

## Day 6 Documentation

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BDCOM0019

### 1. Exercise 2-1:

Problem: Write a program to determine the ranges of char, short, int, and long variables, both signed and unsigned, by printing appropriate values from standard headers and by direct computation. Harder if you compute them: determine the ranges of the various floating-point types.

Solution: Here is my source code and after that I will show the input and output sample on this:

```

MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-1.c - [Executing] - Dev-C++ 5.11
Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release

s)
Exercise 2-2.c Exercise 2-3.c Exercise 2-4.c Exercise 2-5.c Exercise 2-1.c
1  #include <stdio.h>
2  #include <limits.h>
3  #include <float.h>
4  #include <math.h>
5  /*****
6  ** Functions      : main, print_signed_range, print_unsigned_range, int_to_array_updated,
7  **                : print_variable_ranges, direct_computation
8  ** Inputs        : 1. argc      -- The number of parameters provided to the main function**
9  **                : 2. argv     -- The pointer to the input string array of parameters
10 ** Variables     : type_name    -- variable type name
11 **                : min_value   -- variable type minimum value
12 **                : max_value   -- variable type maximum value
13 **
14 ** Return        : = 0         -- Success
15 **                : < 0        -- Failed
16 ** Note          : print the ranges of different variable types for standard headers
17 *****/
18
19 // Function to print the signed range of a type using standard headers
20 void print_signed_range(const char* type_name, long long min_value, long long max_value)
21 {
22     printf("Range of signed %s: %lld to %lld\n", type_name, min_value, max_value);
23 }
24
25 // Function to print the unsigned range of a type using standard headers
26 void print_unsigned_range(const char* type_name, long long min_value, long long max_value)
27 {
28     printf("Range of %s: 0 to %llu\n\n", type_name, max_value);
29 }
30
31 // Function to print the ranges of different variable types for standard headers
32 void print_variable_ranges()
33 {
34     // Ranges for char types
35     print_signed_range("char", CHAR_MIN, CHAR_MAX);
36     print_unsigned_range("unsigned char", 0, UCHAR_MAX);
37
38     // Ranges for short types
39     print_signed_range("short", SHRT_MIN, SHRT_MAX);
40     print_unsigned_range("unsigned short", 0, USHRT_MAX);
41

```

```

\\MdMahfujHasanShohug\\C&DS\\Day_6\\Exercise 2-1.c - [Executing] - Dev-C++ 5.11
Project Execute Tools AStyle Window Help
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Exercise 2-2.c Exercise 2-3.c Exercise 2-4.c Exercise 2-5.c Exercise 2-1.c Exercise 3-4.c

42 // Ranges for int types
43 print_signed_range("int", INT_MIN, INT_MAX);
44 print_unsigned_range("unsigned int", 0, UINT_MAX);
45
46 // Range for long types
47 print_signed_range("long", LONG_MIN, LONG_MAX);
48 print_unsigned_range("unsigned long", 0, ULONG_MAX);
49
50 // Ranges for long long types
51 print_signed_range("long long", LLONG_MIN, LLONG_MAX);
52 print_unsigned_range("unsigned long long", 0, ULLONG_MAX);
53
54 // Range for floating-point type
55 printf("Range of float: %E to %E\\n", FLT_MIN, FLT_MAX);
56 // Range for double type
57 printf("Range of double: %E to %E\\n", DBL_MIN, DBL_MAX);
58 }
59 //Function to print the ranges of different variable types for direct computation
60 void direct_computation(const char* type_name, int size)
61 {
62     // all equation of signed and unsigned variable range ex 2^(n-1) is 1LL << (n-1)
63     long long min_value = -(1LL << (size - 1));
64     long long max_value = (1LL << (size - 1)) - 1;
65     long long unsigned_maxi = (1ULL << size) - 1;
66     print_signed_range(type_name, min_value, max_value);
67     print_unsigned_range(type_name, 0, unsigned_maxi);
68 }
69 /*main function*/
70 int main(int argc, char *argv[])
71 {
72     // Call the function to print variable ranges for standard headers method
73     printf("variable ranges for standard headers method\\n");
74     print_variable_ranges();
75     printf("\\n*****\\n");
76
77     //Compute the size of variable using bits = byte * 8 formula for calculating direct computation
78     int char_size = sizeof(char) * 8;
79     int short_size = sizeof(short) * 8;
80     int int_size = sizeof(int) * 8;
81     int long_size = sizeof(long) * 8;
82     int float_size = sizeof(float) * 8;
83     int double_size = sizeof(double) * 8;
84     int long long size = sizeof(long long) * 8;

```

```

85
86 // show variable size
87 printf("\n\nThe size of char variable is : %d bits", char_size);
88 printf("\n\nThe size of short variable is : %d bits", short_size);
89 printf("\n\nThe size of int variable is : %d bits", int_size);
90 printf("\n\nThe size of float variable is : %d bits", float_size);
91 printf("\n\nThe size of double variable is : %d bits", double_size);
92 printf("\n\nThe size of long variable is : %d bits", long_size);
93 printf("\n\nThe size of long long variable is : %d bits", long_long_size);
94
95 //Show variable range
96 printf("\n\nvariable ranges using direct computation method\n");
97 direct_computation("char", char_size);
98 direct_computation("short", short_size);
99 direct_computation("int", int_size);
100 direct_computation("long", long_size);
101 return 0;
102 }

```

Compile Log   Debug   Find Results   Close

Processing C source file...

-----

- C Compiler: C:\Program Files (x86)\Dev-Cpp\MinGW64\bin\gcc.exe

- Command: gcc.exe "D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day\_6\Exercise 2-1.c" -o "

Compilation results...

-----

- Errors: 0

- Warnings: 0

- Output Filename: D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day\_6\Exercise 2-1.exe

- Output Size: 130.25 KiB

- Compilation Time: 0.19s

Here in this code I am showing the both from the header library <limit.h> and by calculating the by using formula for signed and unsigned variable. The direct\_computation function in this program uses the power of 2(size) formula to determine a type's range, where size is the type's bit count. The print\_signed\_range and print\_unsigned\_range functions are then used to print the determined range. The built-in variable ranges and the calculated ranges for various variable types are both included in the print\_variable\_ranges function.

We are aware of the equation for signed and unsigned documents. Use the formula

$$-2^{(n-1)} \text{ to } (2^{(n-1)})-1$$

for signed data types. The range of values for unsigned data types will be

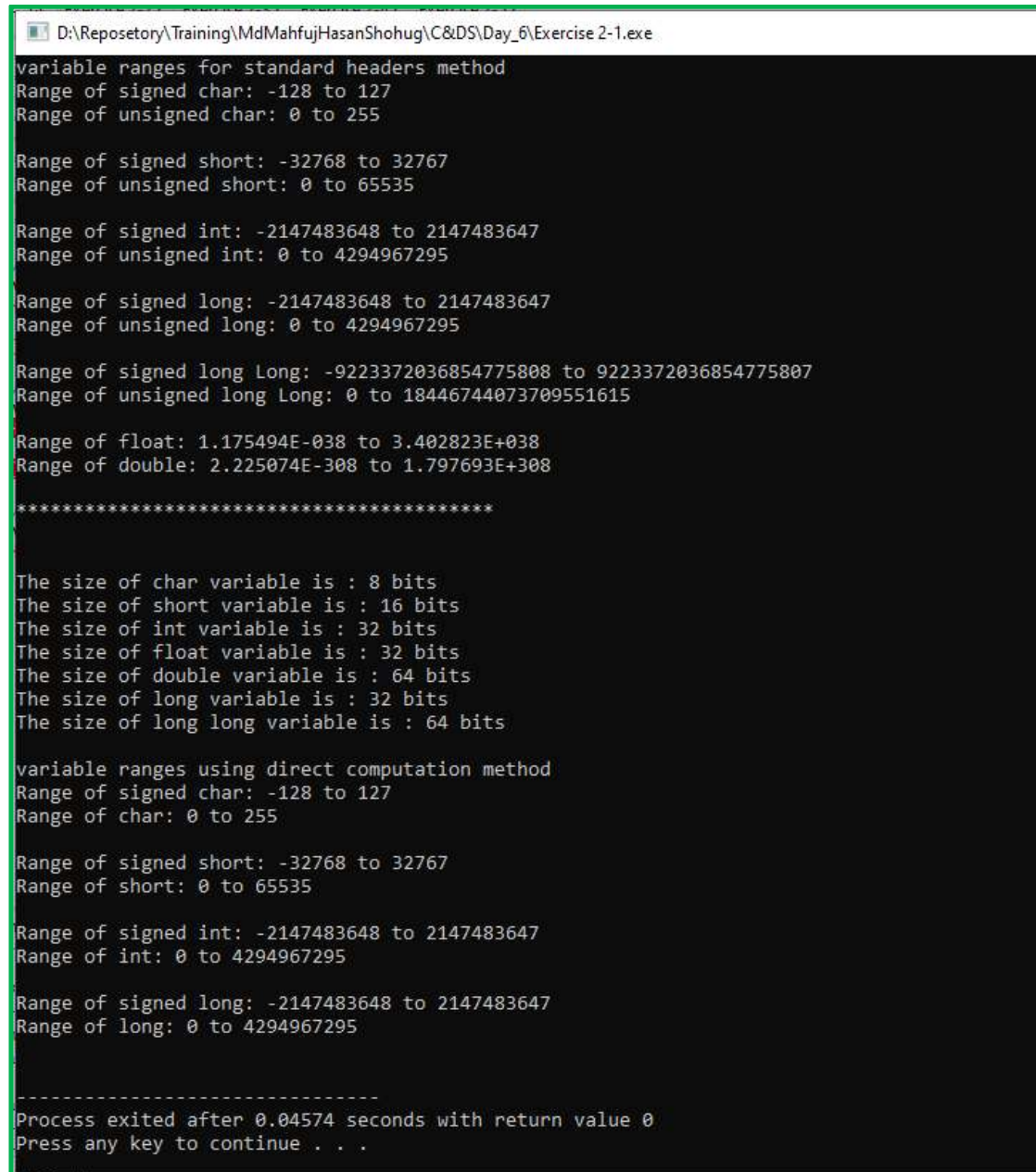
$$0 \text{ to } (2^n) - 1$$

where n denotes the data type's number of bits.

In C, the type of integer literals is specified by using suffixes like ULL and LL. Here is what they stand for: The suffix ULL is used to denote the unsigned long long type of an integer literal. As an illustration, 1ULL stands for the unsigned long long integer number 1. A suffix of the form LL is used to denote the long long type of an integer literal. As an illustration, 1LL stands for the long long integer number 1. These suffixes are used to make sure that when conducting computations or assignments, integer literals are regarded as the appropriate type. The values 1 are represented as unsigned long long and long long, respectively, in the context by the symbols 1ULL and 1LL.

The built-in variable sizes in C are not constant and can change between platforms and compilers. However, the `<limits.h>` header, which has constants that stand in for the sizes and ranges of various types, is offered by the standard C library. Here is an example that uses the constants listed in "`<limits.h>`" to output the bit sizes of various variable types.

Output:



```
D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-1.exe
variable ranges for standard headers method
Range of signed char: -128 to 127
Range of unsigned char: 0 to 255

Range of signed short: -32768 to 32767
Range of unsigned short: 0 to 65535

Range of signed int: -2147483648 to 2147483647
Range of unsigned int: 0 to 4294967295

Range of signed long: -2147483648 to 2147483647
Range of unsigned long: 0 to 4294967295

Range of signed long long: -9223372036854775808 to 9223372036854775807
Range of unsigned long long: 0 to 18446744073709551615

Range of float: 1.175494E-038 to 3.402823E+038
Range of double: 2.225074E-308 to 1.797693E+308

*****

The size of char variable is : 8 bits
The size of short variable is : 16 bits
The size of int variable is : 32 bits
The size of float variable is : 32 bits
The size of double variable is : 64 bits
The size of long variable is : 32 bits
The size of long long variable is : 64 bits

variable ranges using direct computation method
Range of signed char: -128 to 127
Range of char: 0 to 255

Range of signed short: -32768 to 32767
Range of short: 0 to 65535

Range of signed int: -2147483648 to 2147483647
Range of int: 0 to 4294967295

Range of signed long: -2147483648 to 2147483647
Range of long: 0 to 4294967295

-----
Process exited after 0.04574 seconds with return value 0
Press any key to continue . . .
```

This is the output of my code now here I am describe above.

In one program I was made the output both using standard header method and also using the direct computation method.



## 2. Exercise 2-2:

Problem: Write a loop equivalent to the for loop above without using && or ||.

Solution: Here in this problem in the book they use the for loop with double condition but in my solution I am using here while loop that's why I did not need to use double condition.

Here is the source code:

```

MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.c - Dev-C++ 5.11
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Exercise 2-2.c Exercise 2-3.c Exercise 2-4.c Exercise 2-5.c Exercise 3-4.c

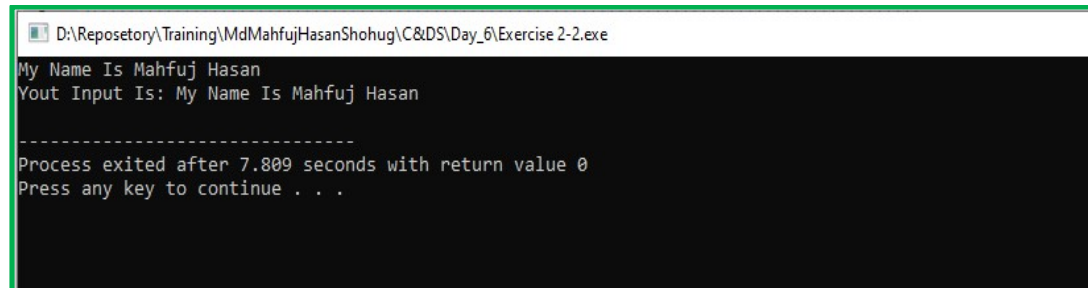
1  #include <stdio.h>
2  #define MAX_SIZE 100
3  /*****
4  ** Functions : main
5  ** Inputs : 1. argc -- The number of parameters provided to the main function**
6  ** : 2. argv -- The pointer to the input string array of parameters **
7  ** Variables : input_string[] -- array of characters
8  ** : store_each_char-- each character read
9  ** : input_string -- Inputted string from user
10 ** : i -- Loop variable
11 ** Return : = 0 -- Success
12 ** : < 0 -- Failed
13 ** Note : Loop without using && or || conditional operator
14 *****/
15 /*main function*/
16 int main(int argc, char *argv[])
17 {
18     char input_string[MAX_SIZE]; // Array to store the input string
19     int i = 0;
20     int store_each_char; // Variable to store each character read
21
22     //Loop to continue indefinitely until a certain condition is met
23     while (1) {
24         if (i >= MAX_SIZE - 1) {
25             break; // If array is full, break out of the loop
26         }
27
28         store_each_char = getchar(); // Read a character from input
29
30         if (store_each_char == '\n')
31             break; // If newline character is encountered, break out of the loop
32
33         if (store_each_char == EOF)
34             break;
35
36         input_string[i] = store_each_char; // Store the character in the array
37         i++;
38     }
39
40     input_string[i] = '\0'; // Add null for valid C string
41     printf("Your Input Is: %s\n", input_string);
42     return 0;
43 }

ces Compile Log Debug Find Results Close

Processing C source file...
-----
- C Compiler: C:\Program Files (x86)\Dev-Cpp\MinGW64\bin\gcc.exe
- Command: gcc.exe "D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.c" -o

Compilation results...
-----
- Errors: 0
- Warnings: 0
- Output Filename: D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.exe
- Output Size: 128.103515625 KiB
- Compilation Time: 0.17s
  
```

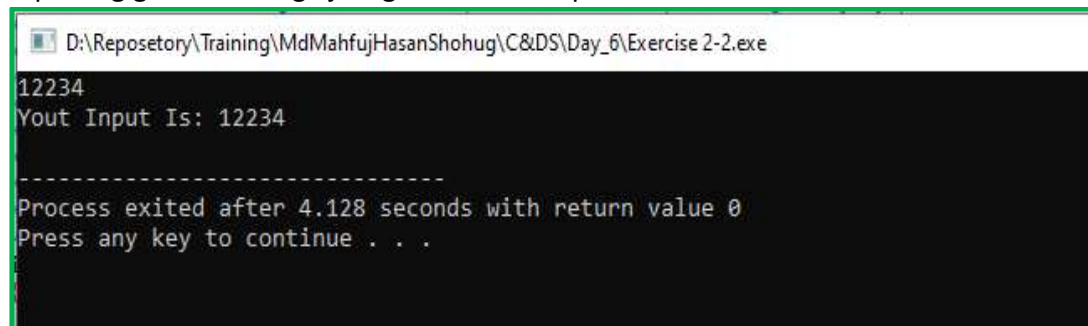
Output analyze for this code:



```
D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.exe
My Name Is Mahfuj Hasan
Yout Input Is: My Name Is Mahfuj Hasan

-----
Process exited after 7.809 seconds with return value 0
Press any key to continue . . .
```

Inputting general string I just got correct output as a same line.

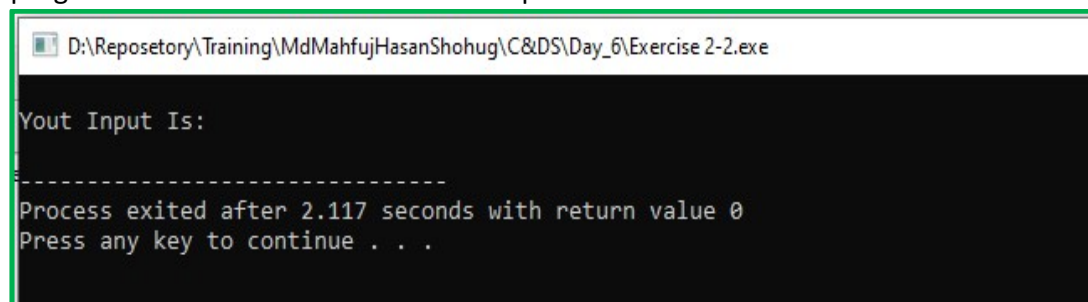


```
D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.exe
12234
Yout Input Is: 12234

-----
Process exited after 4.128 seconds with return value 0
Press any key to continue . . .
```

If I input 123 then also got output 123 but if I compile this program this value data type will be as a string. So it's also write.

On the other hand If I input null string and just enter "\n" by pressing enter button the program has been excute with blank output. Here is the SS:



```
D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.exe
Yout Input Is:

-----
Process exited after 2.117 seconds with return value 0
Press any key to continue . . .
```

### 3. Exercise 2-3:

Problem: Write a function `htoi(s)`, which converts a string of hexadecimal digits (including an optional `0x` or `0X`) into its equivalent integer value. The allowable digits are 0 through 9, a through f, and A through F.

Solution:

I begin by omitting the `'0x'` or `'0X'` prefix if it appears in the input string in the `htoi` function, which is `hexa_ot_int` on the book. The string is then processed character by character. Each hexadecimal digit is converted to its decimal equivalent, and the result is added after being multiplied by 16 and the decimal value of the current digit. For ease of usage and uniformity, all capital alphabetic characters are converted to lowercase using the `tolower`

function from the ctype.h library. When an incorrect character—that is, one that isn't a legal hexadecimal digit—is found, we show an error message and return -1 to denote a mistake.

Source code:

```

MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-3.c - Dev-C++ 5.11
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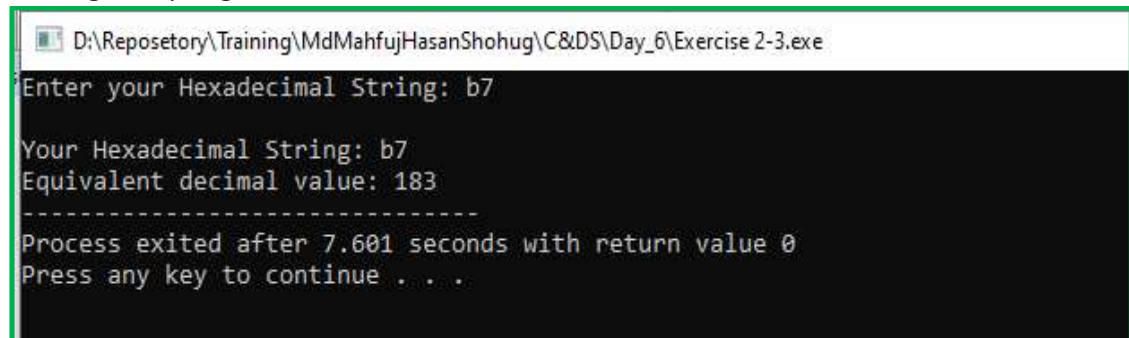
Exercise 2-3.c Exercise 2-4.c Exercise 2-5.c Exercise 3-4.c

1 #include <stdio.h>
2 #include <ctype.h>
3
4 /** Functions : main, hexa_ot_int */
5 /** Inputs : 1. argc -- The number of parameters provided to the main function */
6 /**          : 2. argv -- The pointer to the input string array of parameters */
7 /** Variables : input_str[] -- array of characters */
8 /**           : int_result -- Decimal Result */
9 /**           : i, j -- Loop variable */
10 /** Return : = 0 -- Success */
11 /**         : < 0 -- Failed */
12 /** Note : converts a string of hexadecimal digits into its equivalent integer value */
13
14 //Hexa to int function
15 int hexa_ot_int(char input_str[])
16 {
17     int int_result = 0, i = 0;
18
19     //skip optional 0x or 0X
20     if (input_str[i] == '0' && (tolower(input_str[i+1]) == 'x'))
21     {
22         i += 2;
23     }
24
25     // process each hexa digit
26     while (input_str[i] != '\0')
27     {
28         char update_char = tolower(input_str[i]); // uppercase alphabetic characters to lowercase
29
30         // is character represents a digit
31         if (isdigit(update_char))
32         {
33             int_result = int_result * 16 + (update_char - '0'); // Decimal to hexa formula
34         }
35         else if (update_char >= 'a' && update_char <= 'f')
36         {
37             int_result = int_result * 16 + (update_char - 'a' + 10); // Decimal to Hexa formula abouve 10 A to F
38         }
39         else
40         {
41             // Invalid character warning
42             printf("Your are input invalid Character: %c\n", input_str[i]);
43             return -1;
44         }
45         i++;
46     }
47
48     return int_result;
49 }
50
51 //Main function
52 int main(int argc, char *argv[])
53 {
54     char hexa_str[100];
55     printf("Enter your Hexadecimal String: ");
56     scanf("%s", &hexa_str);
57
58     printf("\nYour Hexadecimal String: %s", hexa_str);
59     printf("\nEquivalent decimal value: %d", hexa_ot_int(hexa_str));
60
61     return 0;
62 }
63
ces Compile Log Debug Find Results Close

Processing C source file...
-----
- C Compiler: C:\Program Files (x86)\Dev-Cpp\MinGW64\bin\gcc.exe
- Command: gcc.exe "D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.c" -o "
Compilation results...
-----
- Errors: 0
- Warnings: 0
- Output Filename: D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-2.exe
- Output Size: 128.103515625 KiB
- Compilation Time: 0.17s
  
```

All Outputs:

First I give input general one hexa value line b6.

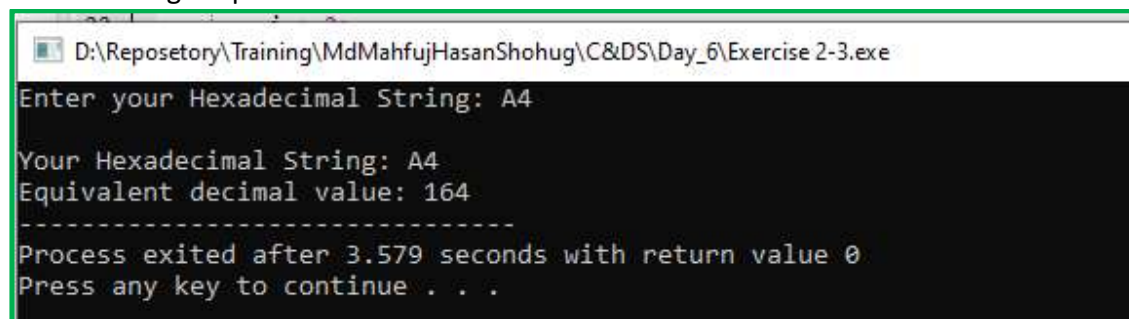


```
D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-3.exe
Enter your Hexadecimal String: b7

Your Hexadecimal String: b7
Equivalent decimal value: 183
-----
Process exited after 7.601 seconds with return value 0
Press any key to continue . . .
```

It perfectly convert this string.

Now showing output for A4:

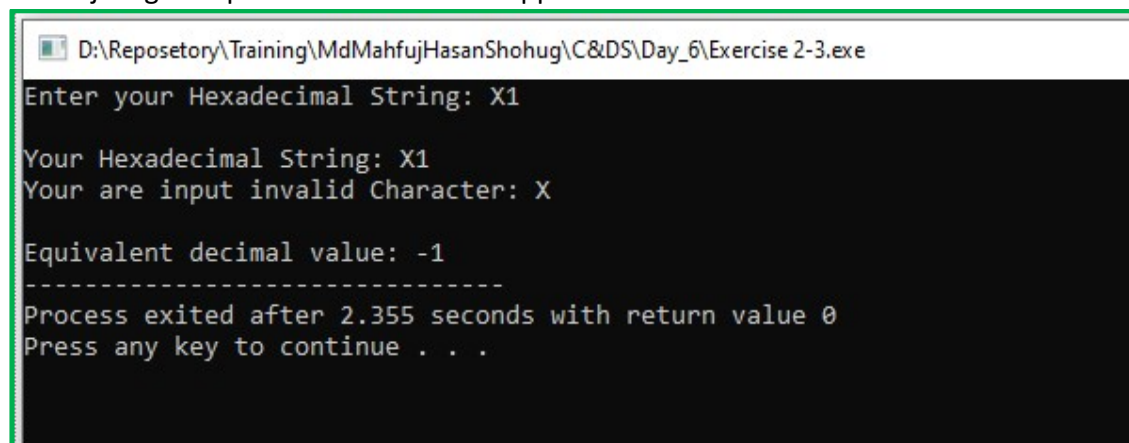


```
D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-3.exe
Enter your Hexadecimal String: A4

Your Hexadecimal String: A4
Equivalent decimal value: 164
-----
Process exited after 3.579 seconds with return value 0
Press any key to continue . . .
```

Its work also.

Now I just give input X1 lets see what happened:



```
D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-3.exe
Enter your Hexadecimal String: X1

Your Hexadecimal String: X1
Your are input invalid Character: X

Equivalent decimal value: -1
-----
Process exited after 2.355 seconds with return value 0
Press any key to continue . . .
```

Showing the output as invalid character.

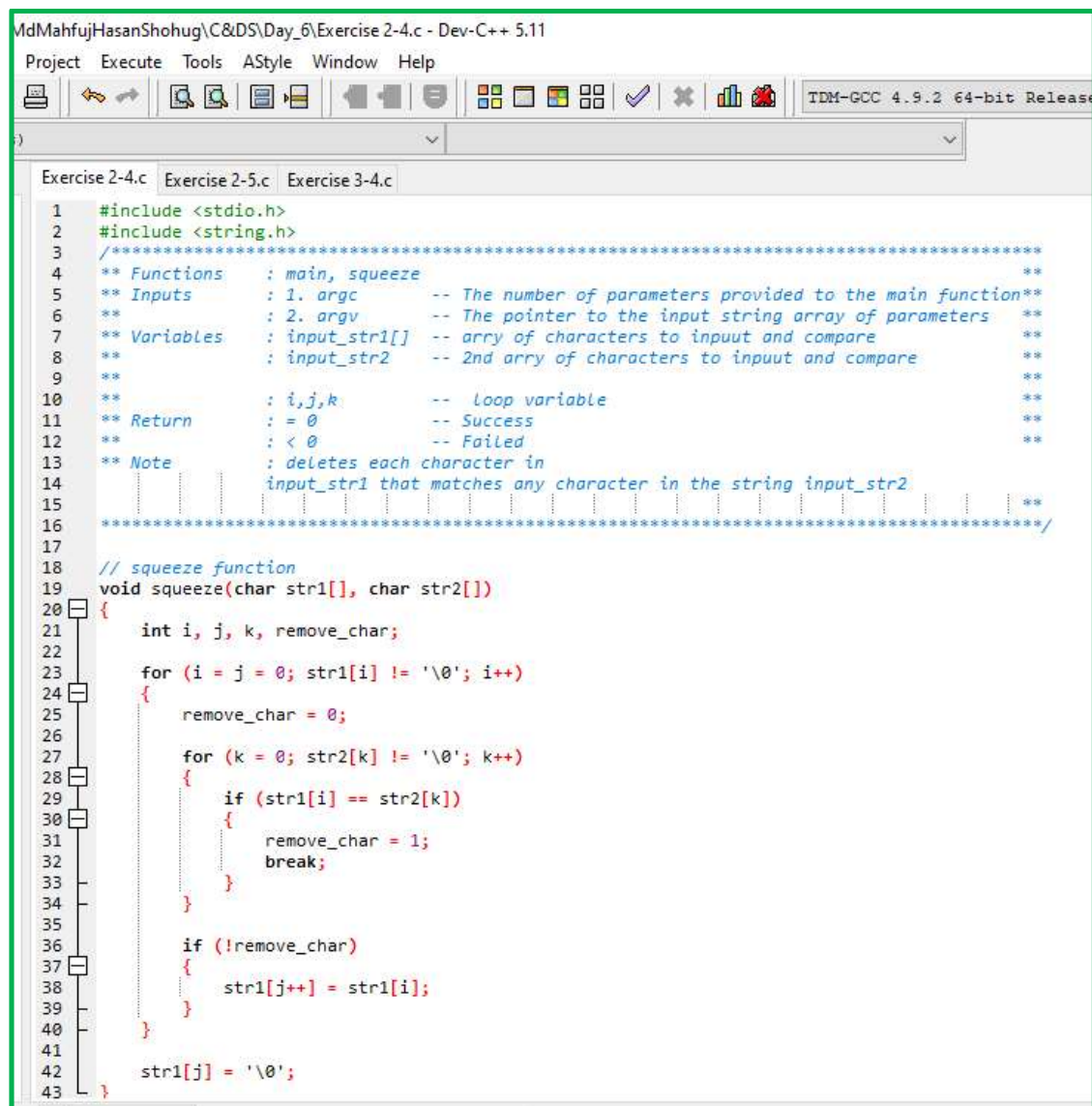


#### 4. Exercise 2-4:

Problem: Write an alternative version of `squeeze(s1,s2)` that deletes each character in `s1` that matches any character in the string `s2`

Solution: This modified version of the program expects `input_str1` and `input_str2` as command-line arguments. If there are fewer than three arguments given, an error message is shown and the program terminates. Using `strncpy`, the input strings are copied from the command-line arguments. To make sure that the strings are not copied outside of the allocated array widths, the `sizeof` operator is utilized. The original and squeezed strings are then produced for comparison with the required values once the squeeze procedure is completed on `input_str1` using `input_str2`.

Source code:



```

MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-4.c - Dev-C++ 5.11
Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release

Exercise 2-4.c Exercise 2-5.c Exercise 3-4.c

1  #include <stdio.h>
2  #include <string.h>
3  /*****
4  ** Functions      : main, squeeze
5  ** Inputs        : 1. argc      -- The number of parameters provided to the main function**
6  **               : 2. argv      -- The pointer to the input string array of parameters **
7  ** Variables     : input_str1[] -- array of characters to input and compare
8  **               : input_str2   -- 2nd array of characters to input and compare
9  **
10 **               : i,j,k         -- Loop variable
11 ** Return        : = 0          -- Success
12 **               : < 0          -- Failed
13 ** Note          : deletes each character in
14 **               : input_str1 that matches any character in the string input_str2
15 **
16 *****/
17
18 // squeeze function
19 void squeeze(char str1[], char str2[])
20 {
21     int i, j, k, remove_char;
22
23     for (i = j = 0; str1[i] != '\0'; i++)
24     {
25         remove_char = 0;
26
27         for (k = 0; str2[k] != '\0'; k++)
28         {
29             if (str1[i] == str2[k])
30             {
31                 remove_char = 1;
32                 break;
33             }
34         }
35
36         if (!remove_char)
37         {
38             str1[j++] = str1[i];
39         }
40     }
41
42     str1[j] = '\0';
43 }

```

```

43 }
44
45
46 /*main function*/
47 int main(int argc, char *argv[])
48     char input_str1[100], input_str2[100];
49
50     printf("Enter the input string 1: ");
51     gets(input_str1);
52
53     printf("Enter the input string 2: ");
54     gets(input_str2);
55
56     printf("Before squeeze: %s\n", input_str1);
57     squeeze(input_str1, input_str2);
58     printf("After squeeze: %s\n", input_str1);
59
60     return 0;
61 }

```

Processing C source file...

-----

- C Compiler: C:\Program Files (x86)\Dev-Cpp\MinGW64\bin\gcc.exe  
 - Command: gcc.exe "D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day\_6\Exercise 2-3.c" -o

Compilation results...

-----

- Errors: 0  
 - Warnings: 0  
 - Output Filename: D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day\_6\Exercise 2-3.exe  
 - Output Size: 129.802734375 KiB  
 - Compilation Time: 0.17s

Now show some outputs on it:

```

D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-4.exe
Enter the input string 1: Mahfuj
Enter the input string 2: Maruf
Before squeeze: Mahfuj
After squeeze: hj
-----
Process exited after 13.48 seconds with return value 0
Press any key to continue . . .

```

Here is match value has been deleted.

If not match then the output will be:

```

D:\Reposetory\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-4.exe
Enter the input string 1: Mahfuj
Enter the input string 2: Gwllloo
Before squeeze: Mahfuj
After squeeze: Mahfuj
-----
Process exited after 11.62 seconds with return value 0
Press any key to continue . . .

```

It not Squeeze.

If it's the 2<sup>nd</sup> string will be out of range then the output is:

```

D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-4.exe
Enter the input string 1: Mah
Enter the input string 2: sdsdmah
Before squeeze: Mah
After squeeze: M

-----
Process exited after 7.521 seconds with return value 0
Press any key to continue . . .

```

## 5. Exercise 2-5:

Problem: Write the function `any(s1,s2)`, which returns the first location in a string `s1` where any character from the string `s2` occurs, or `-1` if `s1` contains no characters from `s2`. (The standard library function `strpbrk` does the same job but returns a pointer to the location.)

Solution: This code stores the outcome of invoking `any` function with the arguments `str1` and `str2` in the variable `result`. The value of the result is verified using the if-else condition. It indicates a match was made and the index is printed if it is not equal to `-1`. If not, the message "No match found" is printed.

Source code:

```

Exercise 2-5.c Exercise 3-4.c Exercise 2-4.c
1  #include <stdio.h>
2  #include <string.h>
3  #include <stdio.h>
4  #include <string.h>
5  /**
6   * Functions      : main, any
7   * Inputs        : 1. argc
8   *               : 2. argv
9   * Variables     : input_str1[]
10                  : input_str2
11                  : input_str2
12                  : i, j
13                  : = 0
14                  : < 0
15                  : character in input_str1 that matches any character show Match found or not
16                  :
17                  :
18                  : function for return the match index number
19                  :
20                  : int i, j;
21                  :
22                  : for (i = 0; str1[i] != '\0'; i++) {
23                  :     for (j = 0; str2[j] != '\0'; j++) {
24                  :         if (str1[i] == str2[j]) {
25                  :             return i; // Match found, return the index
26                  :         }
27                  :     }
28                  : }
29                  : return -1; // No match found
30                  :
31                  :
32                  :
33                  : /*main function*/
34                  : int main(int argc, char *argv[])
35                  : {
36                  :     char input_str1[100], input_str2[100];
37                  :     printf("Enter the input string 1: ");
38                  :     gets(input_str1);
39                  :     printf("Enter the input string 2: ");
40                  :     gets(input_str2);
41                  :
42                  :
43                  :

```

```

44 int first_index_result = any(input_str1, input_str2);
45 if (first_index_result != -1)
46 {
47     printf("Match found at index: %d\n", first_index_result);
48 } else
49 {
50     printf("No match found\n");
51 }
52
53 return 0;
54 }
55

```

Processing C source file...

- C Compiler: C:\Program Files (x86)\Dev-Cpp\MinGW64\bin\gcc.exe  
 - Command: gcc.exe "D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day\_6\Exercise 2-5.c" -o "D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day\_6\Exercise 2-5.exe"

Compilation results...

- Errors: 0  
 - Warnings: 0  
 - Output Filename: D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day\_6\Exercise 2-5.exe  
 - Output Size: 129.287109375 KiB  
 - Compilation Time: 0.17s

The expected output of this code if match different index num:

```

D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-5.exe
Enter the input string 1: Mahfuj
Enter the input string 2: ssafhff
Match found at index: 1

-----
Process exited after 8.745 seconds with return value 0
Press any key to continue . . .

```

a is in the index num: 1.

If not match :

```

D:\Repository\Training\MdMahfujHasanShohug\C&DS\Day_6\Exercise 2-5.exe
Enter the input string 1: Mahfuj
Enter the input string 2: oppoop
No match found

-----
Process exited after 6.525 seconds with return value 0
Press any key to continue . . .

```