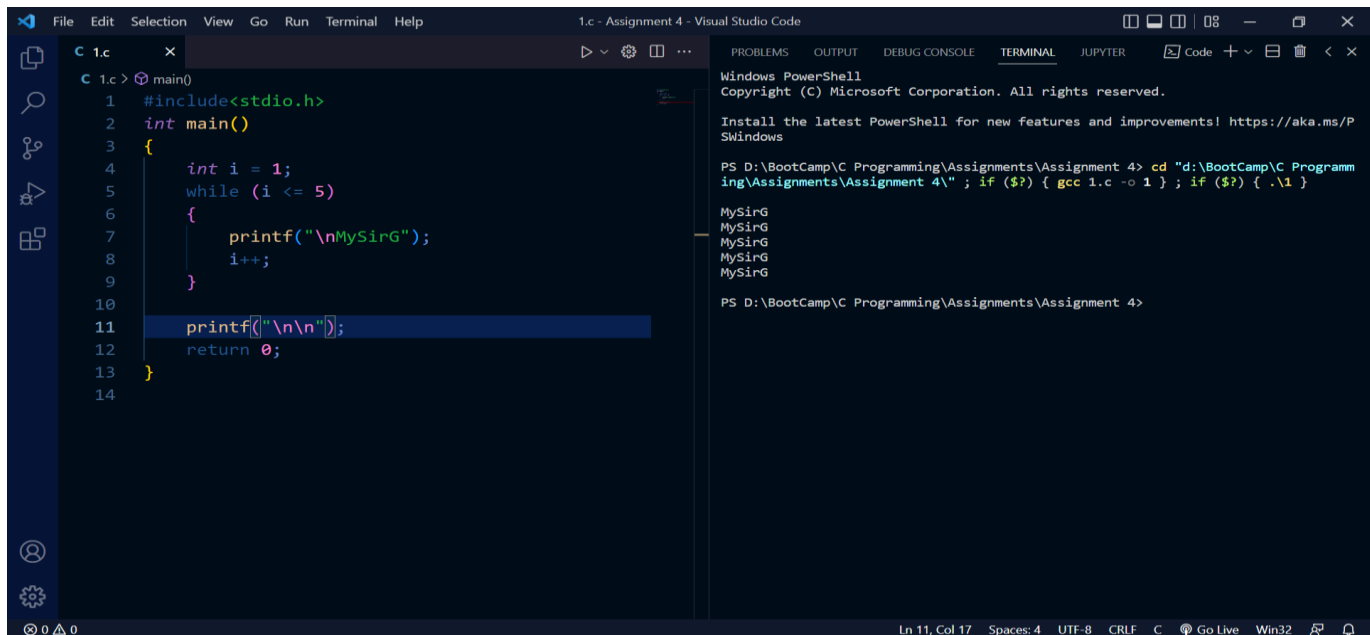


# ASSIGNMENT – 04

## (Iterative Control Statements)

Q1.



The screenshot shows a Visual Studio Code editor with a C program named `1.c`. The program uses a `while` loop to print "MySirG" five times. The terminal on the right shows the command to compile and run the program, resulting in the output "MySirG" printed five times on separate lines.

```
1.c > main()
1 #include<stdio.h>
2 int main()
3 {
4     int i = 1;
5     while (i <= 5)
6     {
7         printf("\nMySirG");
8         i++;
9     }
10
11     printf("\n\n");
12     return 0;
13 }
14
```

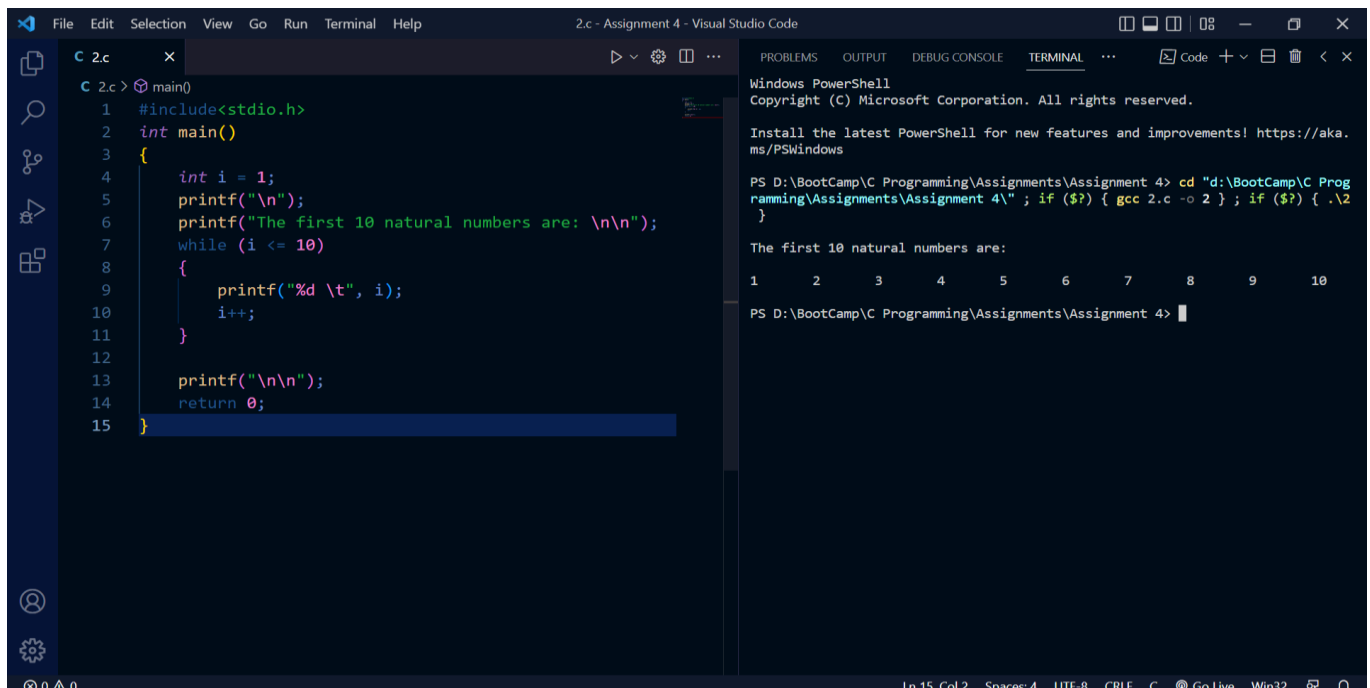
Terminal Output:

```
PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\"; if ($?) { gcc 1.c -o 1 }; if ($?) { .\1 }

MySirG
MySirG
MySirG
MySirG
MySirG

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```

Q2.



The screenshot shows a Visual Studio Code editor with a C program named `2.c`. The program uses a `while` loop to print the first 10 natural numbers. The terminal on the right shows the command to compile and run the program, resulting in the output "The first 10 natural numbers are:" followed by the numbers 1 through 10 printed on the same line, separated by spaces.

```
2.c > main()
1 #include<stdio.h>
2 int main()
3 {
4     int i = 1;
5     printf("\n");
6     printf("The first 10 natural numbers are: \n\n");
7     while (i <= 10)
8     {
9         printf("%d \t", i);
10        i++;
11    }
12
13    printf("\n\n");
14    return 0;
15 }
```

Terminal Output:

```
PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\"; if ($?) { gcc 2.c -o 2 }; if ($?) { .\2 }

The first 10 natural numbers are:

1 2 3 4 5 6 7 8 9 10

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```

Q3.

The screenshot shows a Visual Studio Code editor with a C file named `3.c`. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int i = 10;
5     printf("\n");
6     printf("The first 10 natural numbers in reverse order are: \n\n");
7     while (i >= 1)
8     {
9         printf("%d \t", i);
10        i--;
11    }
12    printf("\n\n");
13    return 0;
14 }
```

The output window on the right shows the execution results in a Windows PowerShell terminal:

```
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PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 3.c -o 3 } ; if ($?) { .\3 }

The first 10 natural numbers in reverse order are:

10    9    8    7    6    5    4    3    2    1

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```

Q4.

The screenshot shows a Visual Studio Code editor with a C file named `4.c`. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int i = 1;
5     printf("\n");
6     printf("The first 10 odd natural numbers are: \n\n");
7     while (i <= 10)
8     {
9         printf("%d \t", 2*i-1);
10        i++;
11    }
12    printf("\n\n");
13    return 0;
14 }
```

The output window on the right shows the execution results in a Windows PowerShell terminal:

```
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PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 4.c -o 4 } ; if ($?) { .\4 }

The first 10 odd natural numbers are:

1    3    5    7    9    11    13    15    17    19

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```

Q5.

The screenshot shows a Visual Studio Code window titled "5.c - Assignment 4 - Visual Studio Code". The editor displays a C program in a file named "5.c". The program's logic is as follows: it includes `<stdio.h>`, defines a `main()` function, initializes `int i = 10;`, prints a newline, and then enters a `while (i >= 1)` loop. Inside the loop, it prints `"%d\t", 2*i-1;` and decrements `i--;`. After the loop, it prints another newline and returns 0. The output window on the right shows the execution results in a Windows PowerShell terminal. It displays the prompt `PS D:\BootCamp\C Programming\Assignments\Assignment 4>`, followed by the command `cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 5.c -o 5 } ; if ($?) { .\5 }`. The output of the program is "The first 10 odd natural numbers in reverse order are:" followed by the numbers 19, 17, 15, 13, 11, 9, 7, 5, 3, and 1, each separated by a tab. The status bar at the bottom indicates "Ln 15, Col 2", "Spaces: 4", "UTF-8", "CRLF", and "C".

```
5.c > main()
1 #include<stdio.h>
2 int main()
3 {
4     int i = 10;
5     printf("\n");
6     printf("The first 10 odd natural numbers in reverse order are: \n\n");
7     while (i >= 1)
8     {
9         printf("%d\t", 2*i-1);
10        i--;
11    }
12
13    printf("\n\n");
14    return 0;
15 }
```

Windows PowerShell  
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PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if (\$?) { gcc 5.c -o 5 } ; if (\$?) { .\5 }

The first 10 odd natural numbers in reverse order are:

19    17    15    13    11    9    7    5    3    1

PS D:\BootCamp\C Programming\Assignments\Assignment 4>

Ln 15, Col 2   Spaces: 4   UTF-8   CRLF   C   Go Live   Win32

Q6.

The screenshot shows a Visual Studio Code window titled "6.c - Assignment 4 - Visual Studio Code". The editor displays a C program in a file named "6.c". The program's logic is as follows: it includes `<stdio.h>`, defines a `main()` function, initializes `int i = 1;`, prints a newline, and then enters a `while (i <= 10)` loop. Inside the loop, it prints `"%d\t", 2*i;` and increments `i++;`. After the loop, it prints another newline and returns 0. The output window on the right shows the execution results in a Windows PowerShell terminal. It displays the prompt `PS D:\BootCamp\C Programming\Assignments\Assignment 4>`, followed by the command `cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 6.c -o 6 } ; if ($?) { .\6 }`. The output of the program is "The first 10 even natural numbers are:" followed by the numbers 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20, each separated by a tab. The status bar at the bottom indicates "Ln 15, Col 2", "Spaces: 4", "UTF-8", "CRLF", and "C".

```
6.c > main()
1 #include<stdio.h>
2 int main()
3 {
4     int i = 1;
5     printf("\n");
6     printf("The first 10 even natural numbers are: \n\n");
7     while (i <= 10)
8     {
9         printf("%d\t", 2*i);
10        i++;
11    }
12
13    printf("\n\n");
14    return 0;
15 }
```

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PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if (\$?) { gcc 6.c -o 6 } ; if (\$?) { .\6 }

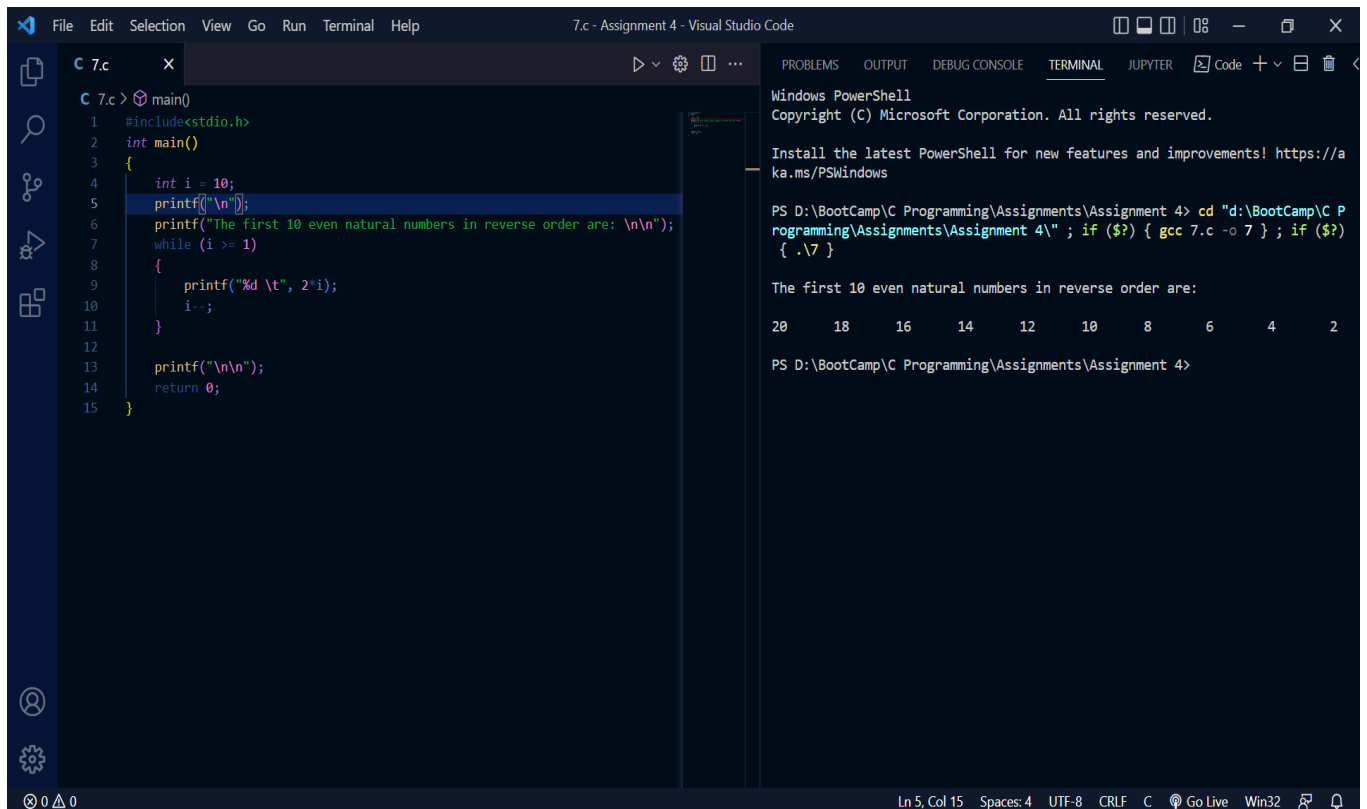
The first 10 even natural numbers are:

2    4    6    8    10    12    14    16    18    20

PS D:\BootCamp\C Programming\Assignments\Assignment 4>

Ln 15, Col 2   Spaces: 4   UTF-8   CRLF   C   Go Live   Win32

# Q7.



The screenshot shows a Visual Studio Code editor with a C file named 7.c. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int i = 10;
5     printf("\n");
6     printf("The first 10 even natural numbers in reverse order are: \n\n");
7     while (i >= 1)
8     {
9         printf("%d \t", 2*i);
10        i--;
11    }
12    printf("\n\n");
13    return 0;
14 }
```

The terminal output shows the execution of the program:

```
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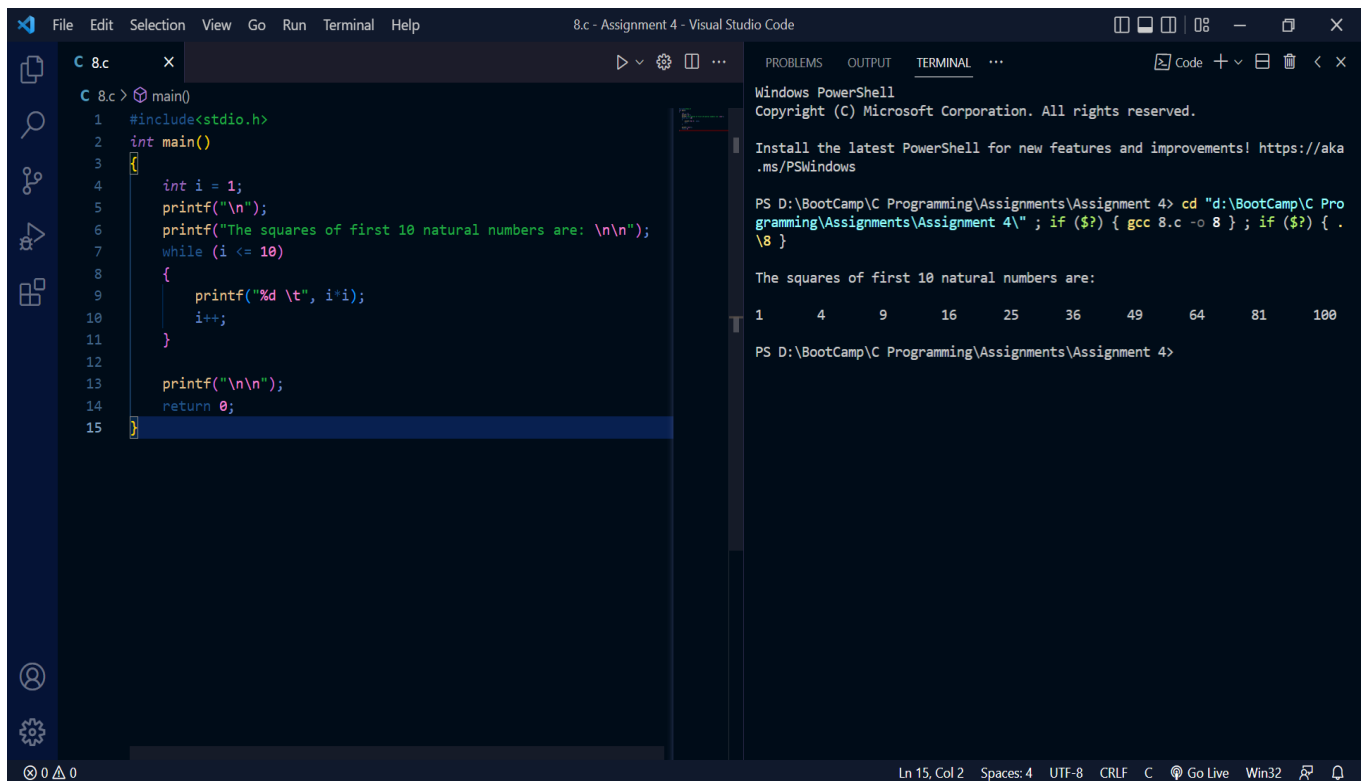
PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 7.c -o 7 } ; if ($?) { .\7 }

The first 10 even natural numbers in reverse order are:

20    18    16    14    12    10    8    6    4    2

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```

# Q8.



The screenshot shows a Visual Studio Code editor with a C file named 8.c. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int i = 1;
5     printf("\n");
6     printf("The squares of first 10 natural numbers are: \n\n");
7     while (i <= 10)
8     {
9         printf("%d \t", i*i);
10        i++;
11    }
12    printf("\n\n");
13    return 0;
14 }
```

The terminal output shows the execution of the program:

```
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PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 8.c -o 8 } ; if ($?) { .\8 }

The squares of first 10 natural numbers are:

1    4    9    16    25    36    49    64    81    100

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```

Q9.

The screenshot shows a Visual Studio Code window with a C file named `9.c`. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int i = 1;
5     printf("\n");
6     printf("The cubes of first 10 natural numbers are: \n\n");
7     while (i <= 10)
8     {
9         printf("%d \t", i*i*i);
10        i++;
11    }
12
13    printf("\n\n");
14    return 0;
15 }
```

The terminal on the right shows the execution of the program:

```
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PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 9.c -o 9 } ; if ($?) { .\9 }

The cubes of first 10 natural numbers are:

1      8      27      64      125      216      343      512      729      1000

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```

Q10.

The screenshot shows a Visual Studio Code window with a C file named `10.c`. The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int i = 1;
5     printf("\nThe multiplication table of 5 is: \n\n");
6     while (i <= 10)
7     {
8         printf("5 x %d = %d \n", i, 5*i);
9         i++;
10    }
11
12    printf("\n");
13    return 0;
14 }
```

The terminal on the right shows the execution of the program:

```
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PS D:\BootCamp\C Programming\Assignments\Assignment 4> cd "d:\BootCamp\C Programming\Assignments\Assignment 4\" ; if ($?) { gcc 10.c -o 10 } ; if ($?) { .\10 }

The multiplication table of 5 is:

5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50

PS D:\BootCamp\C Programming\Assignments\Assignment 4>
```