

How Can We Increment the Right Letter's Bin?

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

Let's be clear:

- We are able to reuse the code because **we designed the code to be reusable**.
- In both cases, **R0** points to the histogram, and **R2** is 1 to 26 for the letter.

Branch If We Have a Lower Case Letter

```
MORE_THAN_Z
ADD R2,R2,R5
BRnz NON_ALPHA
ADD R6,R2,R4
BRnz ALPHA
```

Handle lower case letters.

What is the branch condition?

We created a second label for incrementing a letter's bin.

We Know that the Character is Not a Letter

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

At this point, we know that the original character was not a letter.

So ... ?

Branch (unconditionally) to the code that increments the non-alpha histogram bin.

Branch to the Code for Non-Alphabetic Characters

```
MORE_THAN_Z
ADD R2,R2,R5
BRnz NON_ALPHA
ADD R6,R2,R4
BRnz ALPHA
BRnzp NON_ALPHA
```

Handle the last region.

Again, just use the label created earlier.