

The screenshot shows a code editor interface with three tabs open:

- Welcome
- C PROGRAMMING PROJECT .c
- C #include <stdio.h> Untitled-1

The Untitled-1 tab contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     char str[100];
5     int count = 0;
6
7     printf("Enter a string: ");
8     gets(str);
9
10    while(str[count] != '\0')
11        count++;
12
13    printf("Length = %d", count);
14    return 0;
15 }
16
```

Below the code editor, there is a navigation bar with tabs: PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The TERMINAL tab is currently selected.

The terminal window displays the following output from a terminal session:

```
rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
ly recommended that you use fgets(3) instead."
| ^
/ Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
227 |         #define __deprecated_msg __attribute__((__deprecated__(msg)))
|
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: Hello World
Length = 11
rajatsingh@Rajats-MacBook-Air ~ %
```

>Welcome C C PROGRAMMING PROJECT.c C #include <stdio.h> Untitled-1

```
1 #include <stdio.h>
2
3 int main() {
4     char str[100];
5     int i;
6
7     printf("Enter a string: ");
8     gets(str);
9
10    for(i = 0; str[i] != '\0'; i++)
11        printf("%c\n", str[i]);
12
13    return 0;
14}
15
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

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```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
  8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
  260 | __deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
   | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
  227 |         #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
   |
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: CAT
C
A
T
● rajatsingh@Rajats-MacBook-Air ~ %
```

A screenshot of a code editor showing a C program. The code is as follows:

```
1 #include <stdio.h>
2
3 int main() {
4     char str[100];
5     int i, v=0, c=0;
6
7     printf("Enter a string: ");
8     gets(str);
9
10    for(i = 0; str[i] != '\0'; i++) {
11        char ch = str[i];
12        if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'|||
13            ch=='A'||ch=='E'||ch=='I'||ch=='O'||ch=='U')
14            v++;
15        else if((ch>='a' && ch<='z') || (ch>='A' && ch<='Z'))
16            c++;
17    }
18
19    printf("Vowels = %d\nConsonants = %d", v, c);
20    return 0;
21 }
22
```

A screenshot of a terminal window showing the execution of the C program and its output. The terminal shows the following:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

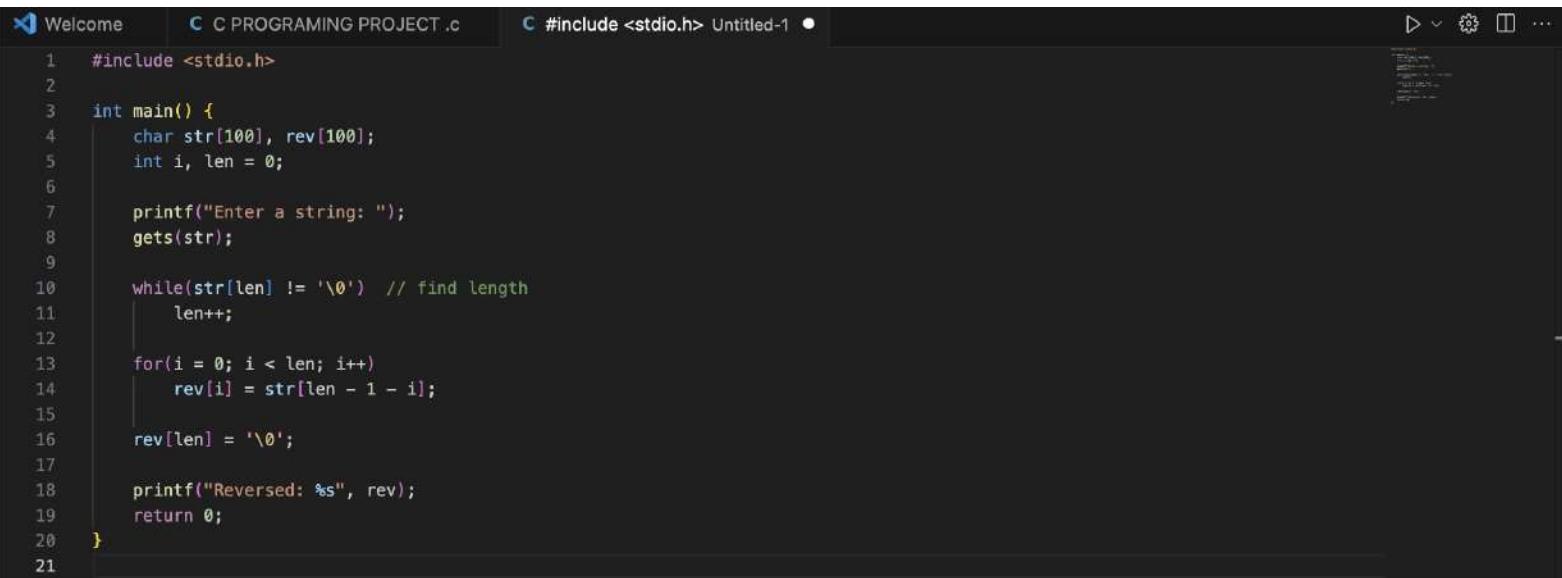
```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
  8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
  260 | __deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
   | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
  227 |         #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
   |             ^
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: Apple
Vowels = 2
Consonants = 3
● rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor window with a dark theme. The top bar has tabs for "Welcome", "C PROGRAMMING PROJECT.c", and "#include <stdio.h> Untitled-1". The main area contains the following C code:

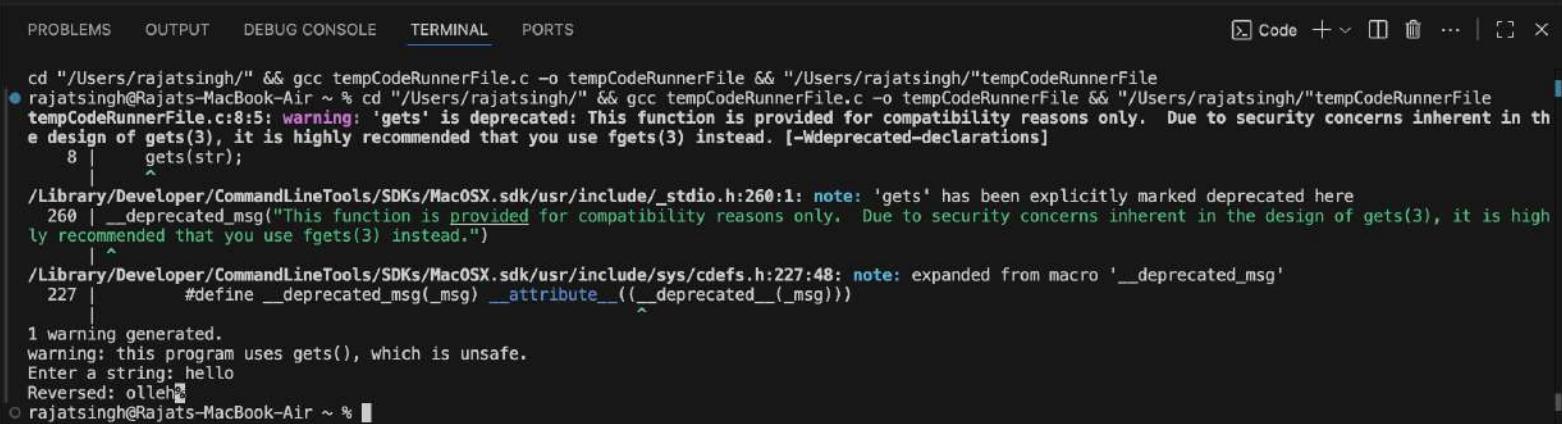
```
1 #include <stdio.h>
2
3 int main() {
4     char str[100];
5     int i;
6
7     printf("Enter lowercase string: ");
8     gets(str);
9
10    for(i = 0; str[i] != '\0'; i++)
11        if(str[i] >= 'a' && str[i] <= 'z')
12            str[i] = str[i] - 32;
13
14    printf("Uppercase: %s", str);
15    return 0;
16}
17
```

The screenshot shows a terminal window with a dark theme. The top bar has tabs for "PROBLEMS", "OUTPUT", "DEBUG CONSOLE", "TERMINAL" (which is selected), and "PORTS". The bottom right corner shows icons for "Code", "Output", "Terminal", and "Terminal". The terminal output is as follows:

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
  8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
  260 | __deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
   | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
  227 | #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
   |
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter lowercase string: hello world
Uppercase: HELLO WORLD
○ rajatsingh@Rajats-MacBook-Air ~ %
```



```
1 #include <stdio.h>
2
3 int main() {
4     char str[100], rev[100];
5     int i, len = 0;
6
7     printf("Enter a string: ");
8     gets(str);
9
10    while(str[len] != '\0') // find length
11        len++;
12
13    for(i = 0; i < len; i++)
14        rev[i] = str[len - 1 - i];
15
16    rev[len] = '\0';
17
18    printf("Reversed: %s", rev);
19    return 0;
20}
21
```



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
 8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
 260 | __deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
   | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
 227 | #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
   |
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: hello
Reversed: olleh
● rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor with two tabs: "C PROGRAMMING PROJECT.c" and "Untitled-1". The "Untitled-1" tab contains a C program to check if a string is a palindrome. The code uses the `gets` function, which is deprecated. The terminal below shows the execution of the program, including a warning about the use of `gets`, the input "madam", and the output "Palindrome".

```
1 #include <stdio.h>
2
3 int main() {
4     char str[100];
5     int i, len = 0, flag = 1;
6
7     printf("Enter a string: ");
8     gets(str);
9
10    while(str[len] != '\0')
11        len++;
12
13    for(i = 0; i < len/2; i++)
14        if(str[i] != str[len - 1 - i])
15            flag = 0;
16
17    if(flag)
18        printf("Palindrome");
19    else
20        printf("Not Palindrome");
21
22    return 0;
23 }
24
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
 8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
 260 | _deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
  | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
 227 |         #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
  | ^
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: madam
Palindrome
● rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor interface with two tabs: "C PROGRAMMING PROJECT.c" and "C #include <stdio.h> Untitled-1". The "C PROGRAMMING PROJECT.c" tab contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     char str[200];
5     int i, space=0, digit=0, special=0;
6
7     printf("Enter a string: ");
8     gets(str);
9
10    for(i = 0; str[i] != '\0'; i++) {
11        if(str[i] == ' ')
12            space++;
13        else if(str[i] >= '0' && str[i] <= '9')
14            digit++;
15        else if(!(str[i] >= 'a' && str[i] <= 'z') &&
16               !(str[i] >= 'A' && str[i] <= 'Z'))
17            special++;
18    }
19
20    printf("Spaces = %d\nDigits = %d\nSpecial Characters = %d",
21           space, digit, special);
22
23    return 0;
24}
25
```

The "TERMINAL" tab shows the output of running the program:

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
  8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
  260 | __deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
   | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
  227 |         #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
   | ^
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: Hi 123 #@!
Spaces = 2
Digits = 3
Special Characters = 3
rajatsingh@Rajats-MacBook-Air ~ %
```

```
1  #include <stdio.h>
2
3  int main() {
4      char str[200];
5      int i;
6
7      printf("Enter a string: ");
8      gets(str);
9
10     for(i = 0; str[i] != '\0'; i++)
11         if(str[i] == ' ')
12             str[i] = '-';
13
14     printf("Output: %s", str);
15     return 0;
16 }
17
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

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```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
 8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
 260 | __deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
   | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
 227 |         #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
   |         ^
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: hello world program
Output: hello-world-program
rajatsingh@Rajats-MacBook-Air ~ %
```

```
1 #include <stdio.h>
2
3 int main() {
4     char str[200], ch;
5     int i, count = 0;
6
7     printf("Enter a string: ");
8     gets(str);
9     printf("Enter character to count: ");
10    scanf("%c", &ch);
11
12    for(i = 0; str[i] != '\0'; i++)
13        if(str[i] == ch)
14            count++;
15
16    printf("Frequency of '%c' = %d", ch, count);
17    return 0;
18 }
19
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
  8 |     gets(str);
     ^~~~~~
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
  260 | __deprecated_msg("This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is highly recommended that you use fgets(3) instead.")
     ^~~~~~
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
  227 |         #define __deprecated_msg(_msg) __attribute__((__deprecated__(_msg)))
     ^~~~~~
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: banana
Enter character to count: a
Frequency of 'a' = 3
● rajatsingh@Rajats-MacBook-Air ~ %
```

Restart Visual Studio

Welcome C C PROGRAMMING PROJECT .c C #include <stdio.h> Untitled-1

```
1 #include <stdio.h>
2
3 int main() {
4     char str[200];
5     int i;
6
7     printf("Enter a string: ");
8     gets(str);
9
10    for(i = 0; str[i] != '\0'; i++) {
11        if(str[i] >= 'a' && str[i] <= 'z')
12            str[i] = str[i] - 32;
13        else if(str[i] >= 'A' && str[i] <= 'Z')
14            str[i] = str[i] + 32;
15    }
16
17    printf("Toggled Case: %s", str);
18    return 0;
19 }
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

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```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
tempCodeRunnerFile.c:8:5: warning: 'gets' is deprecated: This function is provided for compatibility reasons only. Due to security concerns inherent in th
e design of gets(3), it is highly recommended that you use fgets(3) instead. [-Wdeprecated-declarations]
 8 |     gets(str);
   |     ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/_stdio.h:260:1: note: 'gets' has been explicitly marked deprecated here
 260 | __deprecated_msg('This function is provided for compatibility reasons only. Due to security concerns inherent in the design of gets(3), it is high
ly recommended that you use fgets(3) instead.')
   | ^
/Library/Developer/CommandLineTools/SDKs/MacOSX.sdk/usr/include/sys/cdefs.h:227:48: note: expanded from macro '__deprecated_msg'
 227 |         #define __deprecated_msg __attribute__((__deprecated__(__msg)))
   |
1 warning generated.
warning: this program uses gets(), which is unsafe.
Enter a string: Hello WoRLd
Toggled Case: hEll0 wOrld
○ rajatsingh@Rajats-MacBook-Air ~ %
```