | A | **1** |
| Hello | olleH | olleH | **1** |
| In | nI | nI | **1** |
|  |  |  |  |