

Day-16 : String - 2

Problem 1: Z-Function

calculate_z_function(s):

```
n = len(s)
```

```
z = [0] * n
```

```
left = right = 0
```

```
for i in range(1, n):
```

```
    if i <= right:
```

```
        k = i - left
```

```
        if z[k] < right - i + 1:
```

```
            z[i] = z[k]
```

```
        else:
```

```
            left = i
```

```
            while right < n and s[right] == s[right - left]:
```

```
                right += 1
```

```
            z[i] = right - left
```

```
            right -= 1
```

```
    else:
```

```
        left = right = i
```

```
        while right < n and s[right] == s[right - left]:
```

```
            right += 1
```

```
        z[i] = right - left
```

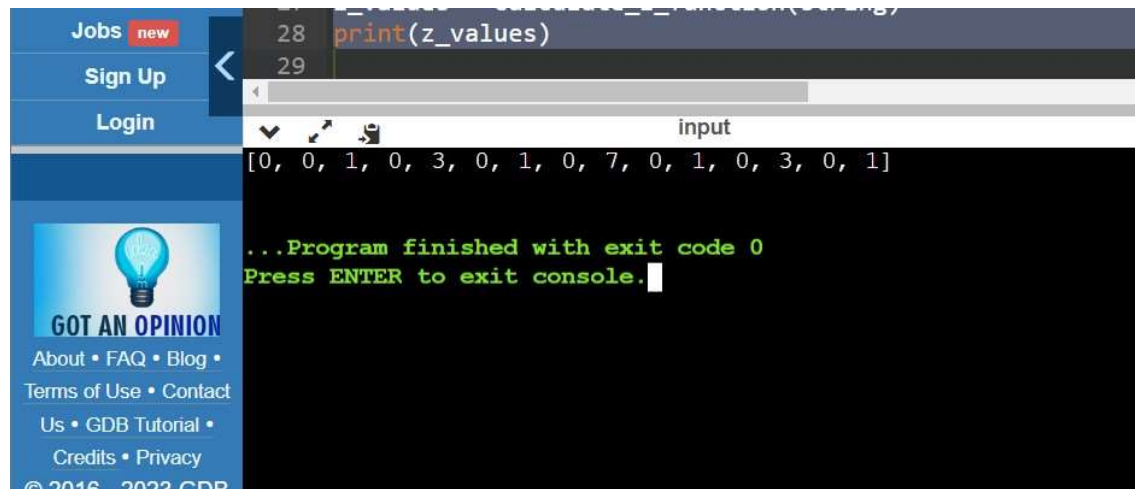
```
        right -= 1
```

```
return z
```

```
string = "abacabadabacaba"
```

```
z_values = calculate_z_function(string)
```

```
print(z_values)
```



The screenshot shows a web browser window with a blue sidebar on the left and a main content area on the right. The sidebar contains a navigation menu with links: "Jobs new", "Sign Up", "Login", "GOT AN OPINION" (with a lightbulb icon), "About • FAQ • Blog •", "Terms of Use • Contact", "Us • GDB Tutorial •", "Credits • Privacy", and a copyright notice "© 2016 - 2023 GDB". The main content area displays a terminal window with a dark background. The terminal shows the output of a program: "input" followed by a list of values "[0, 0, 1, 0, 3, 0, 1, 0, 7, 0, 1, 0, 3, 0, 1]". Below this, it says "...Program finished with exit code 0" and "Press ENTER to exit console." with a cursor.

```
28 print(z_values)
29
```

input

[0, 0, 1, 0, 3, 0, 1, 0, 7, 0, 1, 0, 3, 0, 1]

...Program finished with exit code 0
Press ENTER to exit console.