Lab Goal :

This lab was designed to teach you more about base conversion.

Lab Description :

Read in a character or group of characters and convert each letter to its binary equivalent.

```
A = 65 in ascii = 0100 0001 in binary.

2^7 . . . . . . . . . 2^0
128 64 32 16  8  4  2  1
 0   0  0  0  1  0  1  0  in base 2 = = 10 in base 10.
```

Files Needed ::

Convert.java
ConvertRunner.java
convert.dat

To convert a base 10 number to binary follow these steps.

Loop as long as num greater than 0

Base	num /	remainder
2	|65	1
2	|32	0
2	|16	0
2	|8	0
2	|4	0
2	|2	0
2	|1	1

```
while( num > 0 )
{
    remainder = num % 2
    num = num / 2
}
```

Each binary number will contain 8 digits so

65 = 0100 0001. % and div are your friends.

Sample Data :

```
HELLO WORLD
COMPUTER SCIENCE
BIG BASE FUN
```

Sample Output :

```
HELLO WORLD
01001000 01000101 01001100 01001100 01001111 00100000 01010111
01001111 01010010 01001100 01000100


COMPUTER SCIENCE
01000011 01001111 01001101 01010000 01010101 01010100 01000101
01010010 00100000 01010011 01000011 01001001 01000101 01001110
01000011 01000101


BIG BASE FUN
01000010 01001001 01000111 00100000 01000010 01000001 01010011
01000101 00100000 01000110 01010101 01001110
```

Java Base Conversion (allowed on this lab)

```
//converts 234 base 6 to base 10
int base10 = Integer.parseInt("234",6);

//converts base 10 to base 3
out.println(Integer.toString(base10, 3);
```