# **1.**

|  |  |  |  |
| --- | --- | --- | --- |
| **32-bit System** |  |  |  |
| Data Type | Memory (bytes | Range | Format Specifie |
| short int | 2 | -32,768 to 32,767 | %hd |
| unsigned short int | 2 | 0 to 65,535 | %hu |
| unsigned int | 4 | 0 to 4,294,967,295 | %u |
| int | 4 | -2,147,483,648 to 2,147,483,647 | %d |
| long int | 4 | -2,147,483,648 to 2,147,483,647 | %ld |
| unsigned long int | 4 | 0 to 4,294,967,295 | %lu |
| long long int | 8 | -(2^63) to (2^63)-1 | %lld |
| unsigned long long int | 8 | 0 to 18,446,744,073,709,551,615 | %llu |
| signed char | 1 | -128 to 127 | %c |
| unsigned char | 1 | 0 to 255 | %c |
| float | 4 |  | %f |
| double | 8 |  | %lf |
| long double | 12 |  | %Lf |

# 2.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
|  | #include<stdio.h> | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | int main**()** | |  |  |  |  |  |  |  |
|  | **{** |  |  |  |  |  |  |  |  |
|  | short int | | | |  |  | si**;** |  |  |
|  | unsigned short int | | | |  |  | usi**;** |  |  |
|  | unsigned int | | | |  |  | ui**;** |  |  |
|  | int | | | |  |  | i**;** |  |  |
|  | long int | | | |  |  | li**;** |  |  |
|  | unsigned long int | | | |  |  | uli**;** |  |  |
|  | long long int | | | |  |  | lli**;** |  |  |
|  | unsigned long long int | | | |  |  | ulli**;** |  |  |
|  | signed char | | | |  |  | sc**;** |  |  |
|  | unsigned char | | | |  |  | uc**;** |  |  |
|  | float | | | |  |  | f**;** |  |  |
|  | double | | | |  |  | d**;** |  |  |
|  | long double | | | |  |  | ld**;** |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | printf **(**"size of short int %d\n"**,sizeof(**si**));** | | | | | | | |  |
|  | printf **(**"size of unsigned short int %d\n"**,sizeof(**usi**));** | | | | | | | |  |
|  | printf **(**"size of unsigned int %d\n"**,sizeof(**ui**));** | | | | | | | |  |
|  | printf **(**"size of int %d\n"**,sizeof(**i**));** | | | | | | | |  |
|  | printf **(**"size of long int %d\n"**,sizeof(**li**));** | | | | | | | |  |
|  | printf **(**"size of unsigned long int %d\n"**,sizeof(**uli**));** | | | | | | | |  |
|  | printf **(**"size of long long int %d\n"**,sizeof(**lli**));** | | | | | | | |  |
|  | printf **(**"size of unsigned long long int %d\n"**,sizeof(**ulli**));** | | | | | | | | |
|  | printf **(**"size of signed char %d\n"**,sizeof(**sc**));** | | | | | | | |  |
|  | printf **(**"size of unsigned char %d\n"**,sizeof(**uc**));** | | | | | | | |  |
|  | printf **(**"size of float %d\n"**,sizeof(**f**));** | | | | | | | |  |
|  | printf **(**"size of double %d\n"**,sizeof(**d**));** | | | | | | | |  |
|  | printf **(**"size of long double %d\n"**,sizeof(**ld**));** | | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |
|  | **return** 0**;** | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | **}** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

* %d - to print value in integer format
* %o - to print value in octal format
* %x - to print value in hexadecimal format (letters will print in lowercase)
* %X - to print value in hexadecimal format (letters will print in uppercase)
* %p - serves to output a pointer. It may differ depending upon the compiler platform.