

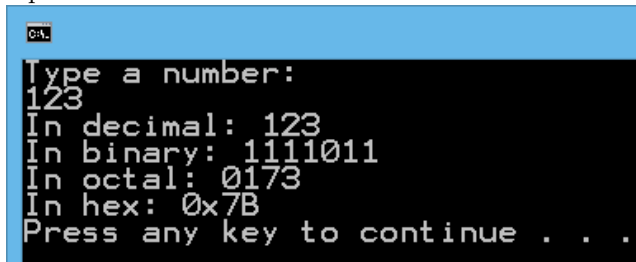
Project 01: Numeral Systems

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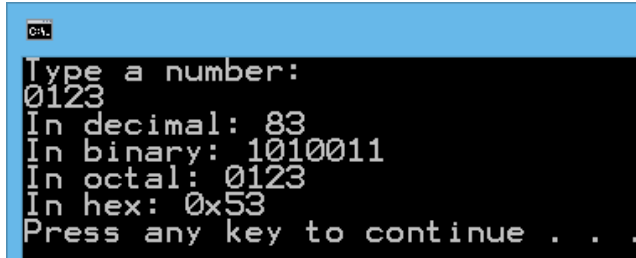
Your task is to write a program, that for every number entered by user will output how this number looks like in different bases (decimal, binary, octal, hexadecimal).

1. (4 points) For every decimal number the user inputs, display how it will look like in the following bases: decimal, binary, octal, hexadecimal. At this point accept only integer numbers, display error to user if it tries to input fraction



```
CA:
Type a number:
123
In decimal: 123
In binary: 1111011
In octal: 0173
In hex: 0x7B
Press any key to continue . . .
```

2. (4 points) Allow user to input octal number (octal numbers start with leading 0). As before display the same number in all the bases (decimal, binary, octal, hexadecimal)



```
CA:
Type a number:
0123
In decimal: 83
In binary: 1010011
In octal: 0123
In hex: 0x53
Press any key to continue . . .
```

3. (4 points) Allow user to input hexadecimal number (hexadecimal numbers start with 0x). As before display the same number in all the bases (decimal, binary, octal, hexadecimal)

```
C:\>
Type a number:
0x123
In decimal: 291
In binary: 100100011
In octal: 0443
In hex: 0x123
Press any key to continue . . .
```

4. (4 points) Accept decimal fractions as input

```
C:\>
Type a number:
123.456
In decimal: 123.456
In binary: 1111011.0111010010
In octal: 0173.3513615237
In hex: 0x7B.74BC6A7EF9
Press any key to continue . . .
```

5. (2 points) Accepts octal fractions as input

```
C:\>
Type a number:
0123.456
In decimal: 83.58984375
In binary: 1010011.100101110
In octal: 0123.456
In hex: 0x53.9700000000
Press any key to continue . . .
```

6. (2 points) Accept hexadecimal fractions as input

```
C:\>
Type a number:
0x123.456
In decimal: 291.27099609375
In binary: 100100011.010001010110
In octal: 0443.2126000000
In hex: 0x123.456
Press any key to continue . . .
```