Problem Statement:

Find the First Non-Repeating Character

Write a program to find the first non-repeating character in a string. For input "swiss", the output should be "w". You cannot use any built-in string or character frequency counting functions.

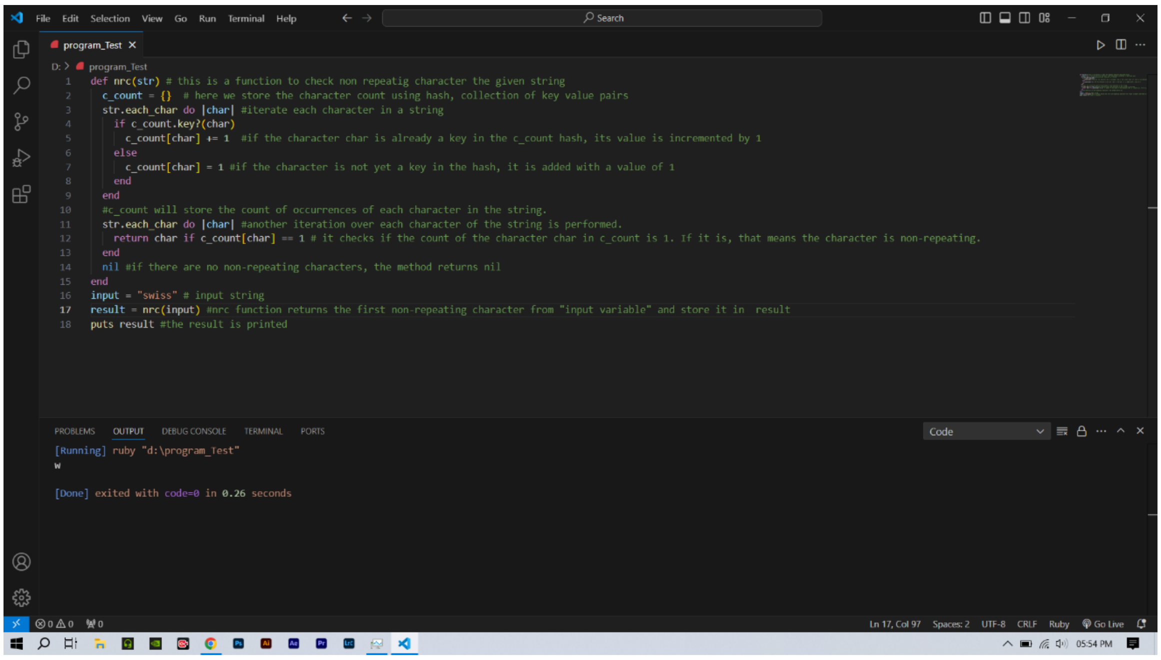
Instructions: Implement manual string traversal and counting logic to solve the problem.

Coding in ruby:

```
def nrc(str) # this is a function to check non repeatig character the given string
  c_count = {}  # here we store the character count using hash, collection of key value pairs
  str.each_char do |char| #iterate each character in a string
    if c_count.key?(char)
      c_count[char] += 1  #if the character char is already a key in the c_count hash, its value is
incremented by 1
    else
      c_count[char] = 1 #if the character is not yet a key in the hash, it is added with a value of 1
    end
  end
  #c_count will store the count of occurrences of each character in the string.
  str.each_char do |char| #another iteration over each character of the string is performed.
    return char if c_count[char] == 1 # it checks if the count of the character char in c_count is 1. If
it is, that means the character is non-repeating.
  end
  nil #if there are no non-repeating characters, the method returns nil
end
input = "swiss" # input string (change this string to for alter results like google,hash agile, ect…)
result = nrc(input) #nrc function returns the first non-repeating character from "input variable"
and store it in  result
puts result #the result is printed
```

Screenshots:

1. Input: swiss output: w

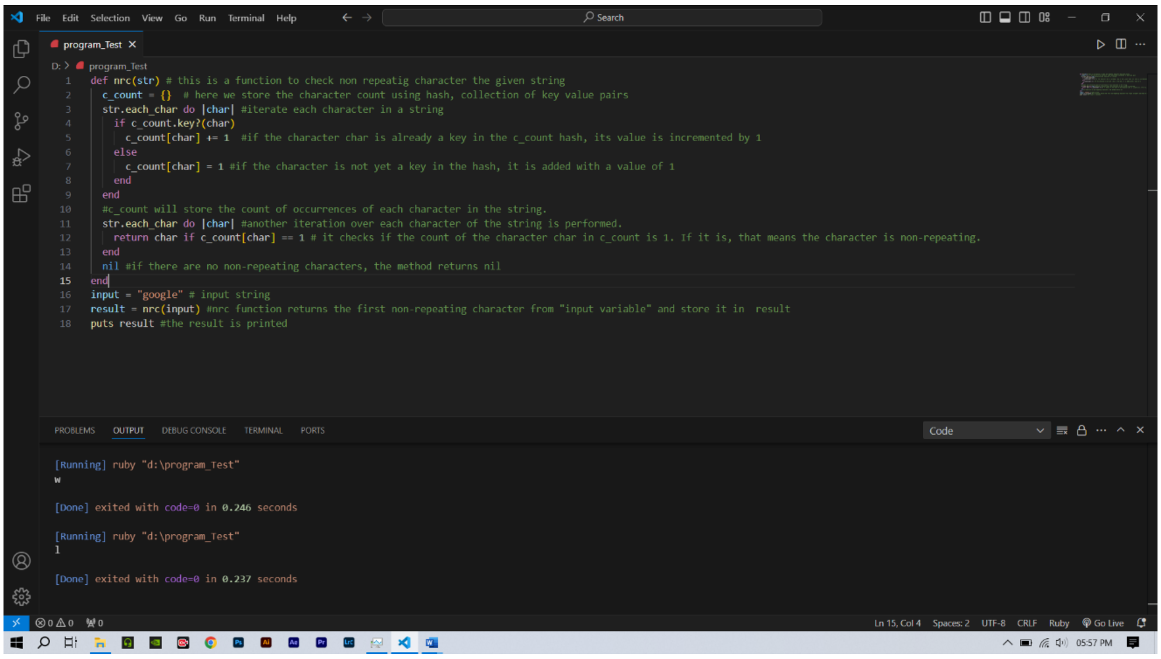


```ruby
def nrc(str) # this is a function to check non repeatig character the given string
  c_count = {}  # here we store the character count using hash, collection of key value pairs
  str.each_char do |char| #iterate each character in a string
    if c_count.key?(char)
      c_count[char] += 1  #if the character char is already a key in the c_count hash, its value is incremented by 1
    else
      c_count[char] = 1 #if the character is not yet a key in the hash, it is added with a value of 1
    end
  end
  #c_count will store the count of occurrences of each character in the string.
  str.each_char do |char| #another iteration over each character of the string is performed.
    return char if c_count[char] == 1 # it checks if the count of the character char in c_count is 1. If it is, that means the character is non-repeating.
  end
  nil #if there are no non-repeating characters, the method returns nil
end
input = "swiss" # input string
result = nrc(input) #nrc function returns the first non-repeating character from "input variable" and store it in  result
puts result #the result is printed
```

```
[Running] ruby "d:\program_Test"
w

[Done] exited with code=0 in 0.26 seconds
```

2. Input: google output: l



```ruby
def nrc(str) # this is a function to check non repeatig character the given string
  c_count = {}  # here we store the character count using hash, collection of key value pairs
  str.each_char do |char| #iterate each character in a string
    if c_count.key?(char)
      c_count[char] += 1  #if the character char is already a key in the c_count hash, its value is incremented by 1
    else
      c_count[char] = 1 #if the character is not yet a key in the hash, it is added with a value of 1
    end
  end
  #c_count will store the count of occurrences of each character in the string.
  str.each_char do |char| #another iteration over each character of the string is performed.
    return char if c_count[char] == 1 # it checks if the count of the character char in c_count is 1. If it is, that means the character is non-repeating.
  end
  nil #if there are no non-repeating characters, the method returns nil
end
input = "google" # input string
result = nrc(input) #nrc function returns the first non-repeating character from "input variable" and store it in  result
puts result #the result is printed
```

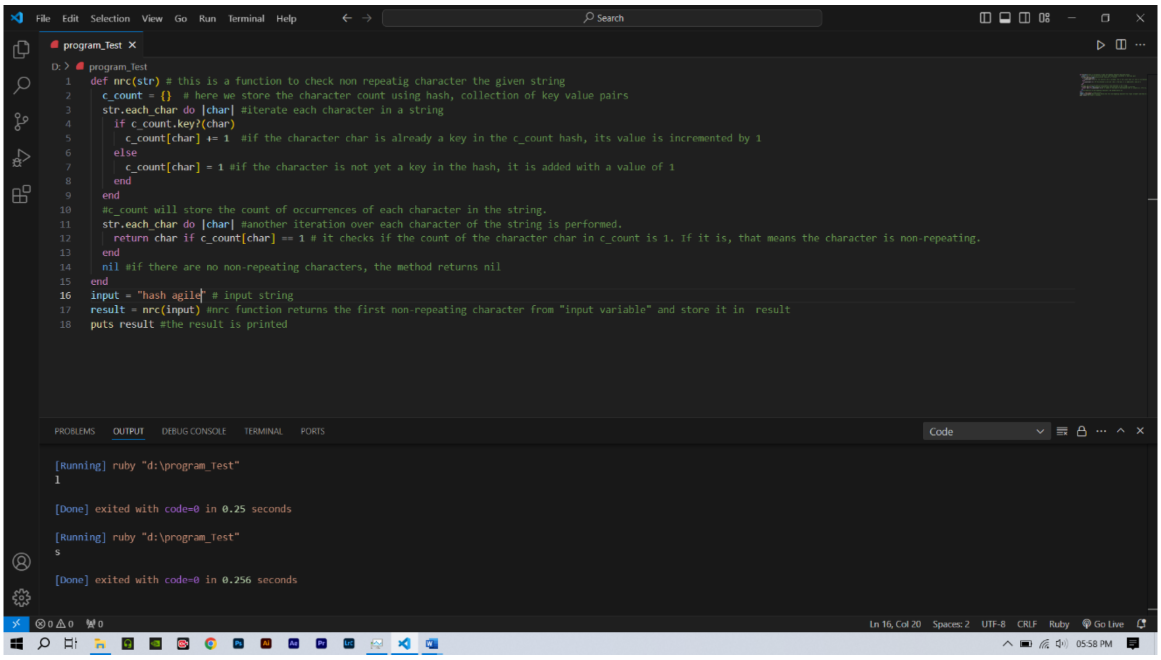
```
[Running] ruby "d:\program_Test"
w

[Done] exited with code=0 in 0.246 seconds

[Running] ruby "d:\program_Test"
l

[Done] exited with code=0 in 0.237 seconds
```

3. Input: hash agile output: h



```
def nrc(str) # this is a function to check non repeatig character the given string
  c_count = {}  # here we store the character count using hash, collection of key value pairs
  str.each_char do |char| #iterate each character in a string
    if c_count.key?(char)
      c_count[char] += 1  #if the character char is already a key in the c_count hash, its value is incremented by 1
    else
      c_count[char] = 1 #if the character is not yet a key in the hash, it is added with a value of 1
    end
  end
  #c_count will store the count of occurrences of each character in the string.
  str.each_char do |char| #another iteration over each character of the string is performed.
    return char if c_count[char] == 1 # it checks if the count of the character char in c_count is 1. If it is, that means the character is non-repeating.
  end
  nil #if there are no non-repeating characters, the method returns nil
end
input = "hash agile" # input string
result = nrc(input) #nrc function returns the first non-repeating character from "input variable" and store it in  result
puts result #the result is printed
```

```
[Running] ruby "d:\program_Test"
l

[Done] exited with code=0 in 0.25 seconds

[Running] ruby "d:\program_Test"
s

[Done] exited with code=0 in 0.256 seconds
```

Sample outputs:

1. Input: swiss	output: w
2. Input: google	output: l
3. Input: hash agile	output: h