1.

Write a program to determine the ranges of char, short, int, and long

variables, both signed and unsigned, by printing appropriate values from standard headersand by direct computation

#include<stdio.h>

#include<limits.h>

void main()

{

printf("THE RANGE OF CHAR:%d TO %d\n",CHAR\_MIN,CHAR\_MAX);

printf("THE RANGE OF UCHAR: 0 to %d\n",UCHAR\_MAX);

printf("THE RANGE OF SHORT INT:%d TO %d\n",SHRT\_MIN,SHRT\_MAX);

printf("THE RANGE OF USHRT: 0 TO %d\n",USHRT\_MAX);

printf("THE RANGE OF INT:%d TO %d\n",INT\_MIN,INT\_MAX);

printf("THE RANGE OF UINT:0 TO %u\n",UINT\_MAX);

printf("THE RANGE OF LONG:%ld TO %ld\n",LONG\_MIN,LONG\_MAX);

printf("THE RANGE OF ULONG 0 TO %lu\n",ULONG\_MAX);

printf("THE RANGE OF long long int:%lld TO %lld\n",LLONG\_MIN,LLONG\_MAX);

printf("THE RANGE OF long long int: %llu\n",ULLONG\_MAX);

}

// Using direct computation

printf("Ranges using direct computation:\n");

// Signed types: -(2^(n-1)) to 2^(n-1) - 1

printf("Signed char: %d to %d\n", -(1 << (sizeof(char)\*8 - 1)), (1<< (sizeof(char)\*8 - 1)) - 1);

printf("Unsigned char: 0 to %u\n\n", (unsigned int)(~0U >> (sizeof(int)\*8 - sizeof(char)\*8)));

printf("Signed short: %d to %d\n", -(1 << (sizeof(short)\*8 - 1)), (1 << (sizeof(short)\*8 - 1)) - 1);

printf("Unsigned short: 0 to %u\n\n", (unsigned int)(~0U >> (sizeof(int)\*8 - sizeof(short)\*8)));

printf("Signed int: %d to %d\n", -(1 << (sizeof(int)\*8 - 1)), (1 << (sizeof(int)\*8 - 1)) - 1);

printf("Unsigned int: 0 to %u\n\n", ~0U);

}

1. Include the .c file along with the .h?

Create a two files names faile.1

File.2

So file.1

#include<stdio.h>

#include"file.1"

int main()

{

persionaldetial();

printf ("\nhe so cute");

}

Then file.2 ,

#include<stdio.h>

int persionaldetial()

{

printf(" my name is hari i am good boy\n");

printf("life is so simple dont make hard");

}

2. How to add comments inside comment?

#include<stdio.h>

int main()

{

/\*

This is a multi-line comment

/\* This inner comment will cause a syntax error \*/

\*/

printf("hari is so sweet");

}

3. Try the following in the data\_type.c file

ret\_scanf = scanf("%d%d%d",&a,&b);

ret\_scanf = scanf("%d%d",&a,&b,&result);

#include<stdio.h>

int main()

{

int a,b;

int ret\_printf=0;

int ret\_scanf=0;

ret\_printf=printf("enter the varible");

ret\_scanf=scanf("%d%d%d",&a,&b);

printf("the value %d%d",a,b,result);

return 0;

}

main.c: In function ‘main’:

main.c:8:27: warning: format ‘%d’ expects a matching ‘int \*’ argument [-Wformat=]

8 | ret\_scanf=scanf("%d%d%d",&a,&b);

| ~^

| |

| int \*

main.c:9:33: error: ‘result’ undeclared (first use in this function)

9 | printf("the value %d%d",a,b,result);

| ^~~~~~

main.c:9:33: note: each undeclared identifier is reported only once for each function it appears in

4. Try the following

char ch = 234;

printf("%c\n",ch);

Ther are some error is first they are used in char its singned type so its range is

-128 to 127 Then you can’t use 234 its will cause a wrap around

So, its show no value , also its shoe formatspecifer its %c its show error

Then use %d .

When you assign 234 to a signed char, this is what happens:

1. The range of an 8-bit signed char is from -128 to 127.
2. You assign 234 to this char.
3. In binary, 234 is represented as 11101010 (in 8 bits).
4. Since the signed char only supports numbers from -128 to 127, this bit pattern is interpreted as a negative number in two's complement form.
5. The bit pattern 11101010 corresponds to -22 in two's complement, so 234 "wraps around" to -22.

Find the wrap is first the binary value 1110 1010

Its will invert the bit

0001 0101, after its decimal value is 21

So add 1 then

Its represent -22.

5. what is the format specifier for the following to print.

long long test;

#include<stdio.h>

#include<stdint.h>

int main()

{

long long test=1234;

printf("%lld\n",test);

return 0;

}

This use as lld-long long .

6. what is the sizeof(long long);

#include<stdio.h>

#include<stdint.h>

int main()

{

long long test=1234;

printf("%ld\n",sizeof(long long));

return 0;

}

Out put :8

1. Assign the float value to int data-type and print the int variable.

#include<stdio.h>

int main()

{

int f=1.24;// after the decimal the values are not considers

printf("%d\n",f);

return 0;

}

Out put :1

8. print the escape sequence \r, \b, \\

printf("hello\b\\\rWorld");

 **\r (Carriage Return)**: Moves the cursor to the beginning of the current line without advancing to the next line.

 **\b (Backspace)**: Moves the cursor one position back, effectively erasing the character before it.

 **\\ (Backslash)**: Prints a literal backslash (\), since the backslash is an escape character in

Output :

world