**Fermats Theroem**

clc;

clear all;

p=7;

flag=0;

for i=1:p-1

[ ans, b, product]=mod\_power(i,p-1,p)

if(ans ~=1)

flag= 1;

break;

end

end

if(flag==0)

disp('prime')

else if(flag ==1)

disp('not prime')

end

end

function [d,b,c] = mod\_power(a,x,n)

%UNTITLED Summary of this function goes here

% Detailed explanation goes here

x1=dec2bin(x);

l1=length(x1);

temp=a;

b(1)=mod(temp,n);

for i=2:l1

temp=(b(i-1)\*b(i-1));

b(i)=mod(temp,n);

end

k=1;

c=0;

for j=1:l1

e(1,j)=x1(1,(l1-j+1));

end

for i=1:l1

if(e(i)== '1')

c=k\*b(i);

k=c;

end

end

d=mod(c,n);

end

Output:

Enter the value of p: 7

product = 8

prime