

calculate_word_width()

Start



Multiply length by
CHAR_WIDTH and
scaleFactor

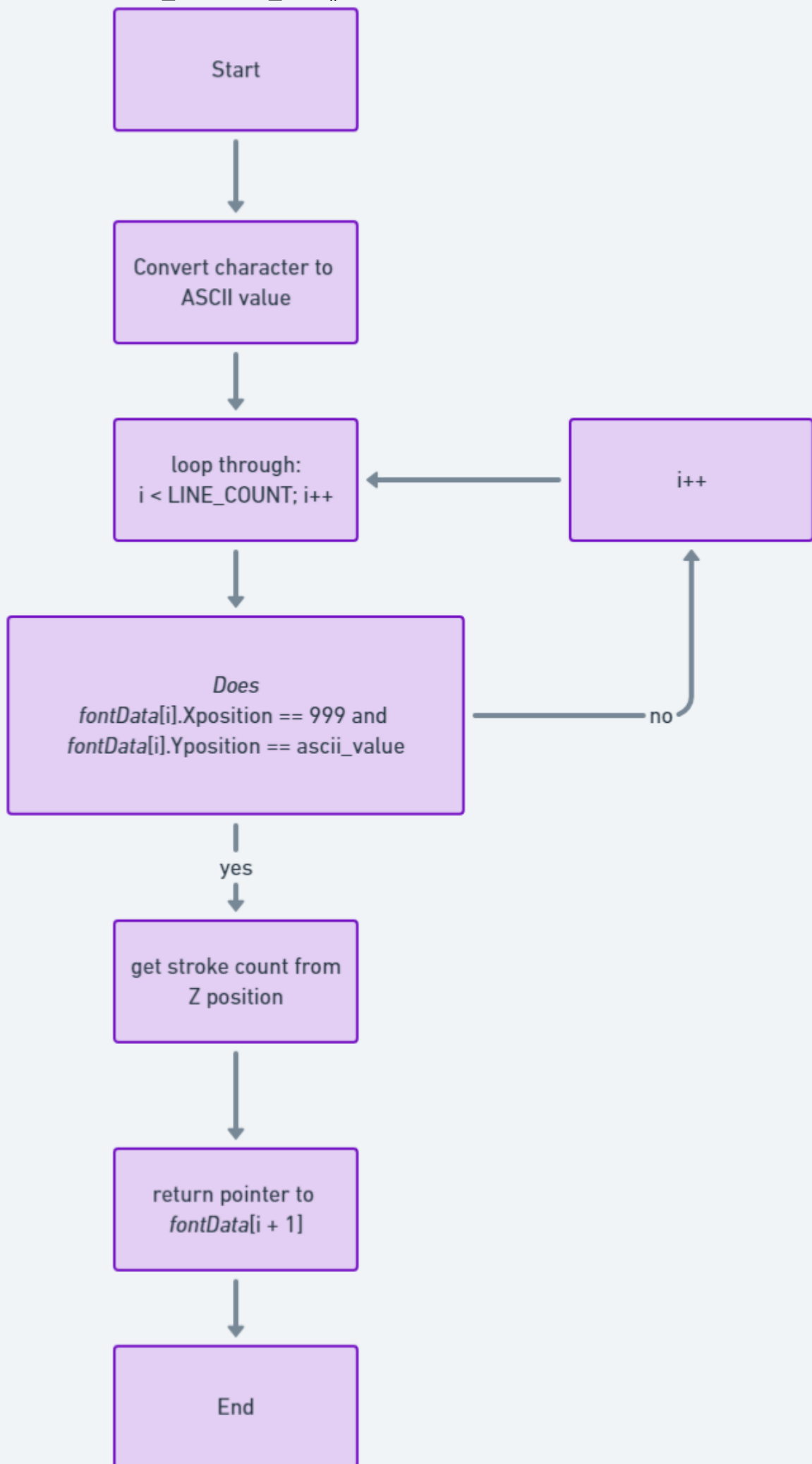


Return the calculated
width



End

find_character_data()



fits_in_line()

Start

Input:
remaining_space,
word_width

remaining_
space >=
word_width
?

Yes

Update
remaining_space -=
word_width

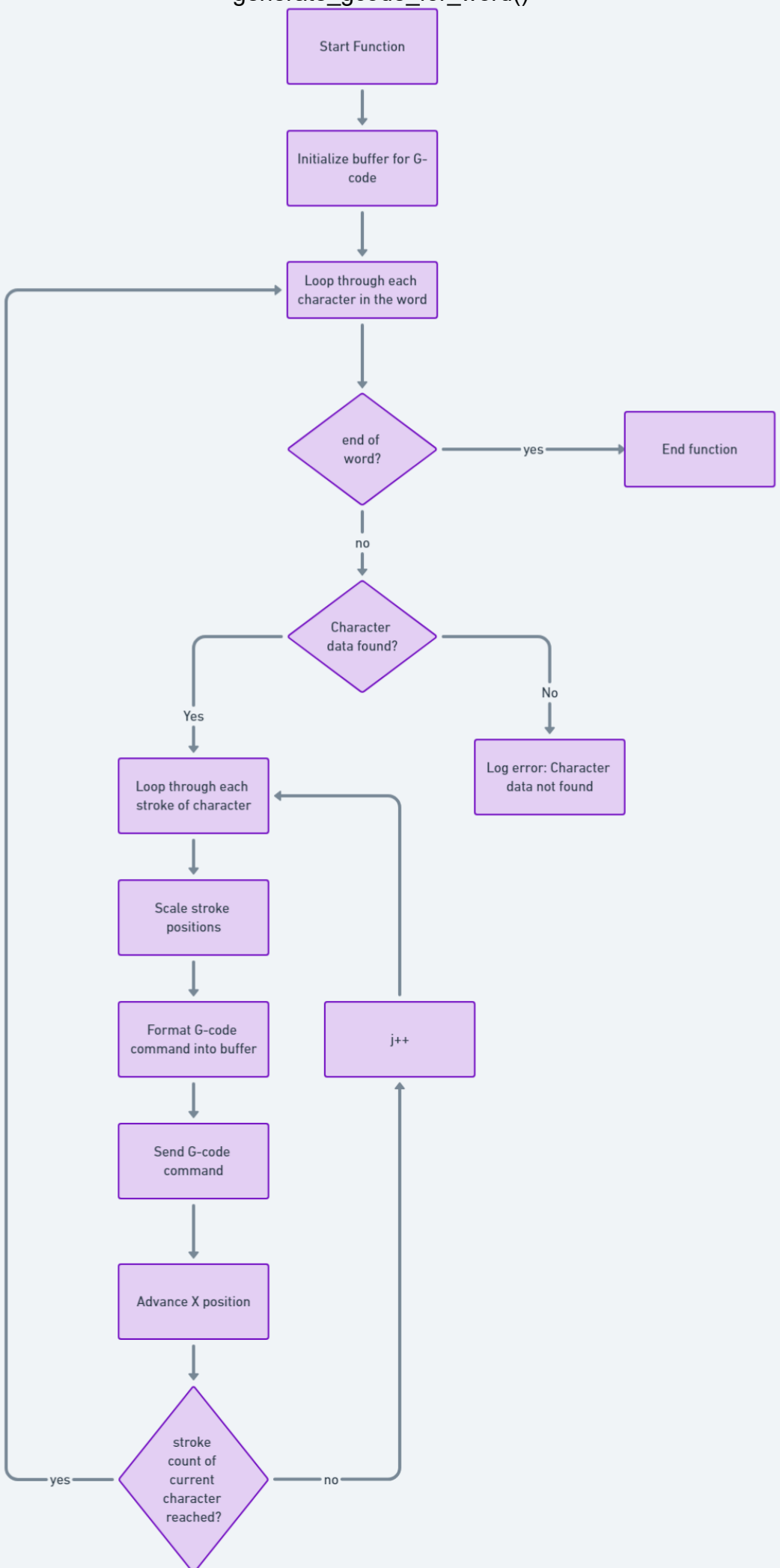
no

Return 0

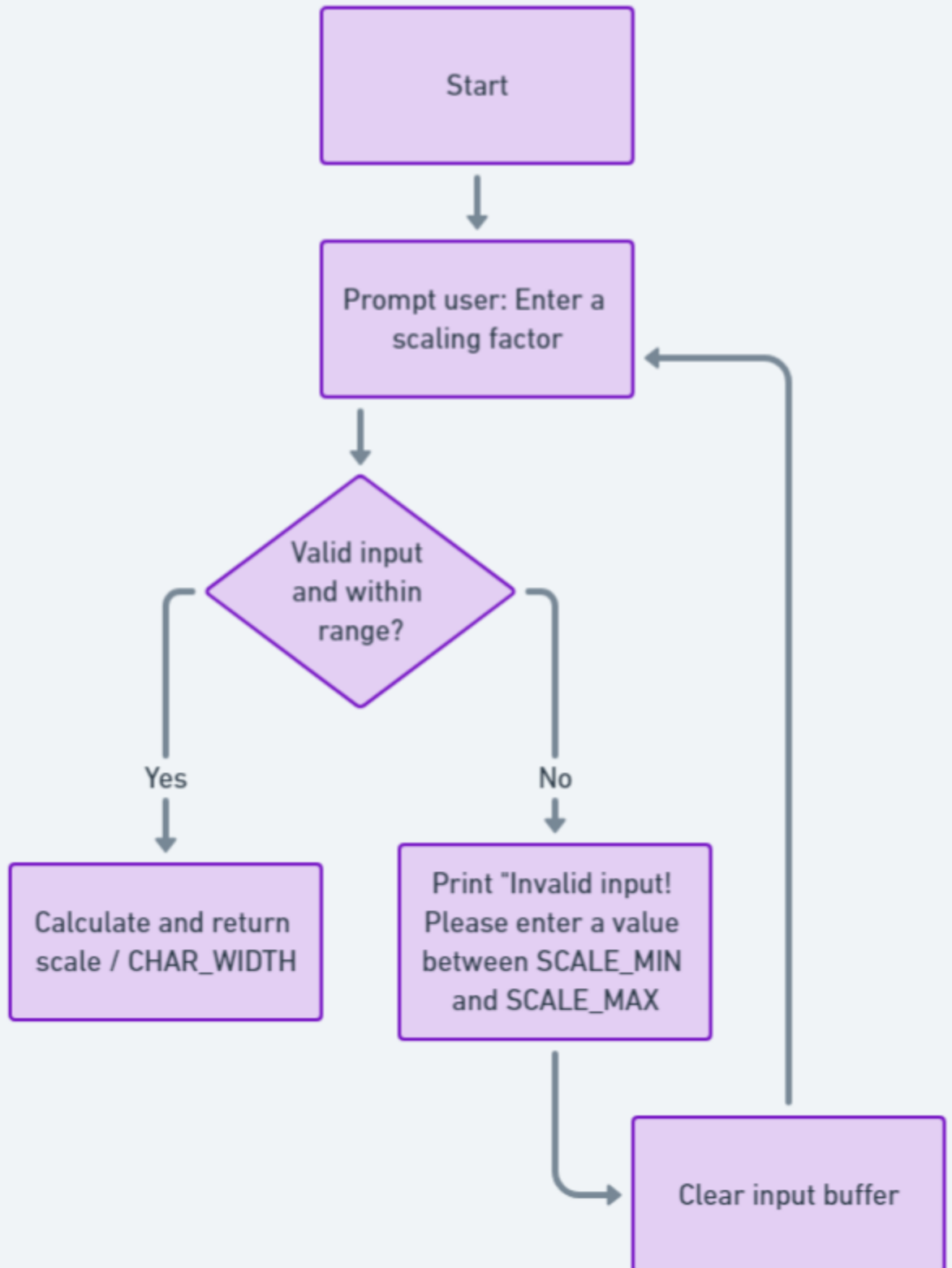
Return 1

End

generate_gcode_for_word()



get_scale_factor()



Start

main()

Can RS232
port be
opened?

No

Yes

Print "Unable to open
COM port" and Exit

Initialize Robot

call
open_file("SingleStrokeFont.txt")

Load Font Data from
File into array of
structs

Call
Get_Scaling_Factor()

Call
open_file('Input Text File')

Initialize Line,X and Y
Parameters

Read Word from File

call
calculate_word_width()

call
fits_in_line()

no

yes

call
reset_position()

call
generate_gcode_for_word()

Adjust current_Xpos
and remaining_space

More
Words?

No

Return Robot to
Origin

Close COM Port

End

open_file()

```
FILE *file =  
fopen(filename)
```

File pointer
is NULL?

Yes

Print "Error opening
file"

No

Proceed

End

reset_position()

Start



Reset current_Xpos
to 0



Update current_Ypos:
 $\text{current_Ypos} += \text{LINE_SPACING} - \text{CHAR_WIDTH} * \text{scaleFactor}$



Reset
remaining_space to
LINE_WIDTH



Format buffer with
updated positions



Send G-code
instructions to wrap
line



End