For Next Day 2

65 Printed as specified

Code

```c
//This program prints out the integer value 65 as %d, %4d, %x, %o, and %c
//@author Mahmoud Moustafa; ID:3648276
#include <stdio.h>
#include <stdlib.h>
int main(int argc, char * * argv)
{
    printf("65 printed with %%d is %d\n", 65); //65 is printed as a decimal integer
    printf("65 printed with %%4d is %4d\n", 65); //65 is printed as a decimal integer with a width of 4
    printf("65 printed with %%x is %x\n", 65); //65 is printed as a hexadecimal
    printf("65 printed with %%o is %o\n", 65);// 65 is printed as an octal
    printf("65 printed with %%c is %c\n", (char)65);//65 is printed as a char

    return EXIT_SUCCESS;
}
```

Output

```
[mmoustaf@gc112m38 ~]$ cd cs2263/
[mmoustaf@gc112m38 ~/cs2263]$ cd forNextDay/
[mmoustaf@gc112m38 forNextDay]$ cd F
FND1/ FND2/
[mmoustaf@gc112m38 forNextDay]$ cd FND2
[mmoustaf@gc112m38 FND2]$ gcc -o integer
declare.c    integer.c    playStack.c
[mmoustaf@gc112m38 FND2]$ gcc -o integer integer.c
[mmoustaf@gc112m38 FND2]$ ./integer
65 printed with %d is 65
65 printed with %4d is   65
65 printed with %x is 41
65 printed with %o is 101
65 printed with %c is A
[mmoustaf@gc112m38 FND2]$
```

Sizeof

Code

```c
//This program prints the size of different data types
//@author Mahmoud Moustafa; ID:3648276
#include <stdio.h>
#include <stdlib.h>
int main(int argc, char * * argv)
{
    char c;
    int i;
    float f;
    double d;
    printf("The size of char is %d byte\n", sizeof(c));
    printf("The size of int is %d bytes\n", sizeof(i));
    printf("The size of float is %d bytes\n", sizeof(f));
    printf("The size of double is %d bytes\n", sizeof(d));

    return EXIT_SUCCESS;
}
```

Output

```
[mmoustaf@gc112m38 FND2]$ gcc -o declare declare.c
[mmoustaf@gc112m38 FND2]$ ./declare
The size of char is 1 byte
The size of int is 4 bytes
The size of float is 4 bytes
The size of double is 8 bytes
[mmoustaf@gc112m38 FND2]$
```

What these values mean

These values are the storage/memory space that different datatypes occupy.

The minimum and maximum values for a signed int.

Terminal

```
Microsoft Windows [Version 10.0.19043.1165]
(c) Microsoft Corporation. All rights reserved.

C:\Users\momou> ssh mmoustaf@gc112m38.cs.unb.ca
mmoustaf@gc112m38.cs.unb.ca's password:
Last login: Sat Sep 11 16:02:59 2021 from 10.6.104.12
[mmoustaf@gc112m38 ~]$ cd ..
[mmoustaf@gc112m38 ugrads]$ cd ..
[mmoustaf@gc112m38 /home1]$ cd ..
[mmoustaf@gc112m38 /]$ cd ..
[mmoustaf@gc112m38 /]$ cd usr
[mmoustaf@gc112m38 /usr]$ cd include/
[mmoustaf@gc112m38 include]$ vi li
libdb/     libgen.h   libio.h    libpng15/  libyami/   link.h
libdrm/    libintl.h  libkms/    libsync.h  limits.h   linux/
[mmoustaf@gc112m38 include]$ vi limits.h
```

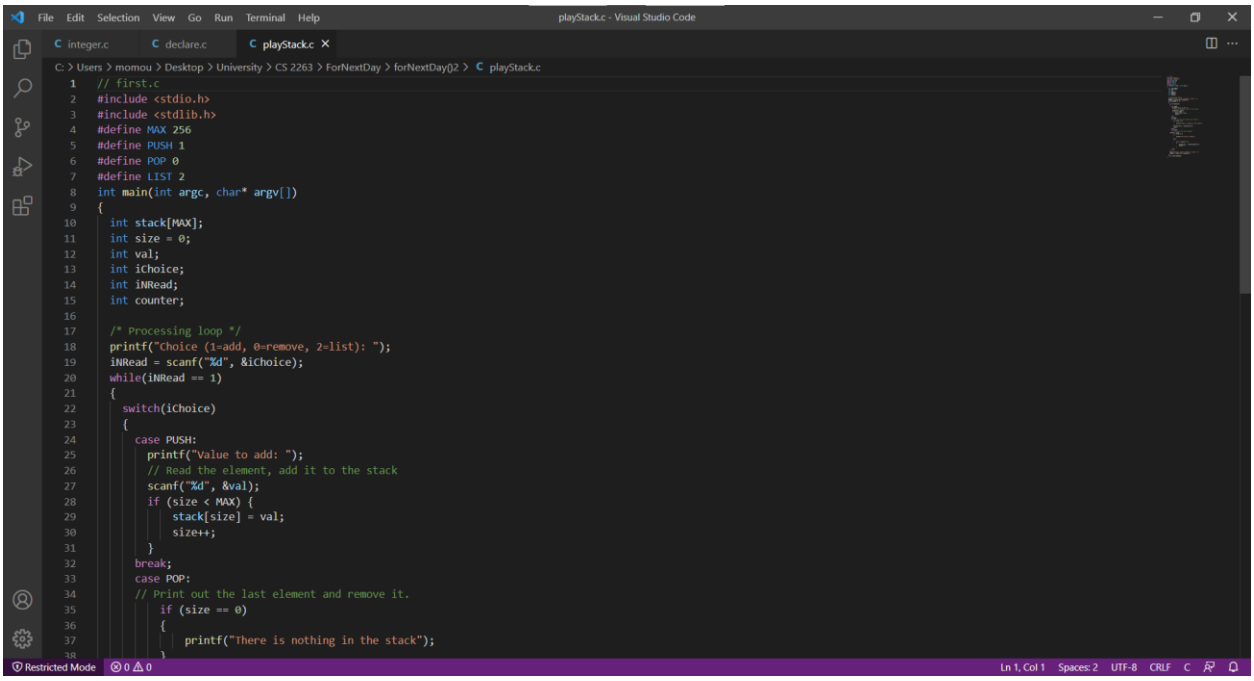
```
/* Minimum and maximum values a `signed int' can hold.  */
#  define INT_MIN       (-INT_MAX - 1)
#  define INT_MAX       2147483647
```

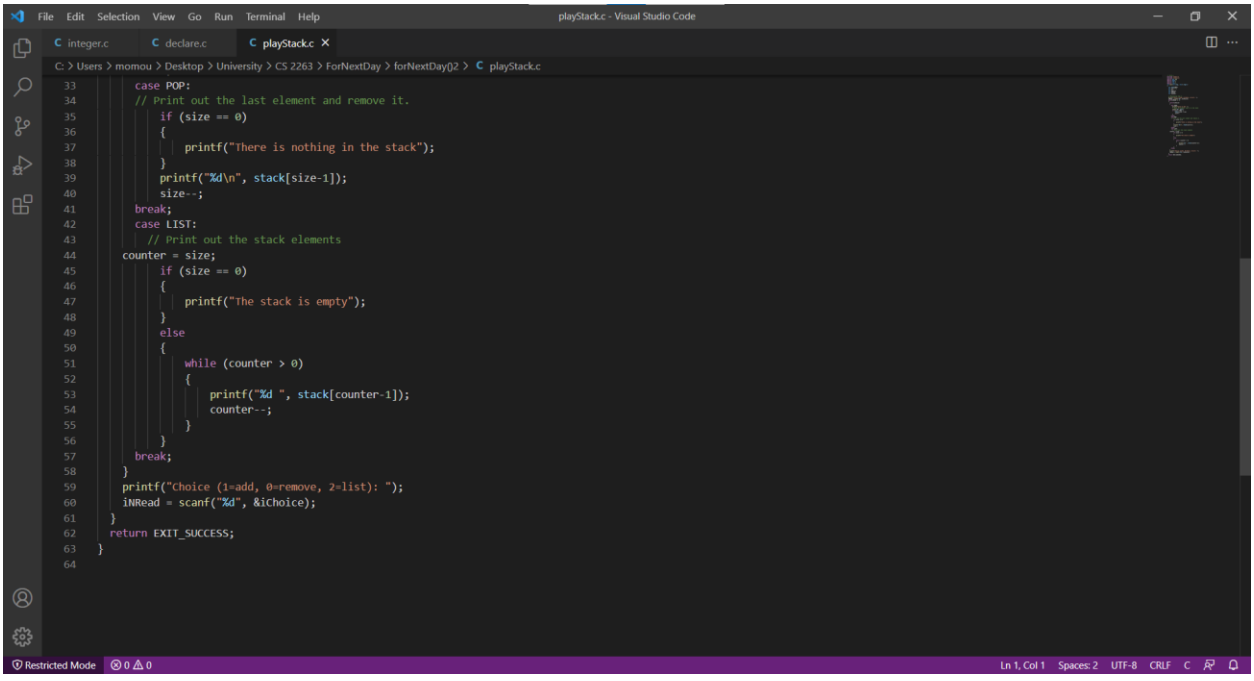
Minimum value for a signed int: -2147483648

Maximum value for a signed int: 2147483647

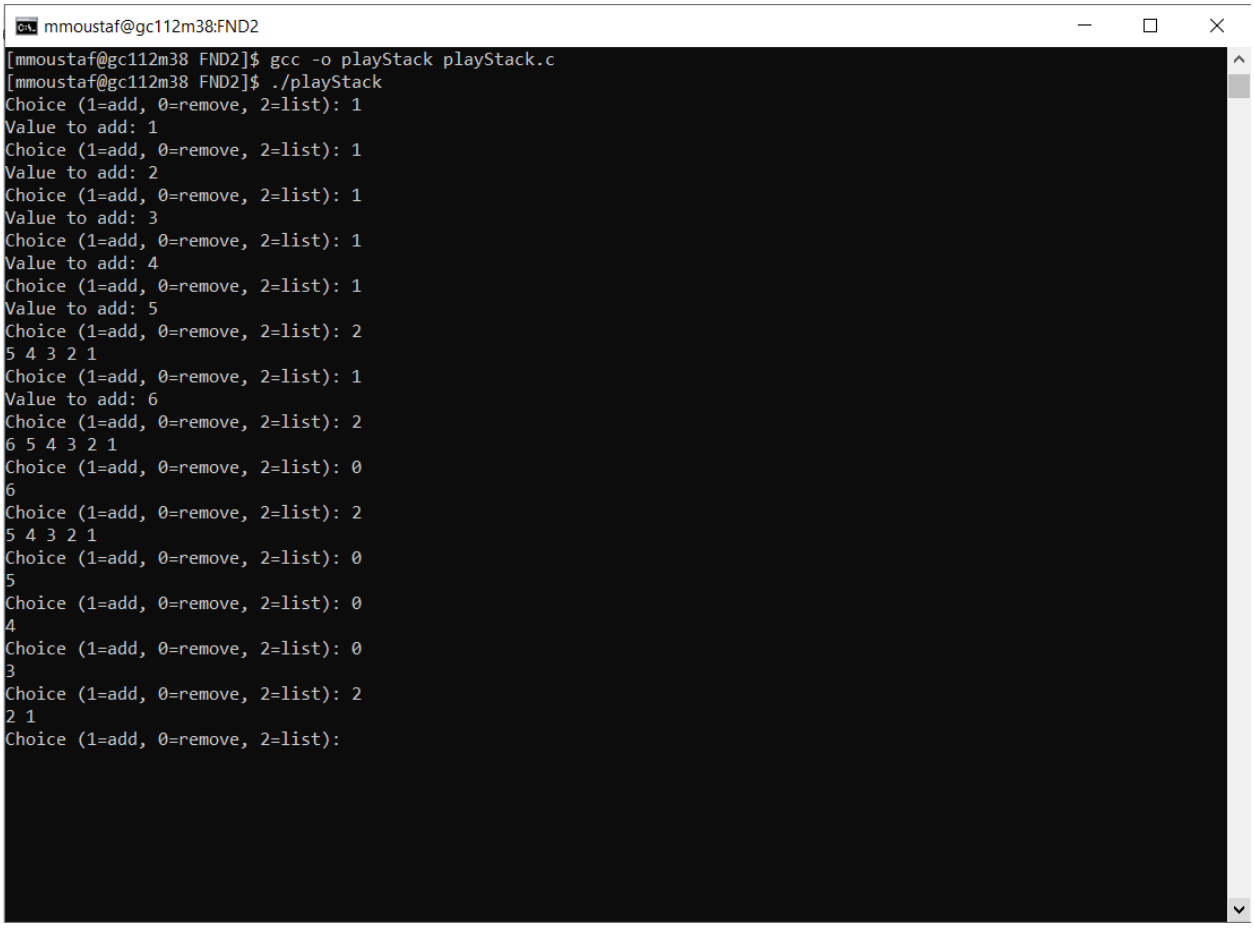
playStack

Code





Terminal Output


mmoustaf@gc112m38:FND2
[mmoustaf@gc112m38 FND2]$ gcc -o playStack playStack.c
[mmoustaf@gc112m38 FND2]$ ./playStack
Choice (1=add, 0=remove, 2=list): 1
Value to add: 1
Choice (1=add, 0=remove, 2=list): 1
Value to add: 2
Choice (1=add, 0=remove, 2=list): 1
Value to add: 3
Choice (1=add, 0=remove, 2=list): 1
Value to add: 4
Choice (1=add, 0=remove, 2=list): 1
Value to add: 5
Choice (1=add, 0=remove, 2=list): 2
5 4 3 2 1
Choice (1=add, 0=remove, 2=list): 1
Value to add: 6
Choice (1=add, 0=remove, 2=list): 2
6 5 4 3 2 1
Choice (1=add, 0=remove, 2=list): 0
6
Choice (1=add, 0=remove, 2=list): 2
5 4 3 2 1
Choice (1=add, 0=remove, 2=list): 0
5
Choice (1=add, 0=remove, 2=list): 0
4
Choice (1=add, 0=remove, 2=list): 0
3
Choice (1=add, 0=remove, 2=list): 2
2 1
Choice (1=add, 0=remove, 2=list):