Prime

Created 11-18-18 By Scott Murakami This user-defined function will determine all prime numbers between m and n (defined by user) with the function pr = prime(m,n), where the input arguments are positive integers and the output argument, pr, is a vector with prime numbers.

```
function pr = prime(m,n)
    x=1;
    y=abs(n);
    h=0;

    a=sign(n);
    b=sign(m);
    if a == -1
        error('The input argument must be a positive integer')
        return
    end

    if b == -1
        error('The input argument must be a positive integer.')
        return
    end

    c = rem(n,floor(n));
    d = rem(m,floor(m));
    if c ~= 0
        error('The input argument must be a positive integer.')
        return
    end

    if d ~= 0
        error('The input argument must be a positive integer.')
        return
    end

    % n > m ?
    if n < m
        error('The value of n must be larger than the value of m.')
        return
    end

    %prime between m and n
    for k = m : y
        i = 0;
        for t = 2 : k/2
            j = k/t;
            a = j-floor(j);
            if a == 0
                i = 1;
            end
        end
        if (i == 0)
```

```
            pr(x) = k;
            x = x + 1;
            h=h+1;
        end
    end
    fprintf('Number of prime numbers between m and n: %f\n', h)
end
```

```
Number of prime numbers between m and n: 17.000000

ans =

  Columns 1 through 13

    13    17    19    23    29    31    37    41    43    47    53
 59    61

  Columns 14 through 17

    67    71    73    79

Number of prime numbers between m and n: 21.000000

ans =

  Columns 1 through 13

   101   103   107   109   113   127   131   137   139   149   151
 157   163

  Columns 14 through 21

   167   173   179   181   191   193   197   199


Error using prime (line 29)
The input argument must be a positive integer.
```

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