## Integer type

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Demonstration of integer types

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#include <cstdio>

using namespace std;

int main(int argc, char \*\* argv)

{

//This will show the size of integer type

printf("---Demonstration of integer types ---\n");

printf("size of char is -> %ld bits\n", sizeof(char) \* 8);

printf("size of short int is -> %ld bits\n", sizeof(short int) \* 8);

printf("size of int is -> %ld bits\n", sizeof(int) \* 8);

printf("size of long int is -> %ld bits\n", sizeof(long int) \* 8);

printf("size of long long is -> %ld bits\n", sizeof(long long) \* 8);

//integer types in octal and hexadecimal

printf("\n=== integer types in octal and hexadecimal ===\n");

long int octX = 0234; //octal no

long int hexY = 0x453ff; //hexadecimal no

long int binZ = 0b1000; //binary no

printf("octX %o is %ld in decimal\n", octX, octX);

printf("hexY %x is %ld in decimal\n", hexY, hexY);

printf("binZ %lb is %ld in decimal\n", binZ, binZ);

return 0;

}

## Qualifiers

Qualifiers are used to modify or adjust quality of object or variable.

There are two types of qualifiers

CV(Constant Volatile) Qualifier - define if can change(mutable)/can not change (immutable)

-> const - for read only

-> volatile - for changing variable usual for thread

-> mutable - used on a data member to make it writeable from a const qualified member function

Storage duration Quatifier - define duration/lifetime of a variable

-> static - lifetime beyond execution of block of class/member function

\*it lives for the DURATION OF THE PROGRAM

\*they are stored GLOBALLY if when stored in a class

\*by default a variable declared outside of a block is static

-> register- they are stored in processor register and easier to access and op on

-> extern - They are define in a translation unit that are separate and

are linked with the code by linker step of compiler