Simple Encryption

Caesar's cypher is the simplest encryption algorithm. It adds a fixed value to the ASCII (unicode) value of each character of a text. In other words, it shifts the characters. Decrypting a text is simply shifting it back by the same amount, that is, it substract the same value from the characters. Write a function called **caesar** that accepts two arguments: the first is the character vector to be encrypted, while the second is the shift amount. The function returns the output argument **coded**, the encrypted text. The function needs to work with all the visible ASCII characters from space to ~. The ASCII codes of these are 32 through 126. If the shifted code goes outside of this range, it should wrap around. For example, if we shift ~ by 1, the result should be space. If we shift space by -1, the result should be ~. Here are a few things you may want to try with MATLAB before starting on this assignment:

```
double(' ')
ans =
    32
double('~')
ans =
   126
char([65 66 67])
ans =
    'ABC'
' ' : '~'
ans =
    ' !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~'
```

And here are a few example runs:

```
caesar('ABCD',1)
ans =
    'BCDE'
caesar('xyz ~',1)
ans =
    'yz{! '
caesar('xyz ~',-1)
ans =
    'wxy~}'
```

Your Function

Save Reset MATLAB Documentation (https://www.mathworks.com/help/)

```
1
```

Code to call your function

Reset

```
coded    = caesar('ABCD',  3)
decoded  = caesar(coded,  -3)
wrap     = caesar('1234', 96)
back     = caesar(wrap,  -96)
```

Run Function

Assessment:

Submit

- A few simple cases
- Random shifts