

Answer on Question #45298,
Programming, Mat LAB | Mathematica | MathCAD | Maple

Problem.

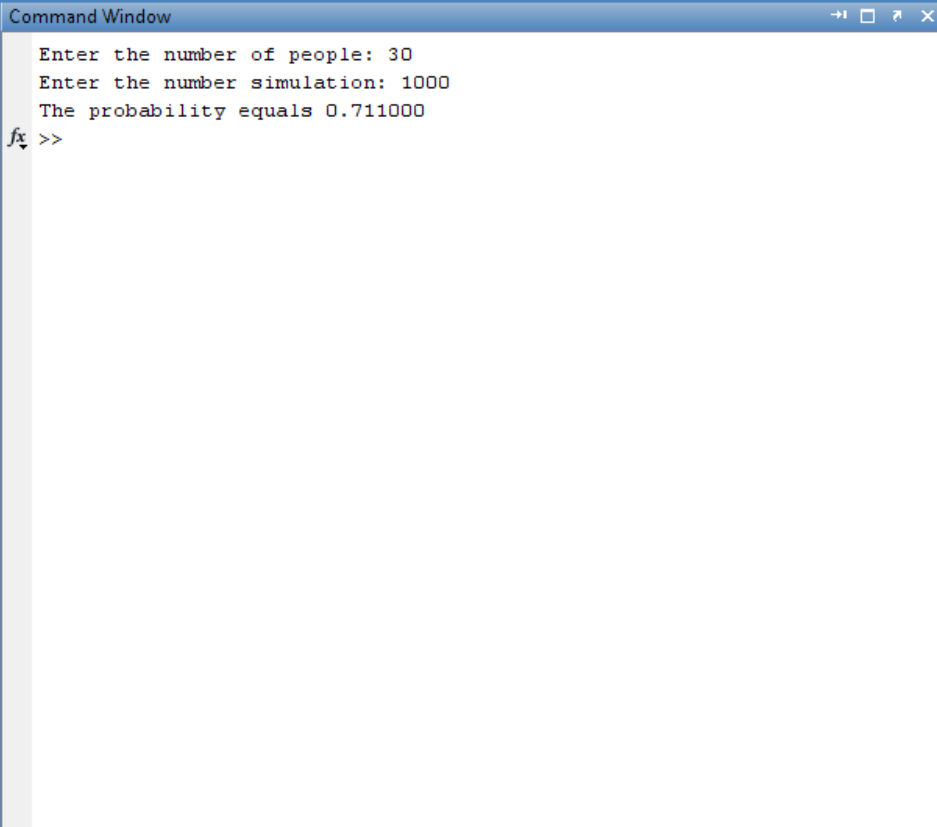
If there is a group of n people in a room, what is the probability that two or more of them having same birthday? It is possible to determine answer to this question by simulation. (Hint: You can generate random dates, n times and determine the fraction of people who born in a given day). Write a function that determines the answer to this question by simulation. The program you write can take n as the input and prints out the probability that two or more of n people will have the same birthday for $n=2,3,4,\dots, 40$

Solution.

Code (MATLAB)

```
function probability()
    clc();
    % Input
    n = input('Enter the number of people: ');
    m = input('Enter the number simulation: ');
    % The number of case in which two or more have the same birthday
    success = 0;
    % Loop to compute success
    for i = 1:1:m
        group = randi(365,1,n);
        if length(unique(group)) ~= n
            success = success + 1;
        end
    end
    % Output
    fprintf('The probability equals %f\n', success/m);
end
```

Result



The screenshot shows a MATLAB Command Window with the following text:

```
Enter the number of people: 30
Enter the number simulation: 1000
The probability equals 0.711000
fx >>
```