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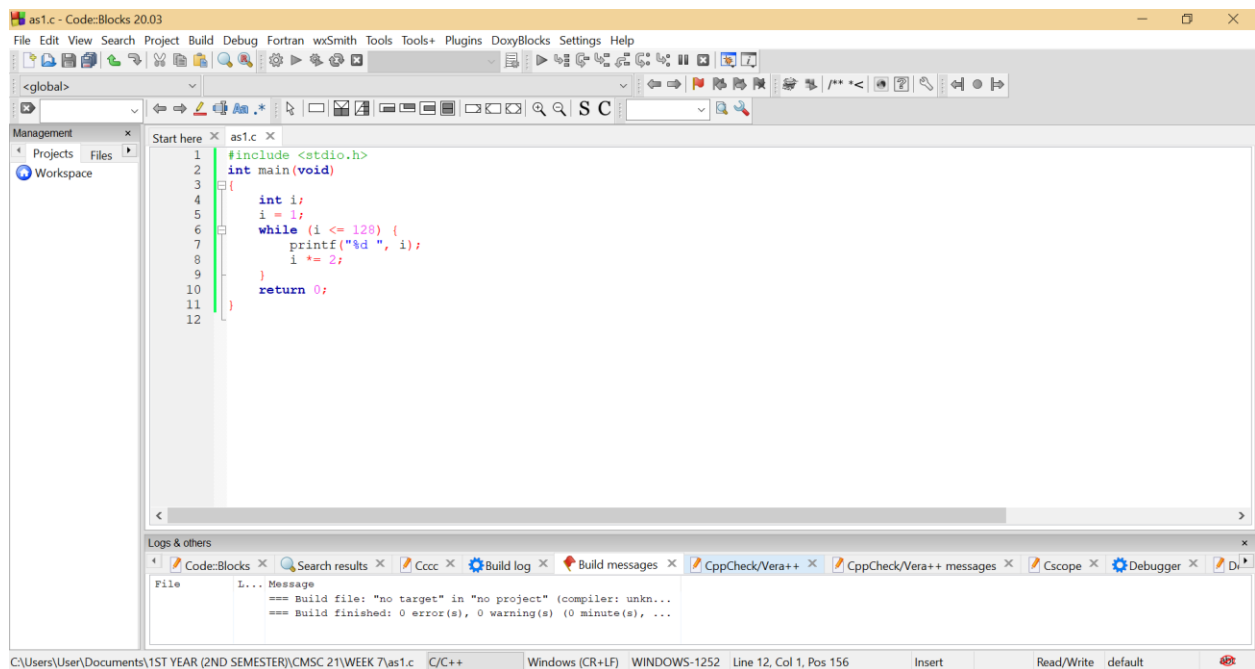
## Loop/Repetition Statement Lecture 4 Assignments

1. What is the output of the following program?

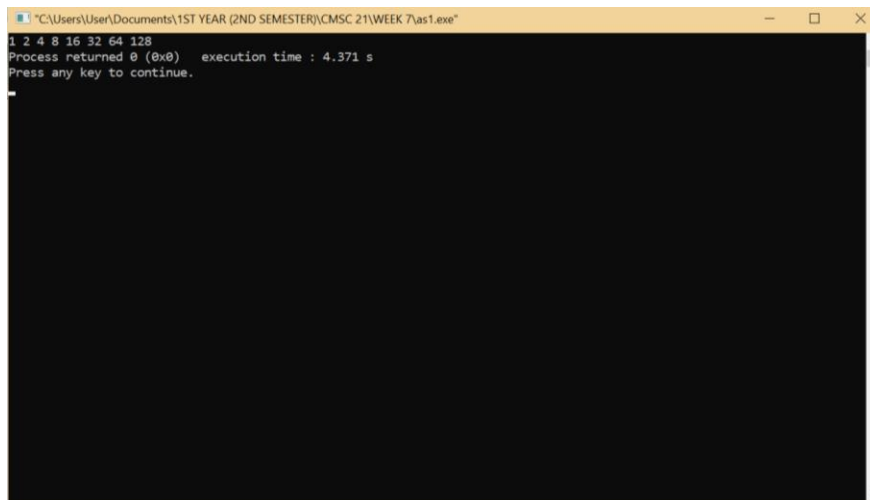
```
#include <stdio.h>
int main(void)
{
    int i;
    i = 1;
    while (i <= 128) {
        printf("%d ", i);
        i *= 2;
    }
    return 0;
}
```

\*The output in the program is 1 2 4 8 16 32 64 128

### CODE



## OUTPUT

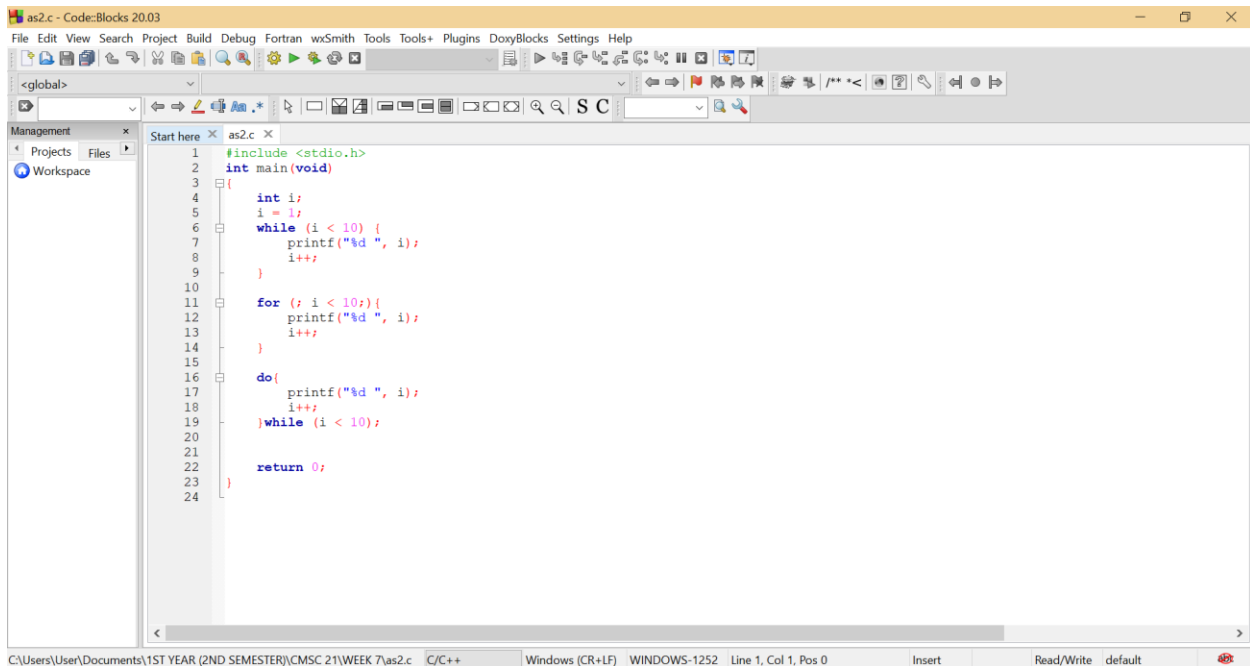


```
"C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as1.exe"
1 2 4 8 16 32 64 128
Process returned 0 (0x0)   execution time : 4.371 s
Press any key to continue.
```

2. Which one of the following statements is not equivalent to the other two (assuming that the loop bodies are the same)?
- a) while (i < 10) {...}
  - b) for (; i < 10; ) {...}
  - c) do {...} while (i < 10);

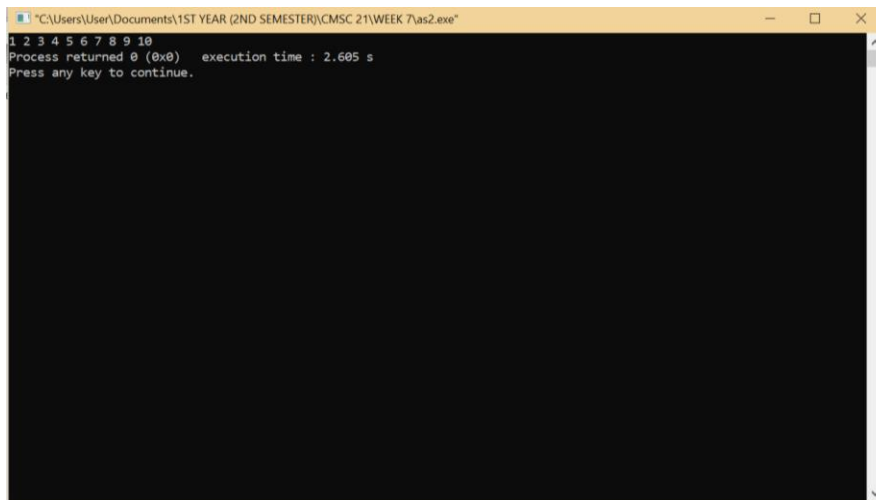
\* The following three statements are equivalent. They produced the same output in my program code.

## CODE



```
as2.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
Management
  Projects
  Workspace
Start here x as2.c x
1  #include <stdio.h>
2  int main(void)
3  {
4      int i;
5      i = 1;
6      while (i < 10) {
7          printf("%d ", i);
8          i++;
9      }
10
11     for (; i < 10; ){
12         printf("%d ", i);
13         i++;
14     }
15
16     do{
17         printf("%d ", i);
18         i++;
19     }while (i < 10);
20
21     return 0;
22 }
23
24
C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as2.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 1, Pos 0 Insert Read/Write default
```

## OUTPUT

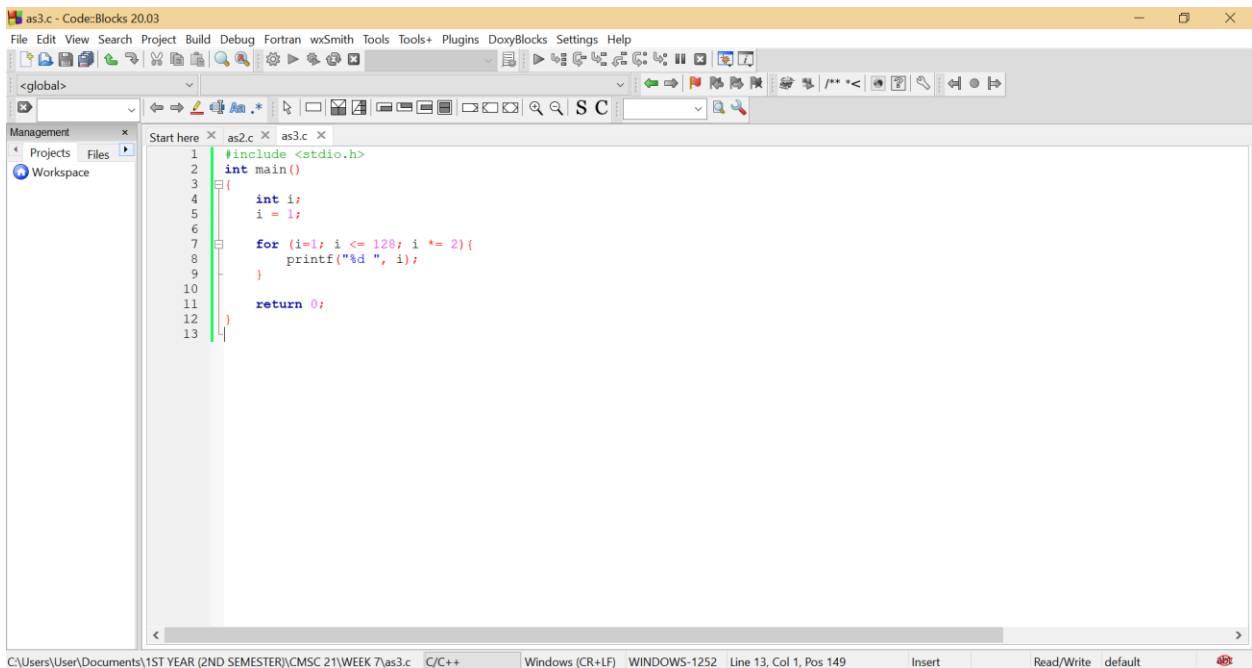


```
"C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as2.exe"
1 2 3 4 5 6 7 8 9 10
Process returned 0 (0x0)   execution time : 2.605 s
Press any key to continue.
```

3. Convert item 1 into an equivalent for statement. You can validate your answer by checking if the produced outputs by both the while and for statements are similar.

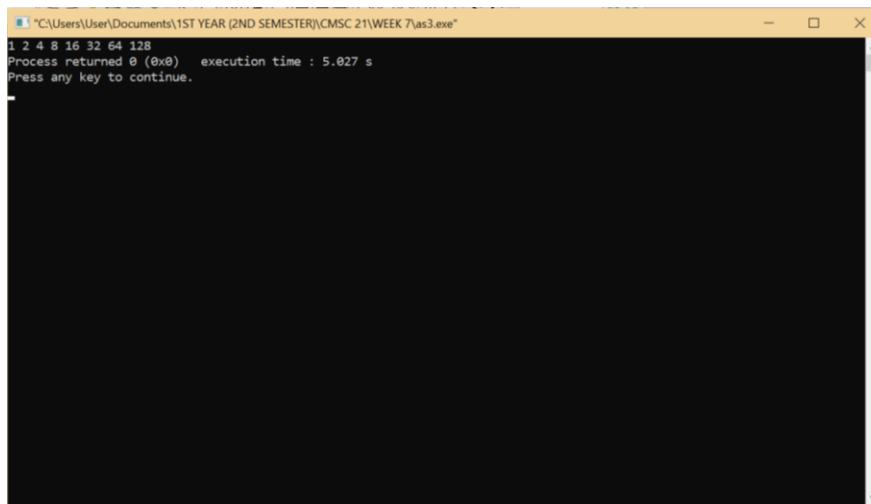
- Equivalent for statement:
- ```
for (i=1; i <= 128; i *= 2) {  
    printf("%d ", i);  
}
```

## CODE



```
as3.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
Management
  Projects
  Files
  Workspace
Start here x as2.c x as3.c x
1 #include <stdio.h>
2 int main()
3 {
4     int i;
5     i = 1;
6
7     for (i=1; i <= 128; i *= 2) {
8         printf("%d ", i);
9     }
10
11     return 0;
12 }
13
C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as3.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 13, Col 1, Pos 149 Insert Read/Write default
```

## OUTPUT



```
C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as3.exe
1 2 4 8 16 32 64 128
Process returned 0 (0x0) execution time : 5.027 s
Press any key to continue.
```

4. Write a code that computes for the power of two:

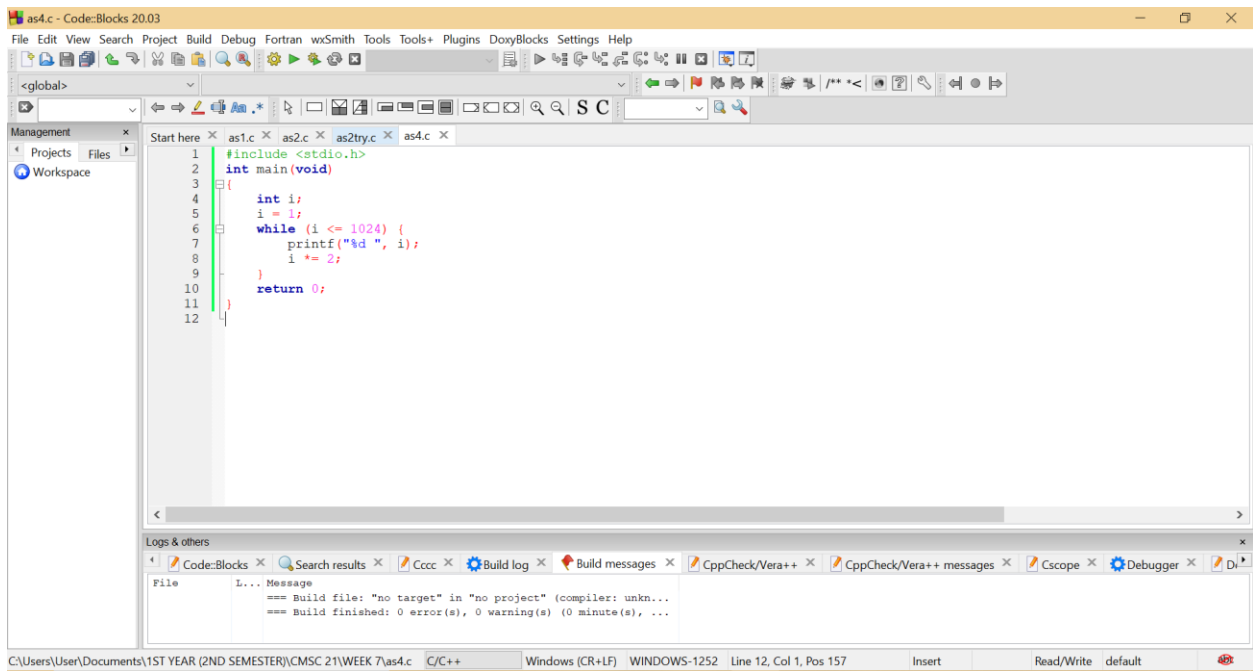
### TABLE OF POWERS OF TWO

n    2 to the n

-----

|    |      |
|----|------|
| 0  | 1    |
| 1  | 2    |
| 2  | 4    |
| 3  | 8    |
| 4  | 16   |
| 5  | 32   |
| 6  | 64   |
| 7  | 128  |
| 8  | 256  |
| 9  | 512  |
| 10 | 1024 |

## CODE



The screenshot shows the Code::Blocks 20.03 IDE. The main editor displays a C program named `as4.c` with the following code:

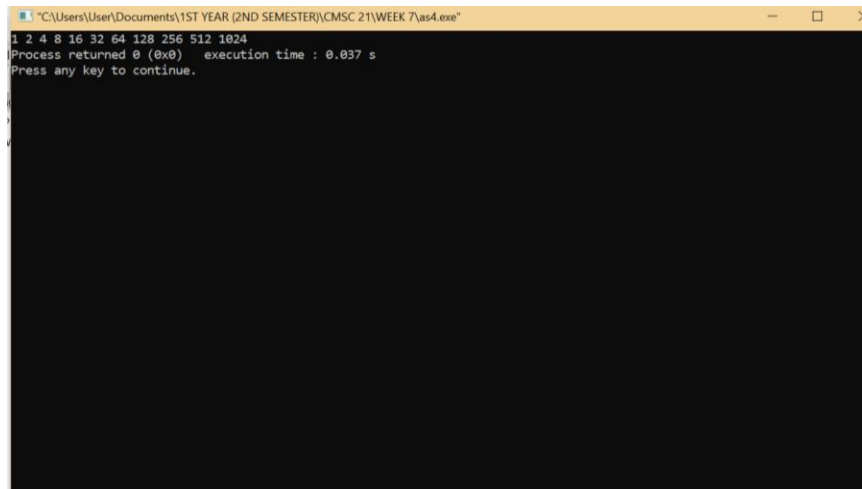
```
1 #include <stdio.h>
2 int main(void)
3 {
4     int i;
5     i = 1;
6     while (i <= 1024) {
7         printf("%d ", i);
8         i *= 2;
9     }
10    return 0;
11 }
12
```

The bottom panel shows the 'Logs & others' tab with the following build output:

```
File      L... Message
==== Build file: "no target" in "no project" (compiler: unkn...
==== Build finished: 0 error(s), 0 warning(s) (0 minute(s), ...
```

The status bar at the bottom indicates the file is `C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as4.c` in the `C/C++` project, with the cursor at line 12, column 1, position 157.

## OUTPUT

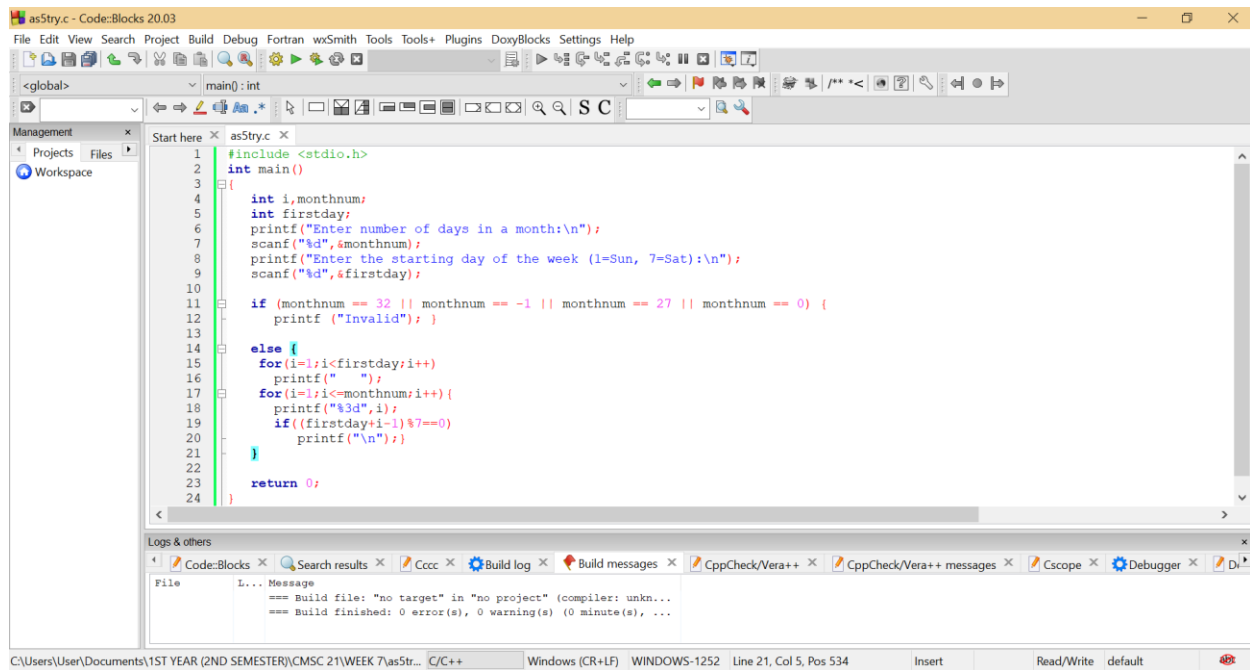


The screenshot shows a command prompt window titled `"C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as4.exe"`. The output of the program is displayed as follows:

```
1 2 4 8 16 32 64 128 256 512 1024
Process returned 0 (0x0)   execution time : 0.037 s
Press any key to continue.
```

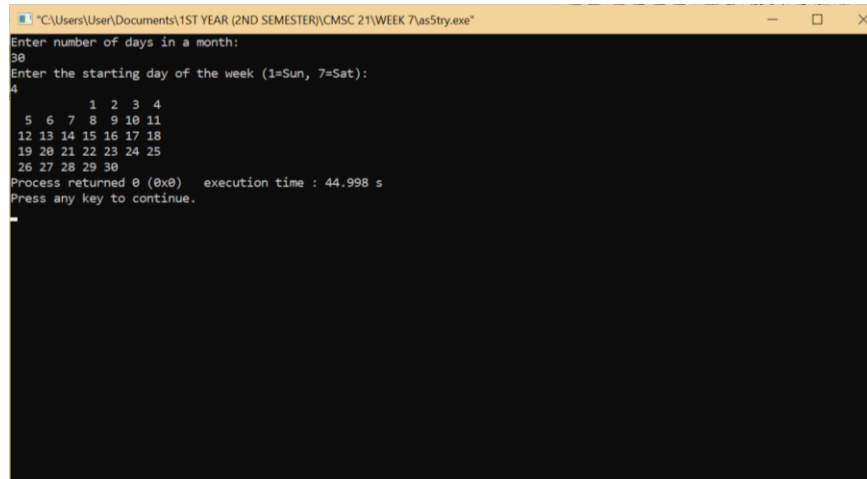
5. Write a program that displays a one-month calendar.

## CODE



```
1 #include <stdio.h>
2 int main()
3 {
4     int i, monthnum;
5     int firstday;
6     printf("Enter number of days in a month:\n");
7     scanf("%d", &monthnum);
8     printf("Enter the starting day of the week (1=Sun, 7=Sat):\n");
9     scanf("%d", &firstday);
10
11     if (monthnum == 32 || monthnum == -1 || monthnum == 27 || monthnum == 0) {
12         printf("Invalid");
13     }
14     else {
15         for(i=1; i<firstday; i++)
16             printf(" ");
17         for(i=1; i<=monthnum; i++) {
18             printf("%3d", i);
19             if((firstday+i-1)%7==0)
20                 printf("\n");
21         }
22     }
23     return 0;
24 }
```

## OUTPUT



```
*C:\Users\User\Documents\1ST YEAR (2ND SEMESTER)\CMSC 21\WEEK 7\as5try.exe*
Enter number of days in a month:
30
Enter the starting day of the week (1=Sun, 7=Sat):
4
 1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30
Process returned 0 (0x0)   execution time : 44.998 s
Press any key to continue.
```

GITHUB LINK: <https://github.com/Kariellecirunay/CMSC21>