COMSC-260-5318 – Assignment #2

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Sample Run 1:

```
// comment 2: Sample runs for our functions
    cout<<"10101 binary = "<<bin_to_dec( s: "10101")<<" decimal\n";
    cout<<"01010 binary = "<<bin_to_dec( s: "01010")<<" decimal\n";
    cout<<"11111 binary = "<<bin_to_dec( s: "11111")<<" decimal\n";
    cout<<"00001 binary = "<<bin_to_dec( s: "00001")<<" decimal\n\n";

    cout<<"100 decimal = "<<dec_to_bin( n: 100)<<" binary\n";
    cout<<"200 decimal = "<<dec_to_bin( n: 200)<<" binary\n";
    cout<<"300 decimal = "<<dec_to_bin( n: 300)<<" binary\n";
    cout<<"400 decimal = "<<dec_to_bin( n: 400)<<" binary\n\n";

    cout<<"EFA hexadecimal = "<<hex_to_dec( s: "EFA")<<" decimal\n";
    cout<<"FF hexadecimal = "<<hex_to_dec( s: "FF")<<" decimal\n";
    cout<<"1111 hexadecimal = "<<hex_to_dec( s: "1111")<<" decimal\n";
    cout<<"1010 hexadecimal = "<<hex_to_dec( s: "1010")<<" decimal\n\n";

    cout<<"100 decimal = "<<dec_to_hex( n: 100)<<" hexadecimal\n";
    cout<<"200 decimal = "<<dec_to_hex( n: 200)<<" hexadecimal\n";
    cout<<"300 decimal = "<<dec_to_hex( n: 300)<<" hexadecimal\n";
    cout<<"400 decimal = "<<dec_to_hex( n: 400)<<" hexadecimal\n\n";


    system( Command: "PAUSE");
    return 0;
```

```
10101 binary = 21 decimal
01010 binary = 10 decimal
11111 binary = 31 decimal
00001 binary = 1 decimal

100 decimal = 1100100 binary
200 decimal = 11001000 binary
300 decimal = 100101100 binary
400 decimal = 110010000 binary

EFA hexadecimal = 3834 decimal
FF hexadecimal = 255 decimal
1111 hexadecimal = 4369 decimal
1010 hexadecimal = 4112 decimal

100 decimal = 64 hexadecimal
200 decimal = C8 hexadecimal
300 decimal = 12C hexadecimal
400 decimal = 190 hexadecimal
```

Sample Run 2:

```
// comment 2: Sample runs for our functions
    cout<<"100 binary = "<<bin_to_dec( s: "100")<<" decimal\n";
    cout<<"001 binary = "<<bin_to_dec( s: "001")<<" decimal\n";
    cout<<"111 binary = "<<bin_to_dec( s: "111")<<" decimal\n";
    cout<<"010 binary = "<<bin_to_dec( s: "010")<<" decimal\n\n";

    cout<<"105 decimal = "<<dec_to_bin( n: 105)<<" binary\n";
    cout<<"210 decimal = "<<dec_to_bin( n: 210)<<" binary\n";
    cout<<"315 decimal = "<<dec_to_bin( n: 315)<<" binary\n";
    cout<<"420 decimal = "<<dec_to_bin( n: 420)<<" binary\n\n";

    cout<<"AA hexadecimal = "<<hex_to_dec( s: "AA")<<" decimal\n";
    cout<<"BB hexadecimal = "<<hex_to_dec( s: "BB")<<" decimal\n";
    cout<<"CC hexadecimal = "<<hex_to_dec( s: "CC")<<" decimal\n";
    cout<<"DD hexadecimal = "<<hex_to_dec( s: "DD")<<" decimal\n\n";

    cout<<"105 decimal = "<<dec_to_hex( n: 105)<<" hexadecimal\n";
    cout<<"210 decimal = "<<dec_to_hex( n: 210)<<" hexadecimal\n";
    cout<<"315 decimal = "<<dec_to_hex( n: 315)<<" hexadecimal\n";
    cout<<"420 decimal = "<<dec_to_hex( n: 420)<<" hexadecimal\n\n";


    system( Command: "PAUSE");
    return 0;
```

```
100 binary = 4 decimal
001 binary = 1 decimal
111 binary = 7 decimal
010 binary = 2 decimal

105 decimal = 1101001 binary
210 decimal = 11010010 binary
315 decimal = 100111011 binary
420 decimal = 110100100 binary

AA hexadecimal = 170 decimal
BB hexadecimal = 187 decimal
CC hexadecimal = 204 decimal
DD hexadecimal = 221 decimal

105 decimal = 69 hexadecimal
210 decimal = D2 hexadecimal
315 decimal = 13B hexadecimal
420 decimal = 1A4 hexadecimal
```

Sample Run 3:

```
// comment 2: Sample runs for our functions
    cout<<"1000 binary = "<<bin_to_dec( s: "1000")<<" decimal\n";
    cout<<"0010 binary = "<<bin_to_dec( s: "0010")<<" decimal\n";
    cout<<"1110 binary = "<<bin_to_dec( s: "1110")<<" decimal\n";
    cout<<"0100 binary = "<<bin_to_dec( s: "0100")<<" decimal\n\n";

    cout<<"1050 decimal = "<<dec_to_bin( n: 1050)<<" binary\n";
    cout<<"2100 decimal = "<<dec_to_bin( n: 2100)<<" binary\n";
    cout<<"3150 decimal = "<<dec_to_bin( n: 3150)<<" binary\n";
    cout<<"4200 decimal = "<<dec_to_bin( n: 4200)<<" binary\n\n";

    cout<<"AA0 hexadecimal = "<<hex_to_dec( s: "AA0")<<" decimal\n";
    cout<<"BB0 hexadecimal = "<<hex_to_dec( s: "BB0")<<" decimal\n";
    cout<<"CC0 hexadecimal = "<<hex_to_dec( s: "CC0")<<" decimal\n";
    cout<<"DD0 hexadecimal = "<<hex_to_dec( s: "DD0")<<" decimal\n\n";

    cout<<"1050 decimal = "<<dec_to_hex( n: 1050)<<" hexadecimal\n";
    cout<<"2100 decimal = "<<dec_to_hex( n: 2100)<<" hexadecimal\n";
    cout<<"3150 decimal = "<<dec_to_hex( n: 3150)<<" hexadecimal\n";
    cout<<"4200 decimal = "<<dec_to_hex( n: 4200)<<" hexadecimal\n\n";
```

```
Press any key to continue . . .

1000 binary = 8 decimal
0010 binary = 2 decimal
1110 binary = 14 decimal
0100 binary = 4 decimal

1050 decimal = 10000011010 binary
2100 decimal = 100000110100 binary
3150 decimal = 110001001110 binary
4200 decimal = 1000001101000 binary

AA0 hexadecimal = 2720 decimal
BB0 hexadecimal = 2992 decimal
CC0 hexadecimal = 3264 decimal
DD0 hexadecimal = 3536 decimal

1050 decimal = 41A hexadecimal
2100 decimal = 834 hexadecimal
3150 decimal = C4E hexadecimal
4200 decimal = 1068 hexadecimal


Process finished with exit code 0
```

Sample Run 4:

```
// comment 2: Sample runs for our functions
    cout<<"10001 binary = "<<bin_to_dec( s: "10001")<<" decimal\n";
    cout<<"00101 binary = "<<bin_to_dec( s: "00101")<<" decimal\n";
    cout<<"11101 binary = "<<bin_to_dec( s: "11101")<<" decimal\n";
    cout<<"01001 binary = "<<bin_to_dec( s: "01001")<<" decimal\n\n";

    cout<<"10501 decimal = "<<dec_to_bin( n: 10501)<<" binary\n";
    cout<<"21001 decimal = "<<dec_to_bin( n: 21001)<<" binary\n";
    cout<<"31501 decimal = "<<dec_to_bin( n: 31501)<<" binary\n";
    cout<<"42001 decimal = "<<dec_to_bin( n: 42001)<<" binary\n\n";

    cout<<"AA01 hexadecimal = "<<hex_to_dec( s: "AA01")<<" decimal\n";
    cout<<"BB01 hexadecimal = "<<hex_to_dec( s: "BB01")<<" decimal\n";
    cout<<"CC01 hexadecimal = "<<hex_to_dec( s: "CC01")<<" decimal\n";
    cout<<"DD01 hexadecimal = "<<hex_to_dec( s: "DD01")<<" decimal\n\n";

    cout<<"10501 decimal = "<<dec_to_hex( n: 10501)<<" hexadecimal\n";
    cout<<"21001 decimal = "<<dec_to_hex( n: 21001)<<" hexadecimal\n";
    cout<<"31501 decimal = "<<dec_to_hex( n: 31501)<<" hexadecimal\n";
    cout<<"42001 decimal = "<<dec_to_hex( n: 42001)<<" hexadecimal\n\n";
```

```
10001 binary = 17 decimal
00101 binary = 5 decimal
11101 binary = 29 decimal
01001 binary = 9 decimal

10501 decimal = 10100100000101 binary
21001 decimal = 101001000001001 binary
31501 decimal = 111101100001101 binary
42001 decimal = 1010010000010001 binary

AA01 hexadecimal = 43521 decimal
BB01 hexadecimal = 47873 decimal
CC01 hexadecimal = 52225 decimal
DD01 hexadecimal = 56577 decimal

10501 decimal = 2905 hexadecimal
21001 decimal = 5209 hexadecimal
31501 decimal = 7B0D hexadecimal
42001 decimal = A411 hexadecimal
```

Sample Run 5:

```
// comment 2: Sample runs for our functions
    cout<<"100010 binary = "<<bin_to_dec( s: "100010")<<" decimal\n";
    cout<<"001010 binary = "<<bin_to_dec( s: "001010")<<" decimal\n";
    cout<<"111010 binary = "<<bin_to_dec( s: "111010")<<" decimal\n";
    cout<<"010010 binary = "<<bin_to_dec( s: "010010")<<" decimal\n\n";

    cout<<"105010 decimal = "<<dec_to_bin( n: 105010)<<" binary\n";
    cout<<"210010 decimal = "<<dec_to_bin( n: 210010)<<" binary\n";
    cout<<"315010 decimal = "<<dec_to_bin( n: 315010)<<" binary\n";
    cout<<"420010 decimal = "<<dec_to_bin( n: 420010)<<" binary\n\n";

    cout<<"AA010 hexadecimal = "<<hex_to_dec( s: "AA010")<<" decimal\n";
    cout<<"BB010 hexadecimal = "<<hex_to_dec( s: "BB010")<<" decimal\n";
    cout<<"CC010 hexadecimal = "<<hex_to_dec( s: "CC010")<<" decimal\n";
    cout<<"DD010 hexadecimal = "<<hex_to_dec( s: "DD010")<<" decimal\n\n";

    cout<<"105010 decimal = "<<dec_to_hex( n: 105010)<<" hexadecimal\n";
    cout<<"210010 decimal = "<<dec_to_hex( n: 210010)<<" hexadecimal\n";
    cout<<"315010 decimal = "<<dec_to_hex( n: 315010)<<" hexadecimal\n";
    cout<<"420010 decimal = "<<dec_to_hex( n: 420010)<<" hexadecimal\n\n";
```

```
100010 binary = 34 decimal
001010 binary = 10 decimal
111010 binary = 58 decimal
010010 binary = 18 decimal

105010 decimal = 11001101000110010 binary
210010 decimal = 110011010001011010 binary
315010 decimal = 1001100111010000010 binary
420010 decimal = 1100110100010101010 binary

AA010 hexadecimal = 696336 decimal
BB010 hexadecimal = 765968 decimal
CC010 hexadecimal = 835600 decimal
DD010 hexadecimal = 905232 decimal

105010 decimal = 19A32 hexadecimal
210010 decimal = 3345A hexadecimal
315010 decimal = 4CE82 hexadecimal
420010 decimal = 668AA hexadecimal
```