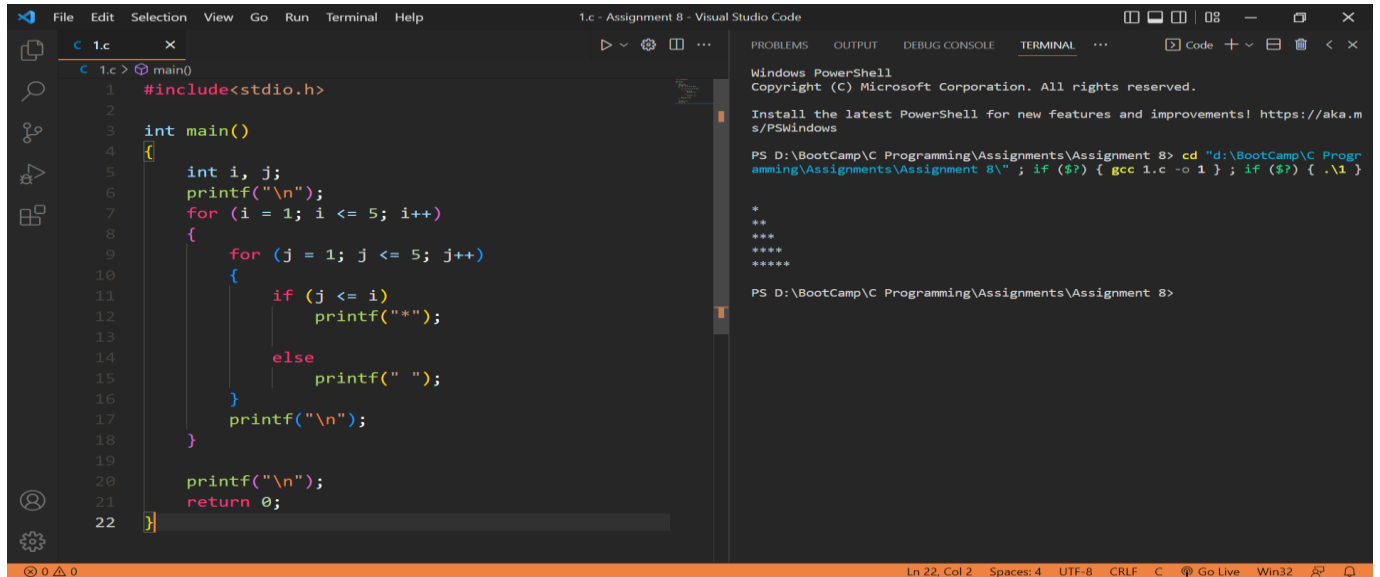


ASSIGNMENT – 08

Q1.



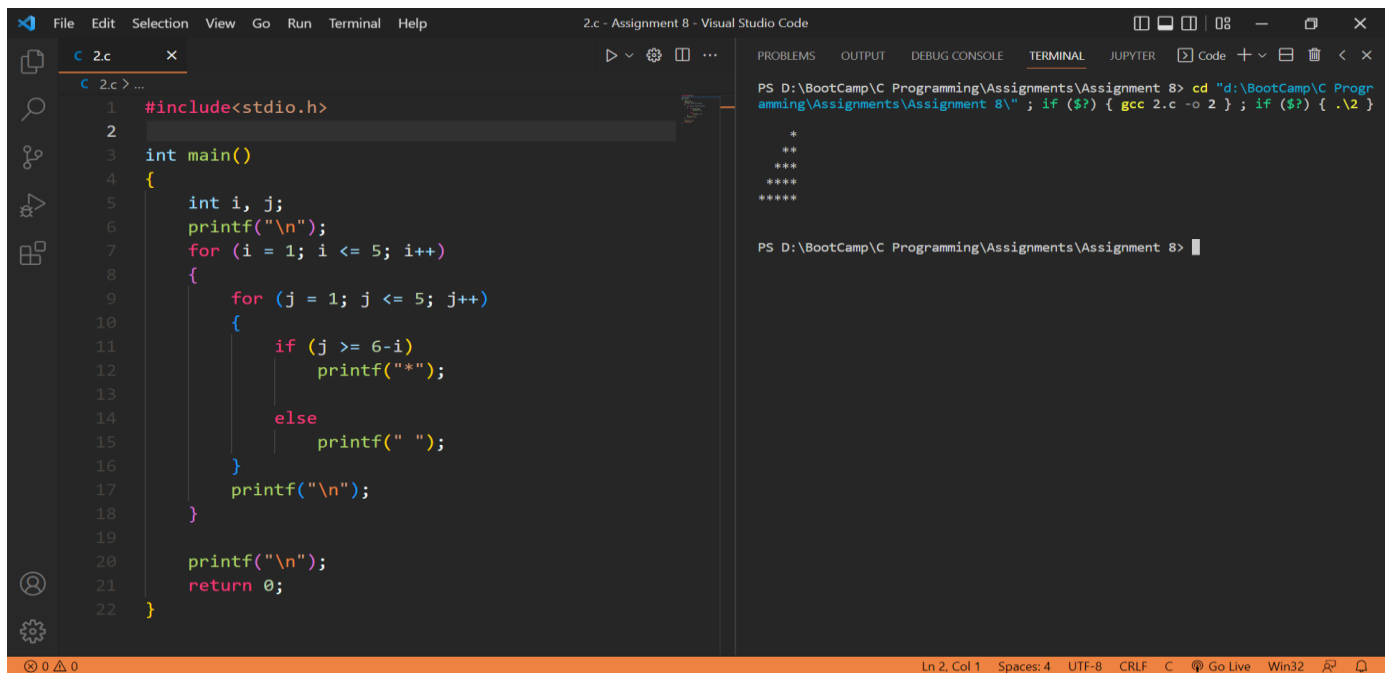
The screenshot shows a Visual Studio Code editor with a C file named `1.c`. The code is as follows:

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7     for (i = 1; i <= 5; i++)
8     {
9         for (j = 1; j <= 5; j++)
10        {
11            if (j <= i)
12                printf("*");
13            else
14                printf(" ");
15        }
16        printf("\n");
17    }
18
19    printf("\n");
20    return 0;
21 }
```

The terminal on the right shows the execution of the program, which produces the following output:

```
PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 1.c -o 1 }; if ($?) { .\1 }
*
**
***
****
*****
PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q2.



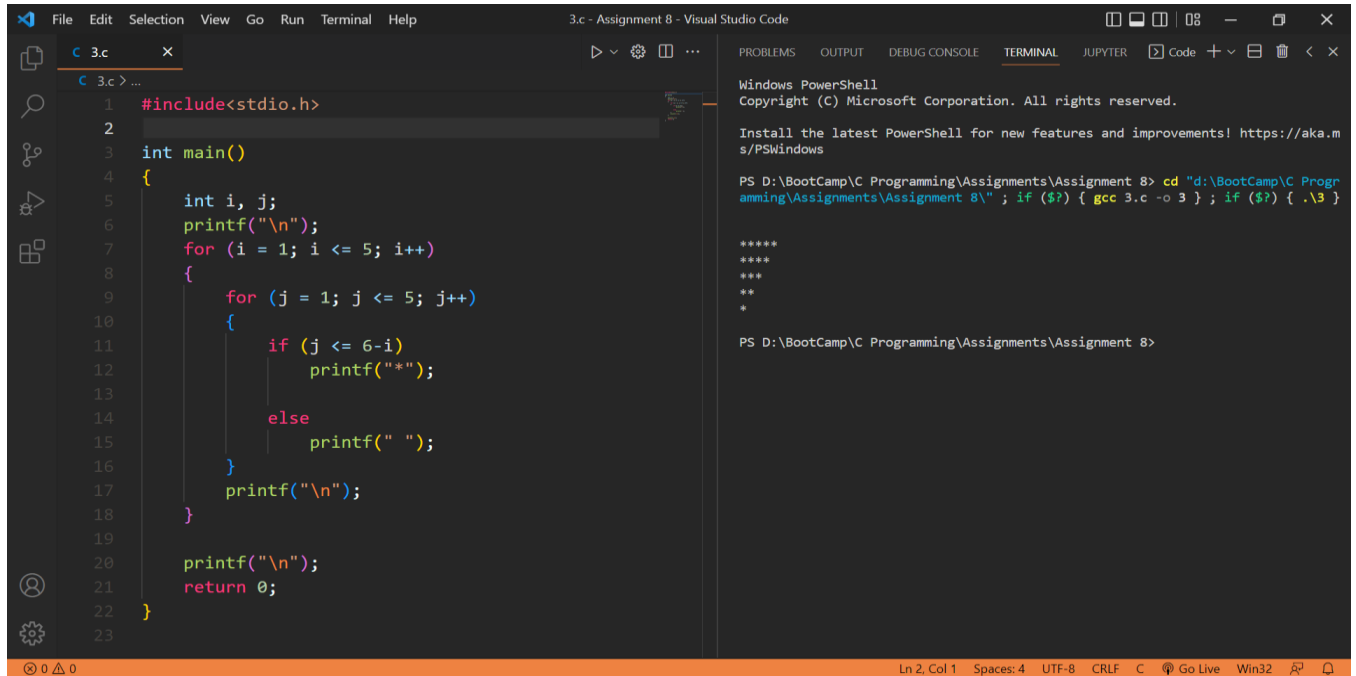
The screenshot shows a Visual Studio Code editor with a C file named `2.c`. The code is as follows:

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7     for (i = 1; i <= 5; i++)
8     {
9         for (j = 1; j <= 5; j++)
10        {
11            if (j >= 6-i)
12                printf("*");
13            else
14                printf(" ");
15        }
16        printf("\n");
17    }
18
19    printf("\n");
20    return 0;
21 }
```

The terminal on the right shows the execution of the program, which produces the following output:

```
PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 2.c -o 2 }; if ($?) { .\2 }
*
**
***
****
*****
PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q3.



The screenshot shows a Visual Studio Code editor with a C program for Q3. The code is as follows:

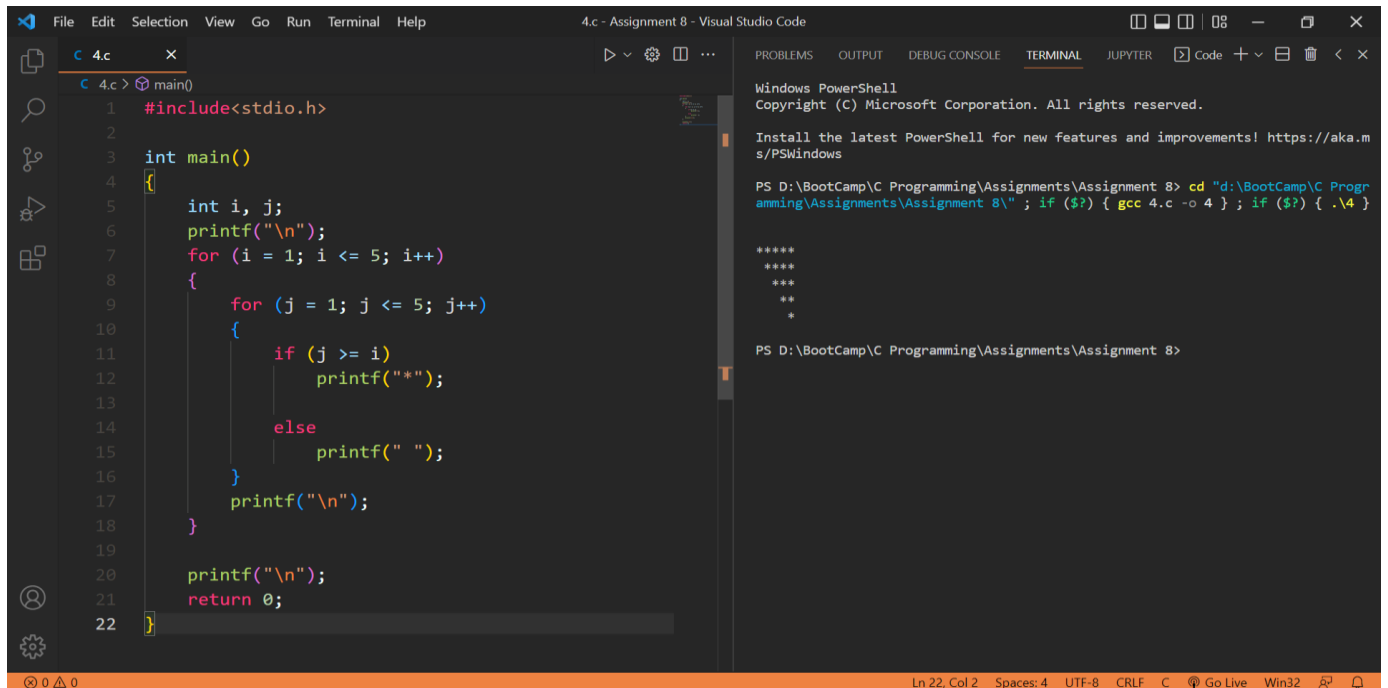
```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7     for (i = 1; i <= 5; i++)
8     {
9         for (j = 1; j <= 5; j++)
10        {
11            if (j <= 6-i)
12                printf("*");
13            else
14                printf(" ");
15        }
16        printf("\n");
17    }
18    printf("\n");
19    return 0;
20 }
```

The terminal output shows the execution of the program, which prints a pattern of asterisks and spaces. The pattern is a right-angled triangle of asterisks, with the number of asterisks in each row decreasing from 5 to 1. The output is as follows:

```
*****
****
***
**
*

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q4.



The screenshot shows a Visual Studio Code editor with a C program for Q4. The code is as follows:

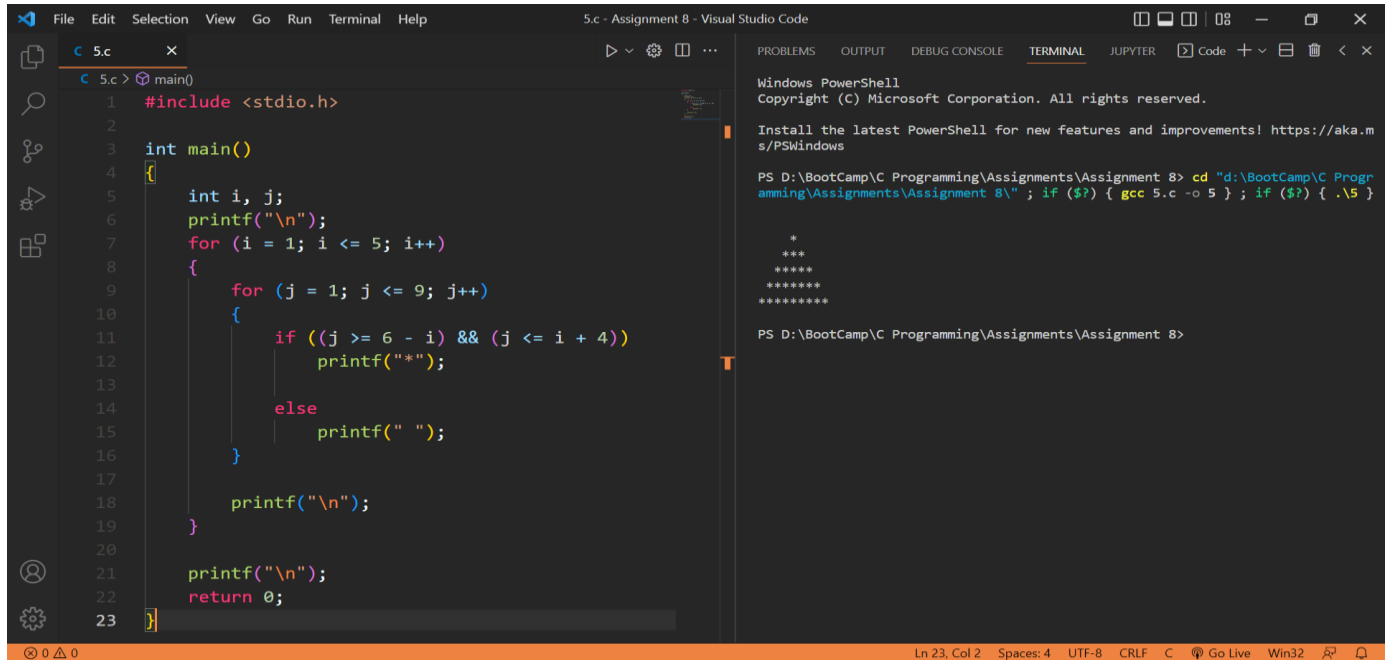
```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7     for (i = 1; i <= 5; i++)
8     {
9         for (j = 1; j <= 5; j++)
10        {
11            if (j >= i)
12                printf("*");
13            else
14                printf(" ");
15        }
16        printf("\n");
17    }
18    printf("\n");
19    return 0;
20 }
```

The terminal output shows the execution of the program, which prints a pattern of asterisks and spaces. The pattern is a right-angled triangle of asterisks, with the number of asterisks in each row decreasing from 5 to 1. The output is as follows:

```
*****
****
***
**
*

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q5.



The screenshot shows a Visual Studio Code editor with a C program named `5.c` open. The program is a C program that prints a pattern of asterisks. The code is as follows:

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7     for (i = 1; i <= 5; i++)
8     {
9         for (j = 1; j <= 9; j++)
10        {
11            if ((j >= 6 - i) && (j <= i + 4))
12                printf("*");
13            else
14                printf(" ");
15        }
16        printf("\n");
17    }
18    printf("\n");
19    return 0;
20 }
```

The terminal output shows the pattern of asterisks printed by the program:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

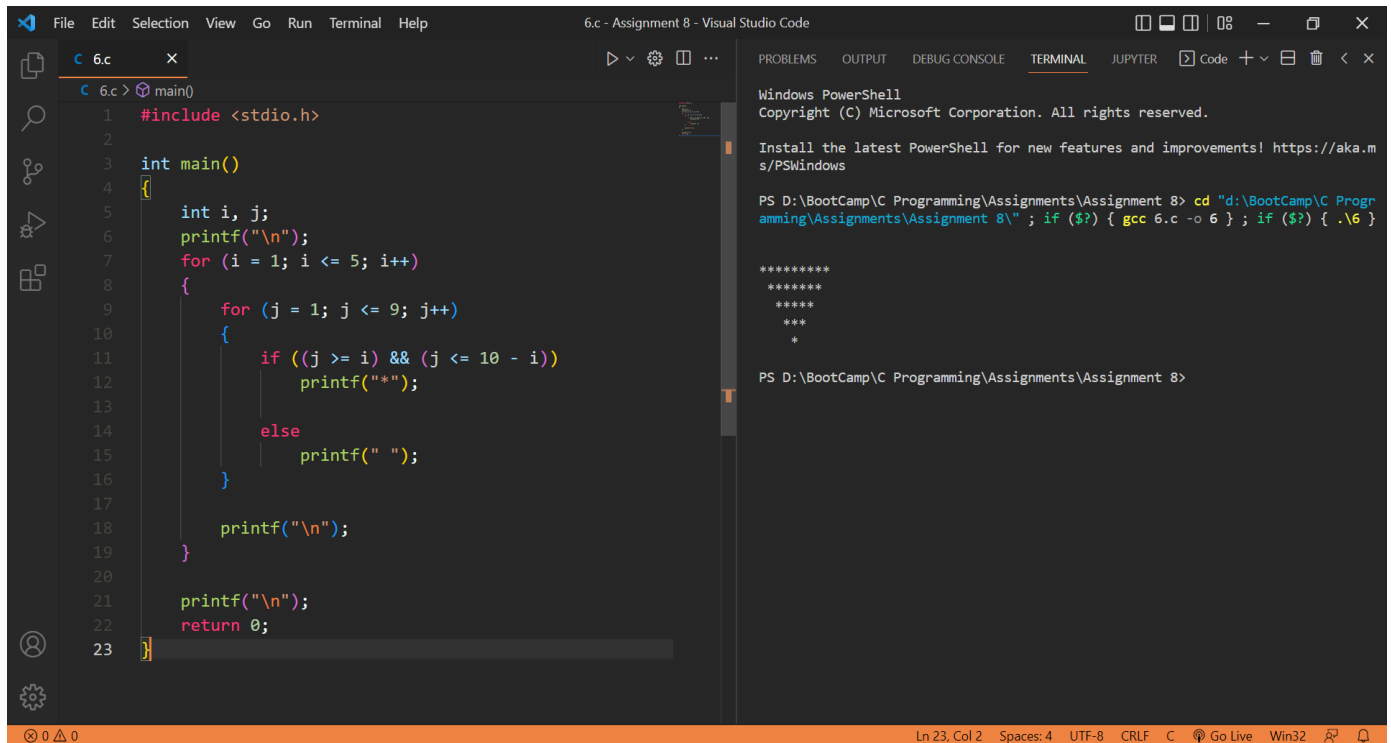
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 5.c -o 5 }; if ($?) { .\5 }

*
***
*****
*****
*****

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q6.



The screenshot shows a Visual Studio Code editor with a C program named `6.c` open. The program is a C program that prints a pattern of asterisks. The code is as follows:

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7     for (i = 1; i <= 5; i++)
8     {
9         for (j = 1; j <= 9; j++)
10        {
11            if ((j >= i) && (j <= 10 - i))
12                printf("*");
13            else
14                printf(" ");
15        }
16        printf("\n");
17    }
18    printf("\n");
19    return 0;
20 }
```

The terminal output shows the pattern of asterisks printed by the program:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

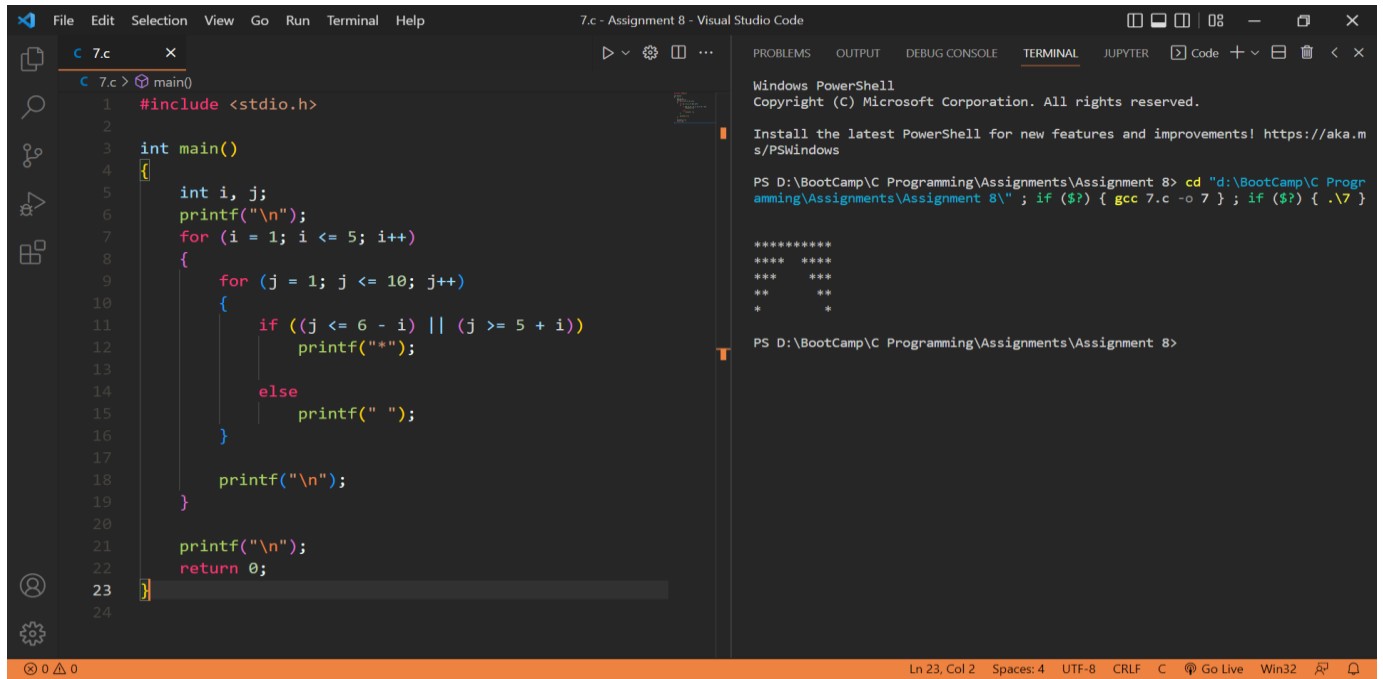
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 6.c -o 6 }; if ($?) { .\6 }

*****
*****
*****
***
*

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q7.



```
7.c - Assignment 8 - Visual Studio Code

1 #include <stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7     for (i = 1; i <= 5; i++)
8     {
9         for (j = 1; j <= 10; j++)
10        {
11            if ((j <= 6 - i) || (j >= 5 + i))
12                printf("*");
13
14            else
15                printf(" ");
16        }
17
18        printf("\n");
19    }
20
21    printf("\n");
22    return 0;
23 }
24
```

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

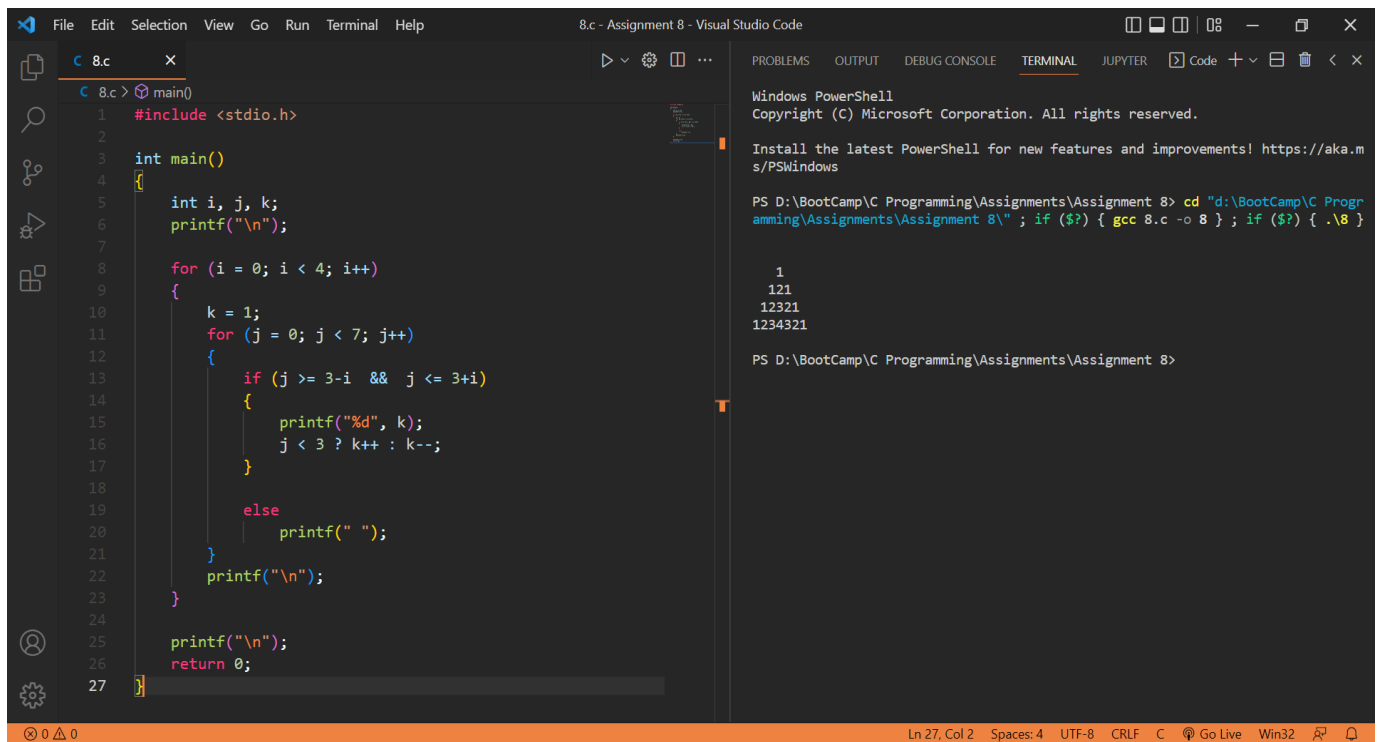
Install the latest PowerShell for new features and improvements! <https://aka.ms/PSWindows>

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if (\$?) { gcc 7.c -o 7 }; if (\$?) { .\7 }

**** ****
*** ***
** **
* *

PS D:\BootCamp\C Programming\Assignments\Assignment 8>

Q8.



```
8.c - Assignment 8 - Visual Studio Code

1 #include <stdio.h>
2
3 int main()
4 {
5     int i, j, k;
6     printf("\n");
7
8     for (i = 0; i < 4; i++)
9     {
10        k = 1;
11        for (j = 0; j < 7; j++)
12        {
13            if (j >= 3-i && j <= 3+i)
14            {
15                printf("%d", k);
16                j < 3 ? k++ : k--;
17            }
18
19            else
20                printf(" ");
21        }
22        printf("\n");
23    }
24
25    printf("\n");
26    return 0;
27 }
```

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

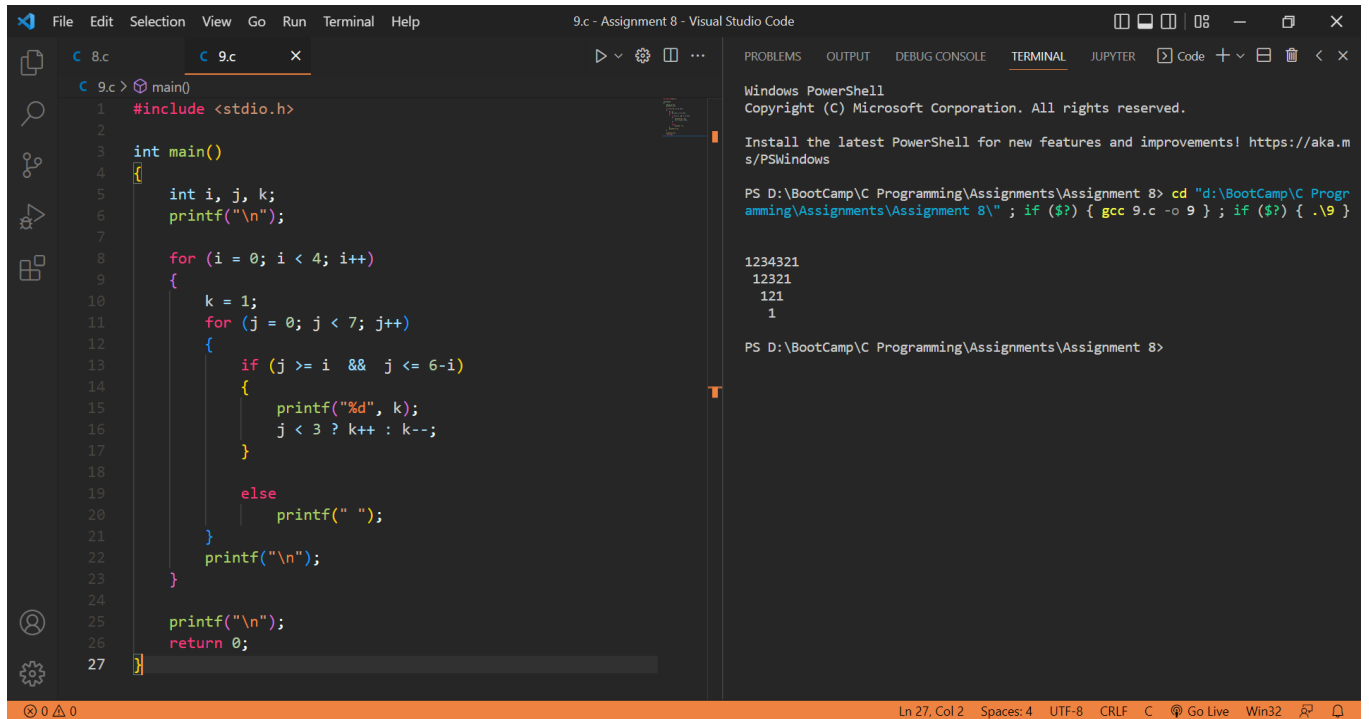
Install the latest PowerShell for new features and improvements! <https://aka.ms/PSWindows>

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if (\$?) { gcc 8.c -o 8 }; if (\$?) { .\8 }

1
121
12321
1234321

PS D:\BootCamp\C Programming\Assignments\Assignment 8>

Q9.

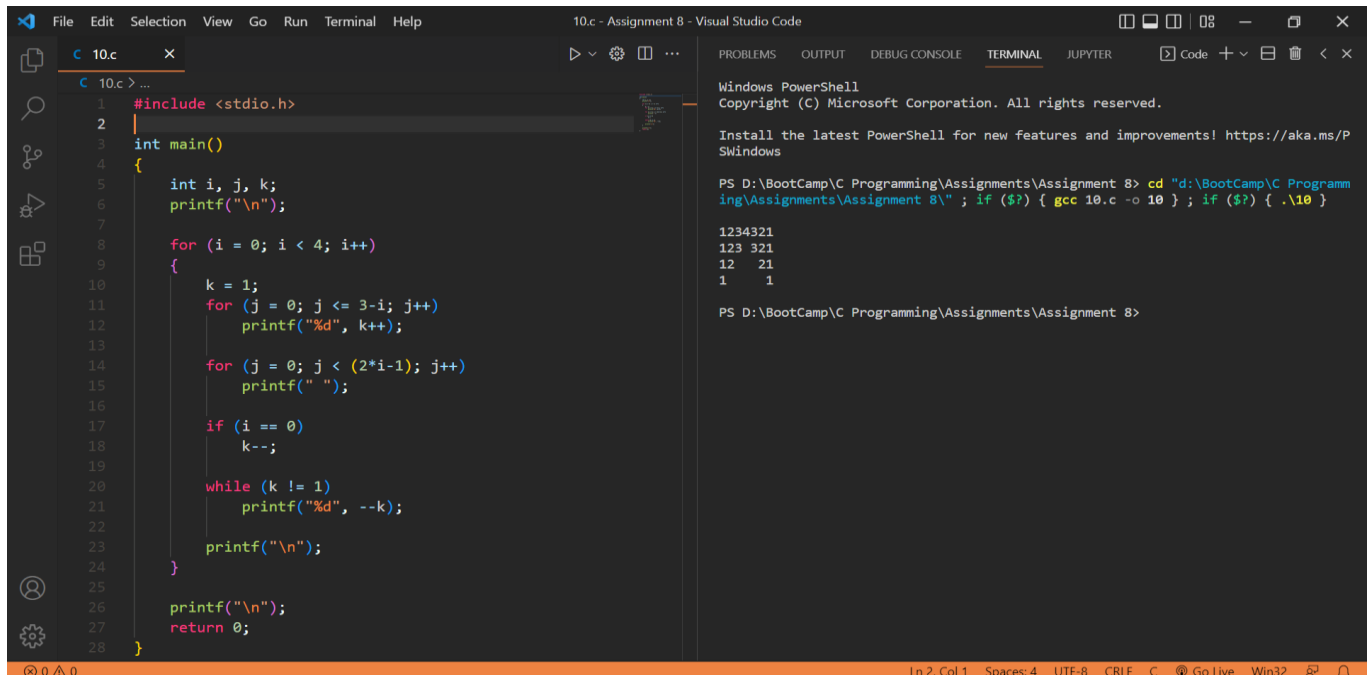


The screenshot shows a Visual Studio Code window with a C file named 9.c. The code defines a main function that uses nested loops to print a pattern of numbers. The terminal output shows the execution of the program, which prints the following pattern:

```
1234321
12321
121
1
```

The status bar at the bottom indicates the current line is 27, column 2, with 4 spaces, UTF-8 encoding, and CRLF line endings.

Q10.

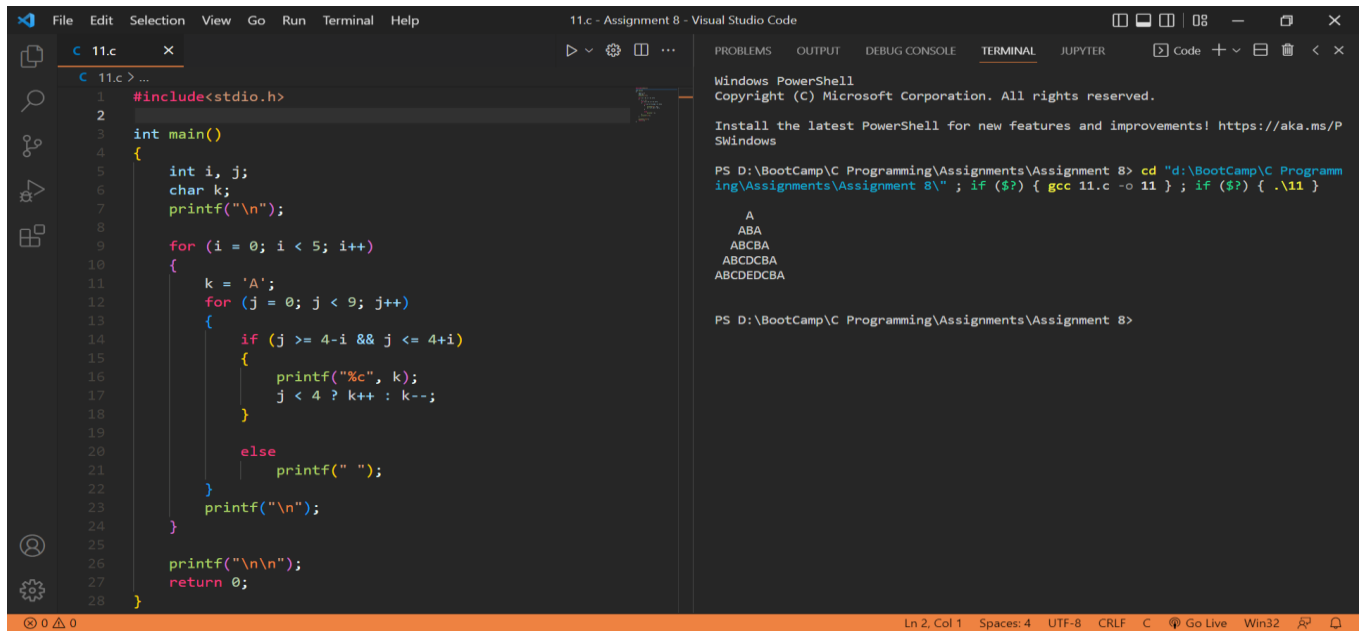


The screenshot shows a Visual Studio Code window with a C file named 10.c. The code defines a main function that uses nested loops and conditional statements to print a pattern of numbers. The terminal output shows the execution of the program, which prints the following pattern:

```
1234321
123 321
12 21
1 1
```

The status bar at the bottom indicates the current line is 28, column 1, with 4 spaces, UTF-8 encoding, and CRLF line endings.

Q11.



The screenshot shows a Visual Studio Code window with a C file named `11.c`. The code is as follows:

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     char k;
7     printf("\n");
8
9     for (i = 0; i < 5; i++)
10    {
11        k = 'A';
12        for (j = 0; j < 9; j++)
13        {
14            if (j >= 4-i && j <= 4+i)
15            {
16                printf("%c", k);
17                j < 4 ? k++ : k--;
18            }
19            else
20                printf(" ");
21        }
22        printf("\n");
23    }
24
25    printf("\n\n");
26    return 0;
27 }
```

The terminal output shows the execution of the program, which prints a diamond pattern of 'A's:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

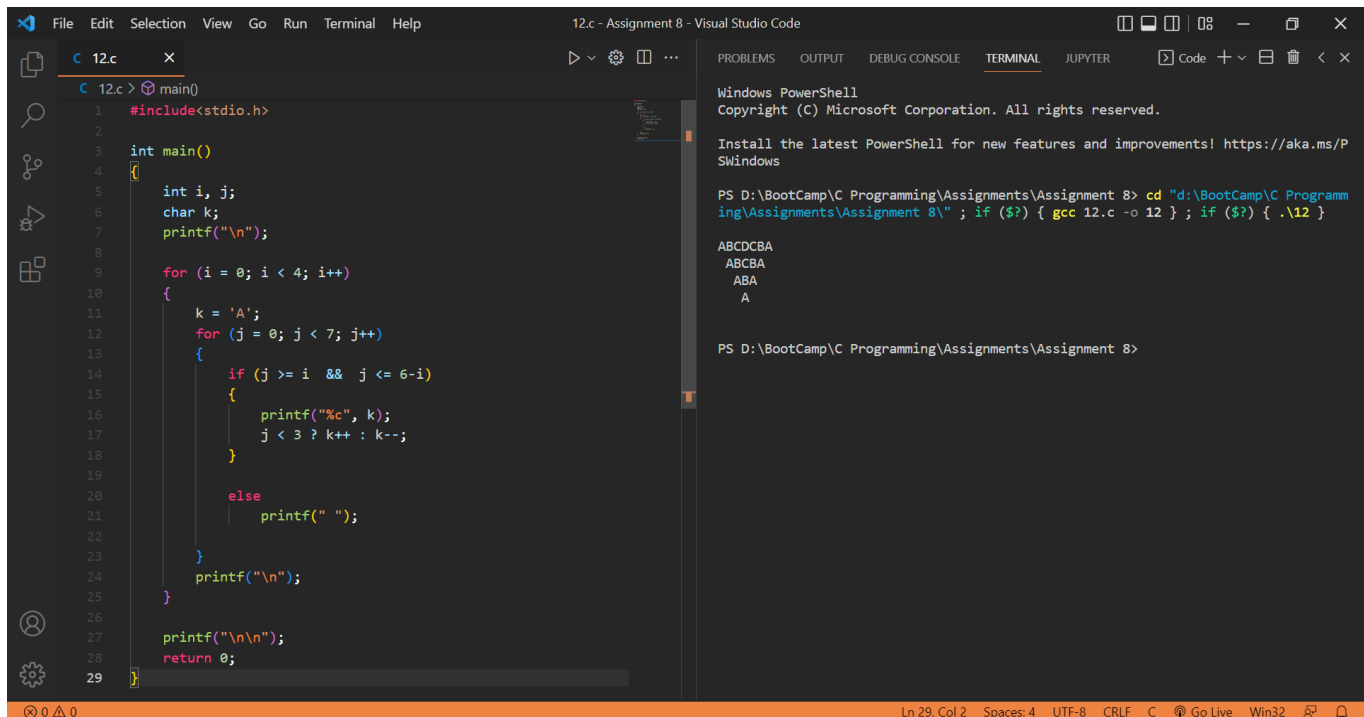
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\" ; if ($?) { gcc 11.c -o 11 } ; if ($?) { .\11 }

  A
 ABA
ABCA
ABCDCBA
ABCDEDCBA

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q12.



The screenshot shows a Visual Studio Code window with a C file named `12.c`. The code is as follows:

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     char k;
7     printf("\n");
8
9     for (i = 0; i < 4; i++)
10    {
11        k = 'A';
12        for (j = 0; j < 7; j++)
13        {
14            if (j >= i && j <= 6-i)
15            {
16                printf("%c", k);
17                j < 3 ? k++ : k--;
18            }
19            else
20                printf(" ");
21        }
22        printf("\n");
23    }
24
25    printf("\n\n");
26    return 0;
27 }
```

The terminal output shows the execution of the program, which prints a diamond pattern of 'A's:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

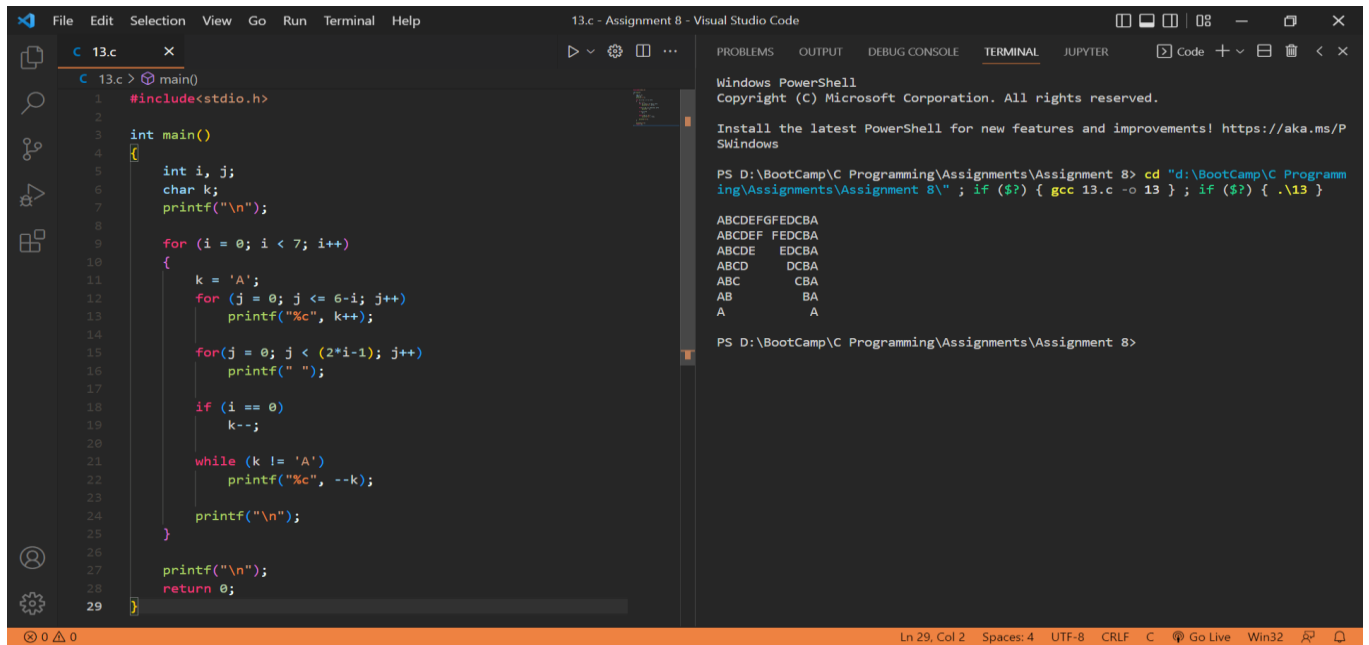
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\" ; if ($?) { gcc 12.c -o 12 } ; if ($?) { .\12 }

ABCDEDCBA
ABCBA
ABA
A

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q13.



The screenshot shows a Visual Studio Code window titled "13.c - Assignment 8 - Visual Studio Code". The editor displays a C program named "13.c" with the following code:

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     char k;
7     printf("\n");
8
9     for (i = 0; i < 7; i++)
10    {
11        k = 'A';
12        for (j = 0; j <= 6-i; j++)
13            printf("%c", k++);
14
15        for(j = 0; j < (2*i-1); j++)
16            printf(" ");
17
18        if (i == 0)
19            k--;
20
21        while (k != 'A')
22            printf("%c", --k);
23
24        printf("\n");
25    }
26
27    printf("\n");
28    return 0;
29 }
```

The terminal output shows the execution of the program, which prints a diamond pattern of asterisks:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

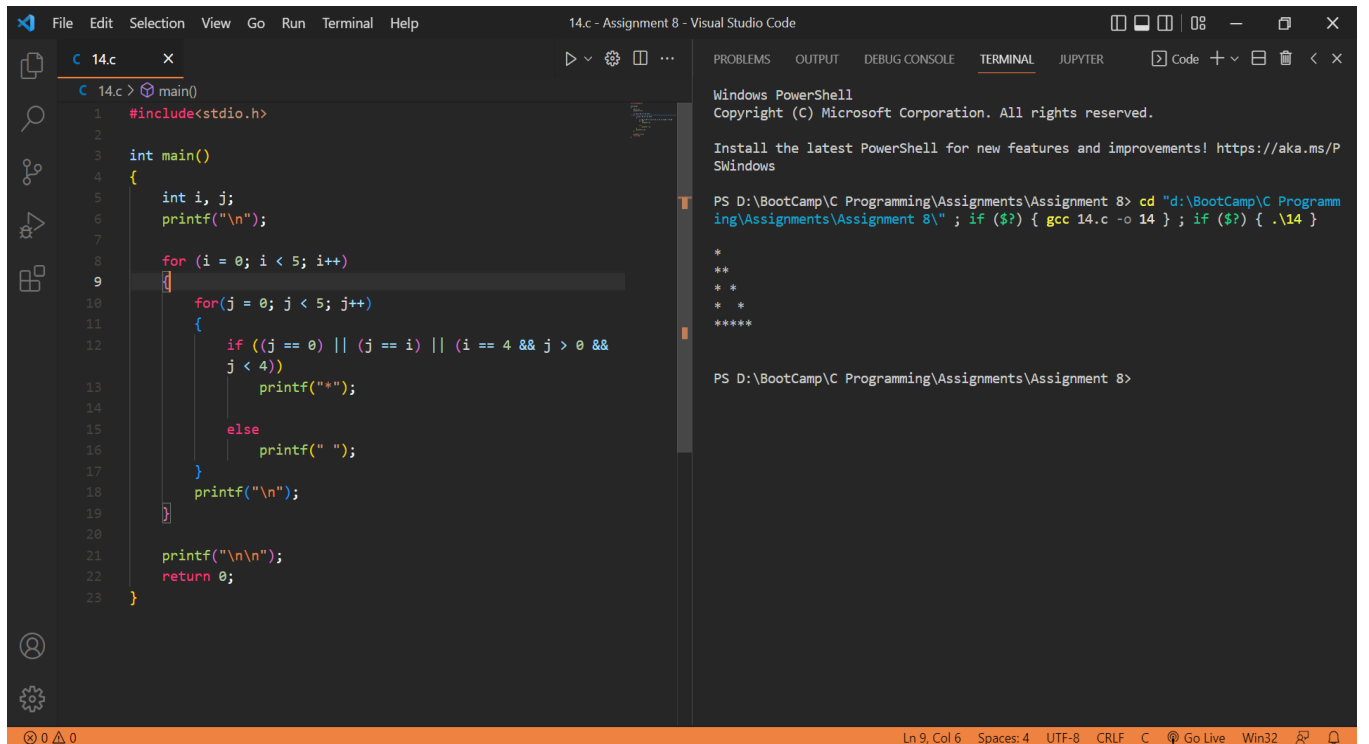
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\" ; if ($?) { gcc 13.c -o 13 } ; if ($?) { .\13 }

ABCDEFGFEDCBA
ABCDEF FEDCBA
ABCDE EDCBA
ABCD DCBA
ABC CBA
AB BA
A A

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q14.



The screenshot shows a Visual Studio Code window titled "14.c - Assignment 8 - Visual Studio Code". The editor displays a C program named "14.c" with the following code:

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7
8     for (i = 0; i < 5; i++)
9     {
10        for(j = 0; j < 5; j++)
11        {
12            if ((j == 0) || (j == i) || (i == 4 && j > 0 && j < 4))
13                printf("*");
14
15            else
16                printf(" ");
17
18        }
19        printf("\n");
20    }
21
22    printf("\n\n");
23    return 0;
24 }
```

The terminal output shows the execution of the program, which prints a diamond pattern of asterisks:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

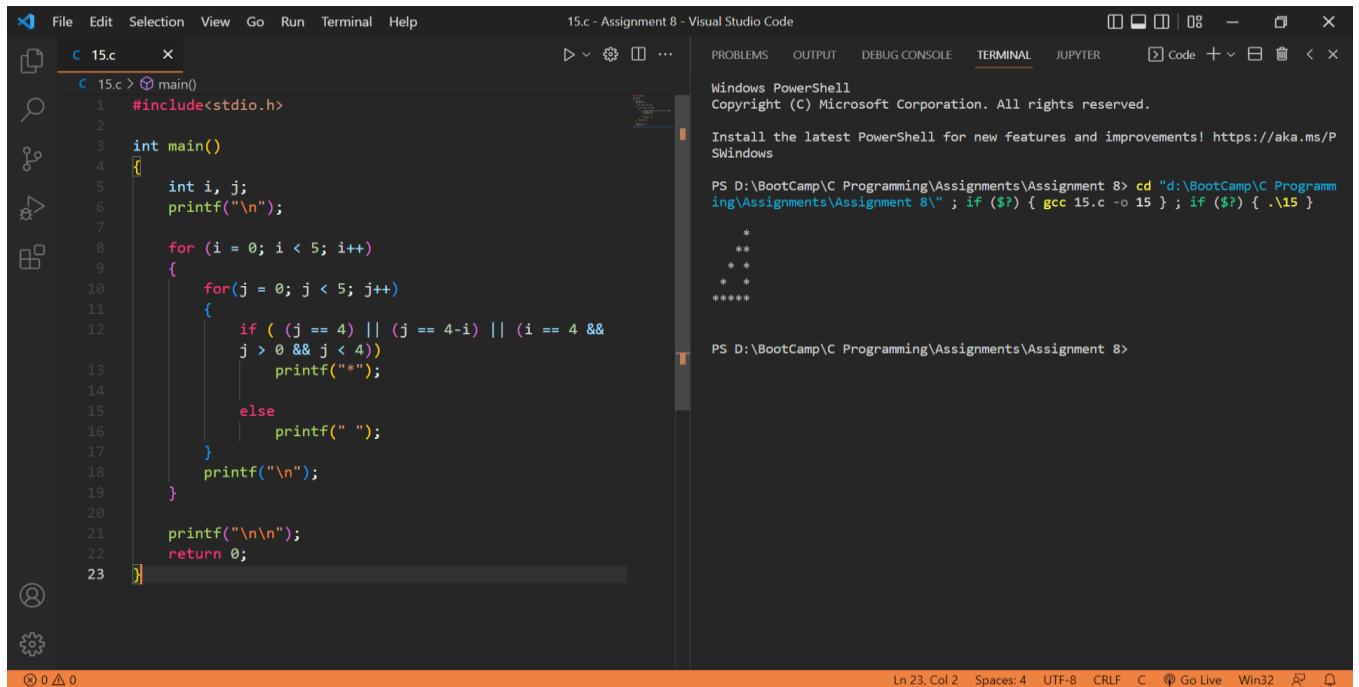
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\" ; if ($?) { gcc 14.c -o 14 } ; if ($?) { .\14 }

*
**
***
****
*****

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Q15.



The screenshot shows a Visual Studio Code editor with a C program for Q15. The program uses nested loops to print a pattern of asterisks. The terminal shows the command to compile and run the program, resulting in the following output:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

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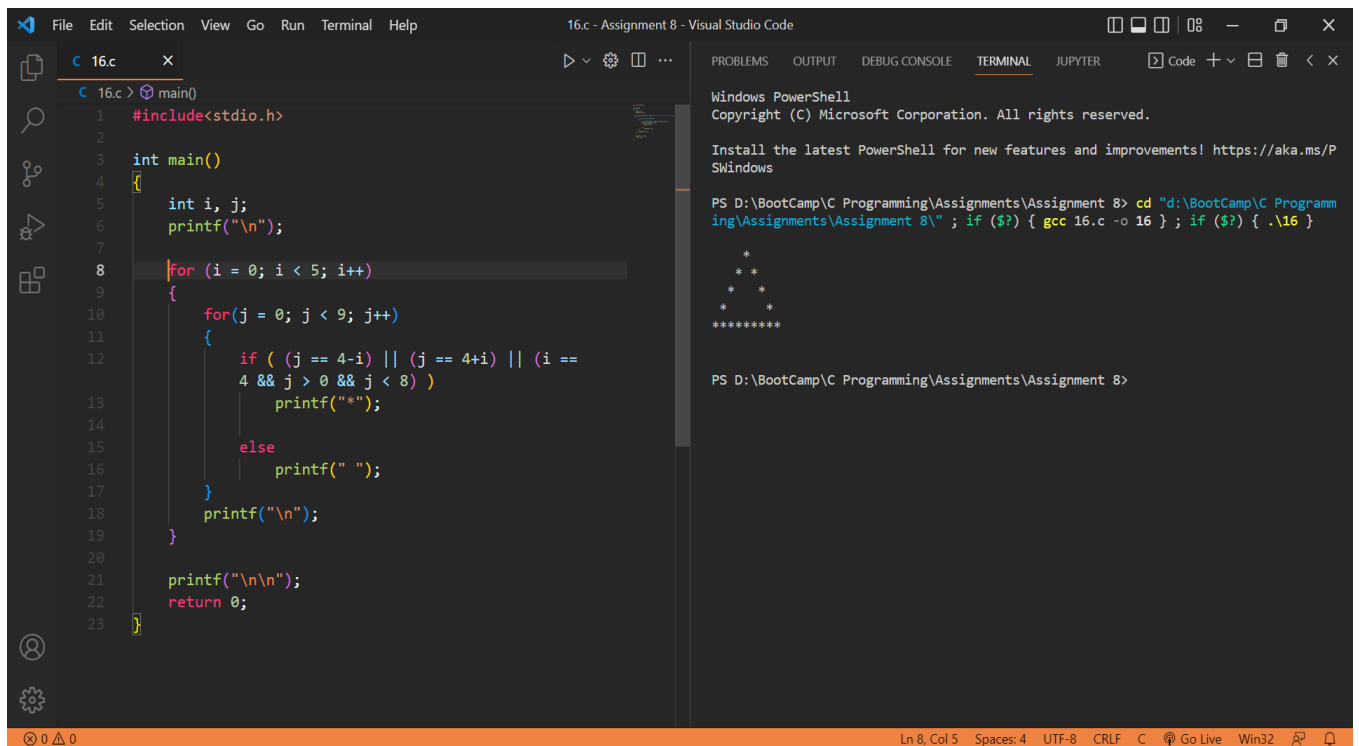
PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 15.c -o 15 }; if ($?) { .\15 }

*
*
*
*
*****

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

```
15.c - Assignment 8 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
C 15.c x
C 15.c > main()
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7
8     for (i = 0; i < 5; i++)
9     {
10         for(j = 0; j < 5; j++)
11         {
12             if ( (j == 4) || (j == 4-i) || (i == 4 && j > 0 && j < 4) )
13                 printf("*");
14             else
15                 printf(" ");
16         }
17         printf("\n");
18     }
19
20     printf("\n\n");
21     return 0;
22 }
23
```

Q16.



The screenshot shows a Visual Studio Code editor with a C program for Q16. The program uses nested loops to print a pattern of asterisks. The terminal shows the command to compile and run the program, resulting in the following output:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

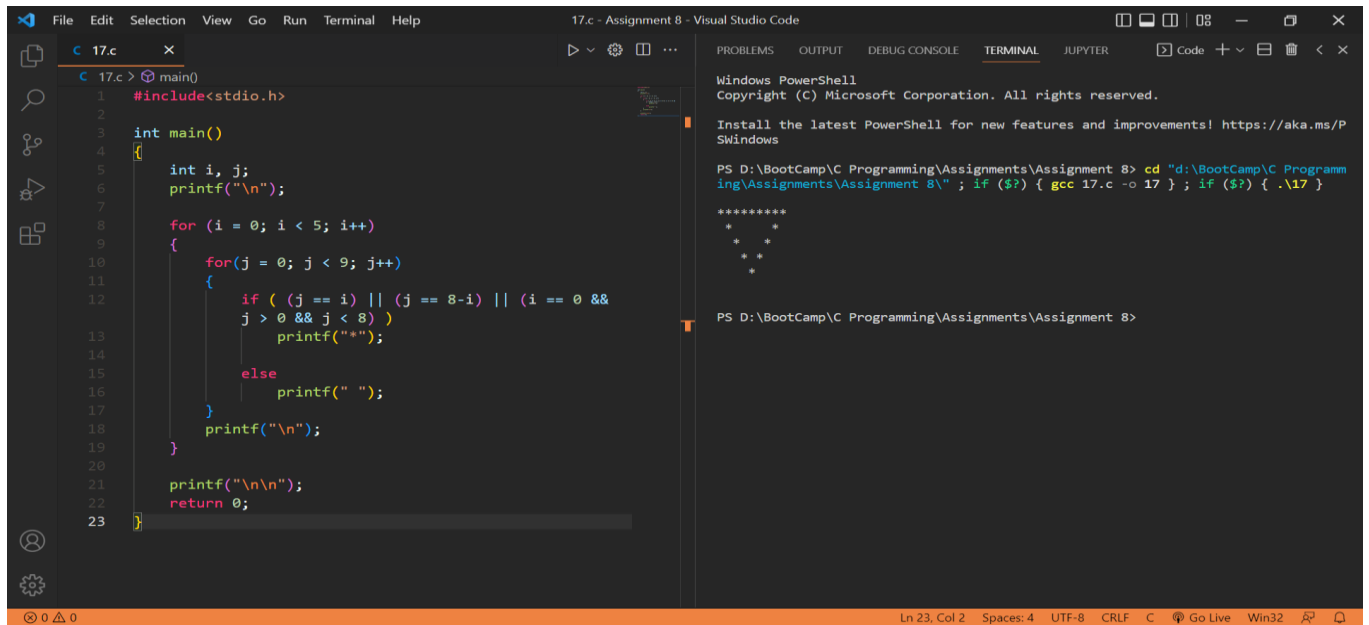
PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 16.c -o 16 }; if ($?) { .\16 }

*
*
*
*
*****

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

```
16.c - Assignment 8 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
C 16.c x
C 16.c > main()
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7
8     for (i = 0; i < 5; i++)
9     {
10         for(j = 0; j < 9; j++)
11         {
12             if ( (j == 4-i) || (j == 4+i) || (i == 4 && j > 0 && j < 8) )
13                 printf("*");
14             else
15                 printf(" ");
16         }
17         printf("\n");
18     }
19
20     printf("\n\n");
21     return 0;
22 }
23
```


Q17.



The screenshot shows a Visual Studio Code editor with a C program for Q17. The program uses nested loops to print a pattern of asterisks. The terminal shows the command to compile and run the program, and the resulting output is a 5x9 grid of asterisks.

```
17.c - Assignment 8 - Visual Studio Code
```

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6     printf("\n");
7
8     for (i = 0; i < 5; i++)
9     {
10        for(j = 0; j < 9; j++)
11        {
12            if ( (j == i) || (j == 8-i) || (i == 0 && j > 0 && j < 8) )
13                printf("*");
14            else
15                printf(" ");
16        }
17        printf("\n");
18    }
19
20    printf("\n\n");
21    return 0;
22 }
23
```

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

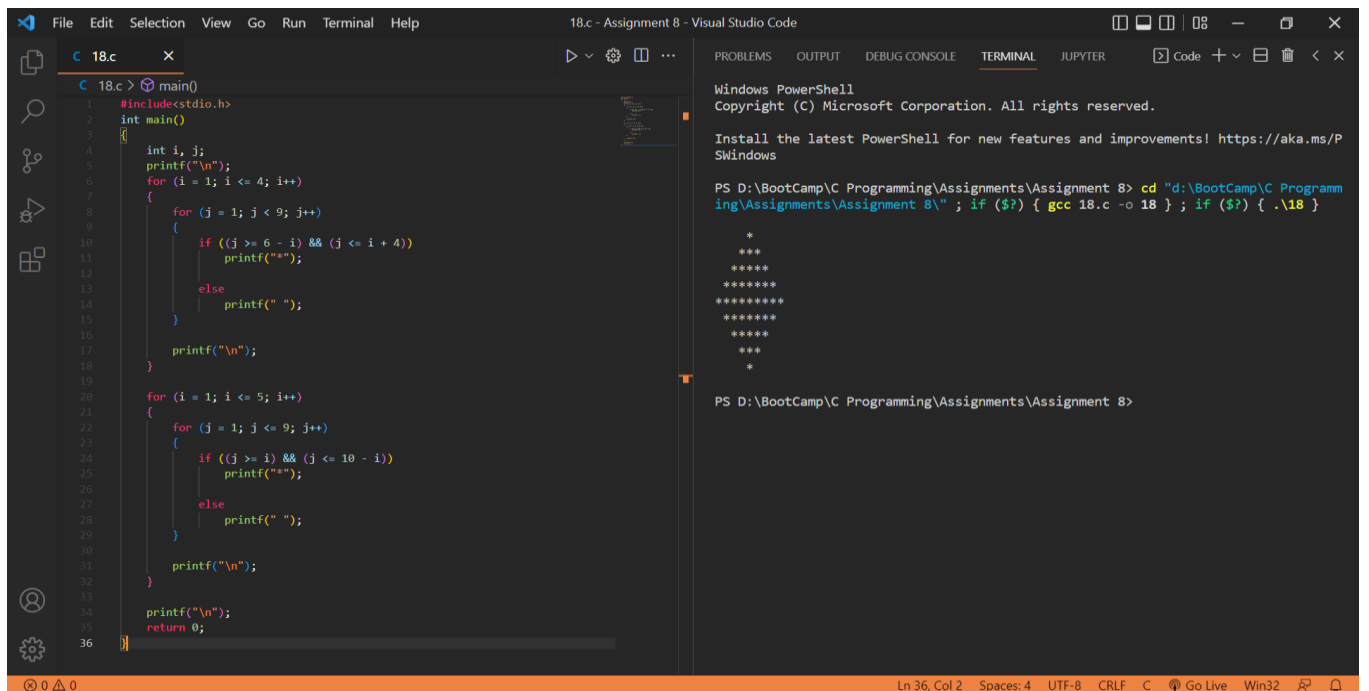
PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 17.c -o 17 }; if ($?) { .\17 }

*****
*   *
*   *
*   *
*   *
*****

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Ln 23, Col 2 Spaces: 4 UTF-8 CRLF C Go Live Win32

Q18.



The screenshot shows a Visual Studio Code editor with a C program for Q18. The program uses nested loops to print a pattern of asterisks. The terminal shows the command to compile and run the program, and the resulting output is a 5x9 grid of asterisks.

```
18.c - Assignment 8 - Visual Studio Code
```

```
1 #include<stdio.h>
2 int main()
3 {
4     int i, j;
5     printf("\n");
6     for (i = 1; i <= 4; i++)
7     {
8         for (j = 1; j <= 9; j++)
9         {
10            if ((j >= 6 - i) && (j <= i + 4))
11                printf("*");
12            else
13                printf(" ");
14        }
15        printf("\n");
16    }
17
18    for (i = 1; i <= 5; i++)
19    {
20        for (j = 1; j <= 9; j++)
21        {
22            if ((j >= i) && (j <= 10 - i))
23                printf("*");
24            else
25                printf(" ");
26        }
27        printf("\n");
28    }
29
30    printf("\n\n");
31    return 0;
32 }
33
34 printf("\n");
35 return 0;
36
```

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

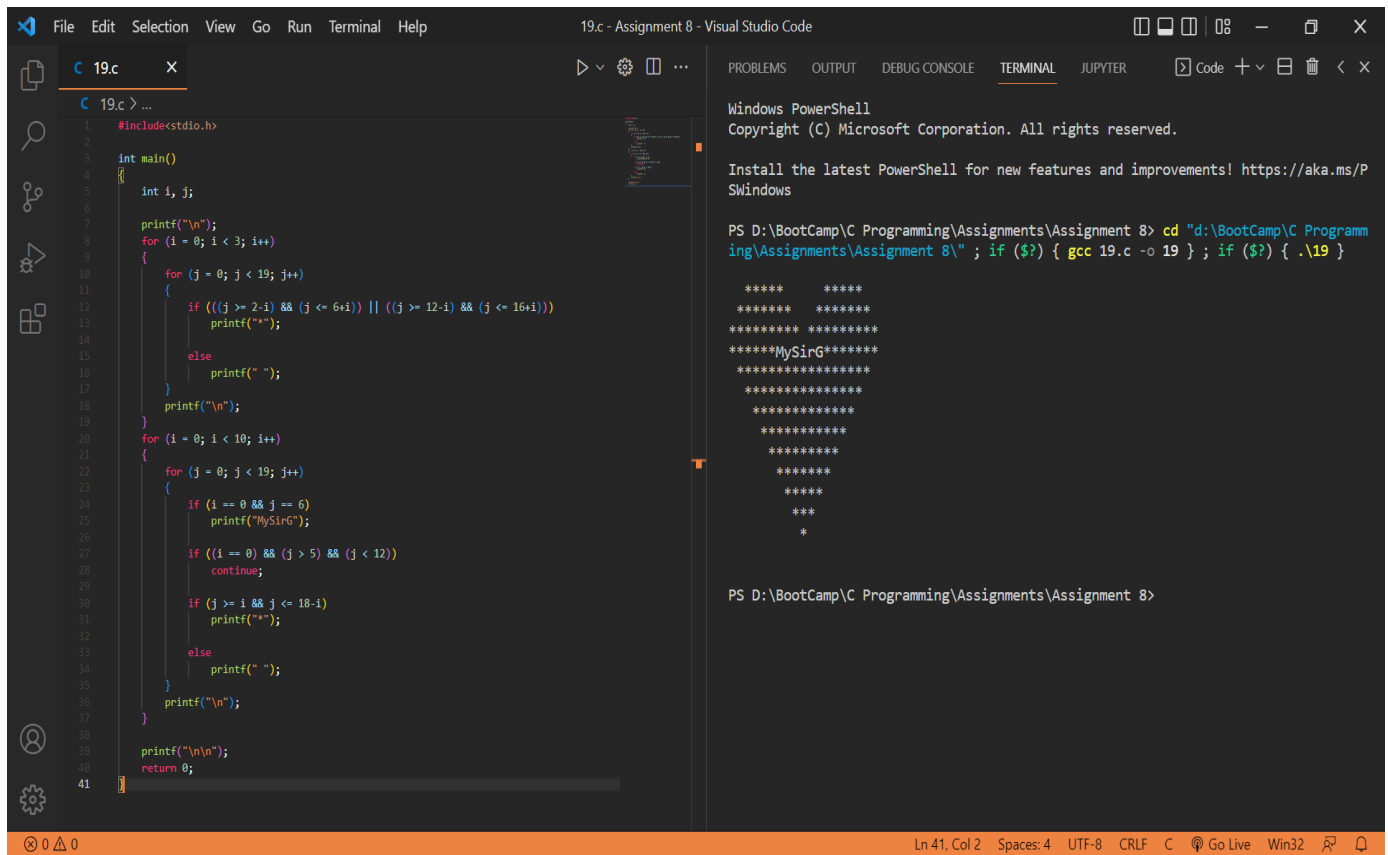
PS D:\BootCamp\C Programming\Assignments\Assignment 8> cd "d:\BootCamp\C Programming\Assignments\Assignment 8\"; if ($?) { gcc 18.c -o 18 }; if ($?) { .\18 }

*
***
*****
*****
*****
*****
***
*

PS D:\BootCamp\C Programming\Assignments\Assignment 8>
```

Ln 36, Col 2 Spaces: 4 UTF-8 CRLF C Go Live Win32

Q19.



The image shows a Visual Studio Code editor window titled "19.c - Assignment 8 - Visual Studio Code". The editor displays a C program in a file named "19.c". The program includes `<stdio.h>` and defines a `main` function. It uses two nested loops to iterate over values of `i` and `j` from 0 to 19. The program prints a pattern of asterisks and the string "MySirG" based on specific conditions involving `i` and `j`.

```
1 #include<stdio.h>
2
3 int main()
4 {
5     int i, j;
6
7     printf("\n");
8     for (i = 0; i < 3; i++)
9     {
10         for (j = 0; j < 19; j++)
11         {
12             if (((j >= 2*i) && (j <= 6+i)) || ((j >= 12-i) && (j <= 16+i)))
13                 printf("*");
14             else
15                 printf(" ");
16         }
17         printf("\n");
18     }
19     for (i = 0; i < 10; i++)
20     {
21         for (j = 0; j < 19; j++)
22         {
23             if (i == 0 && j == 6)
24                 printf("MySirG");
25             if ((i == 0) && (j > 5) && (j < 12))
26                 continue;
27             if (j >= i && j <= 18-i)
28                 printf("");
29             else
30                 printf(" ");
31         }
32         printf("\n");
33     }
34     printf("\n\n");
35     return 0;
36 }
```

The terminal window on the right shows the execution of the program. It displays the output pattern, which consists of a grid of asterisks with the string "MySirG" printed in the center. The terminal prompt is `PS D:\BootCamp\C Programming\Assignments\Assignment 8>`.