Now We Can Classify the Character

We need to compare with capital **A**.

Let's define **R3** as **-'@'** …

TRUE ← character < 'A'? → FALSE

increment non-alpha

count char ≥ 'A'
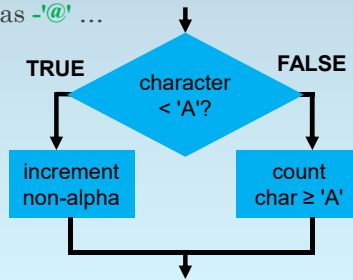
Subtract @ to Compare with Capital A

Remember the ASCII table?

x00		x40	x41		x5A	x5B		x60	x61		x7A	x7B		x7F
NUL	…	@	A	…	Z	[	…	`	a	…	z	{	…	DEL

Subtracting **'@'** allows us to check for non-alphabetic characters in the left region.

We store the difference (original character minus **'@'**) back in **R2**, so A through Z become 1 through 26.

Subtract @ to Compare with Capital A

COUNTLOOP
LDR R2,R1,#0
BRz DONE
ADD R2,R2,R3

Compare with capital A.

Add R3 (-'@') to R2 and write the sum back into R2.

Branch Unless We Have a Character in the Left Region

COUNTLOOP
LDR R2,R1,#0
BRz DONE
ADD R2,R2,R3
BRp AT_LEAST_A

Branch forward if the character is not in the left non-alphabetic region.

What is the branch condition?