2(a)

main.cpp

```cpp
#include <bitset>
#include <iomanip>

int main() {
    int decimalNumbers[] = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
        , 13, 14, 15, 16, 17, 18,31,100,255,256};
    int size = sizeof(decimalNumbers) / sizeof(decimalNumbers[0]);

    std::cout << "Decimal\t\tBinary\t\tHexadecimal" << std::endl;
    std::cout << "-------\t\t------\t\t-----------" << std::endl;

    for (int i = 0; i < size; ++i) {
        int decimal = decimalNumbers[i];
        std::bitset<8> binary(decimal);
        std::cout << std::setw(2) << decimal << "\t\t" << binary <<
            "\t\t"
                << "0x" << std::hex << std::uppercase << decimal
                    << std::dec << std::endl;
    }

    return 0;
```

Output

```
/tmp/IzyB3ZIzBK.o
Decimal     Binary      Hexadecimal
-------     ------      -----------
 0      00000000        0x0
 1      00000001        0x1
 2      00000010        0x2
 3      00000011        0x3
 4      00000100        0x4
 5      00000101        0x5
 6      00000110        0x6
 7      00000111        0x7
 8      00001000        0x8
 9      00001001        0x9
10      00001010        0xA
11      00001011        0xB
12      00001100        0xC
13      00001101        0xD
14      00001110        0xE
15      00001111        0xF
16      00010000        0x10
```

2(b)