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% Discussion Week #6 (Friday)

%Open a file named temprature.txt which contains tempratures at Irvine in
%Jan 2018 in F. Find the max and average temprature and display it to user with
%2 decimal points, tell the user at what day did the max temp occur. Then
%append to the file tempratures in degree C. tell the user max temp in
%degree C with 2 decimal points.Display the new file to the screen.%no
%built in functions allowed

clear;clc;
fid=fopen('temprature.txt','r');
[A,count]=fscanf(fid,'%f');
fclose(fid);
maxtemp=-2;
sum=0;
for i=1:count
    if maxtemp<A(i)
        maxtemp=A(i);
        day=i;
    end
    sum=sum+A(i);
    avg=sum/count;
end
fprintf('The average temprature at Irvine in January 2018 was %0.2f. The max temprature was
FID=fopen('temprature.txt','a');
i=1;
 fprintf(FID,'Tempratures in degree C are:\n');
while i~=32
    y=(A(i)-32)*5/9;
    fprintf(fid,'%10.2f\n',y);
    if i==day
    fprintf( 'The max temprature was in January %i 2018. It was %0.2f degree C.\n',day,y);
    end
    i=i+1;
end
fclose(FID);
type temprature.txt
```

```
%% number1
clear;clc;
x=[1 2 3 4 5 6 7 8 9 10];
average=sum(x)/length(x);
Max=max(x);
fprintf('The max is %i and the average is %0.2f\n',Max,average)
%% number2
fprintf("Hello");
y=5;
for i=1:10
    if y==i
        fprintf('you are on loop number %0.2f\n',i)
    elseif i==10
        fprintf('you are on loop number %0.2f. This is the last iteration.\n',10)
        fprintf('bye!\n')
    else
        fprintf('\n')
    end
end

%% number3

m=[4 2 1 7 6 8 0 2 3 4];
j=1;
for  i=[1:10]
    if m(i)>i
        m(i)=1
    else
        m(i)=0
    end
j=j+1;
end

%% number4
n=1.5;
for i=[2 5 7]
    num=i*n;
    fprintf('num= %-5.2f',num)
end
%% number5
t=[0:0.1:0.3]';
x=[0:3]';
y=x.^2;
disp(' t      x     y');
fprintf('%0.2f %5.2f %5.2f\n',t,x,y);
disp(' t      x     y')
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for i=1:numel(t)
fprintf('%0.2f %5.2f %5.2f\n',t(i),x(i),y(i));
end
%% number6
A=[1:2:10]
fid=fopen('Test.txt','w');
for i=1:numel(A)
fprintf(fid,'test score is %i\n',A(i));
if i==numel(A)
    fprintf('test file is now ready to use')
end
end
fclose(fid)
```

```
%%Spot the error
%% num1
clear;clc;
m = 5:5:55;
N = numel(m);
i=0;
for k = 1:n
sum = sum + m(i);
i=i+1;
fprintf('Total is %0.3f \n',sum)
end

%correct
sum=0;
m = 5:5:55;
N = numel(m);
i=1;
for k = 1:N
sum = sum + m(i);
i=i+1;
fprintf('Total is %0.3f \n',sum)
end

%% num2

%          while y =1:5
%              y = y + 1;
%              if mod(y,2) == 0
%                  fprintf('y is even\n')
%              elseif mod(y,2) == 1
%                  fprintf('y is Odd\n')
%          end
%          fprintf('bye')

%% num3
clear;clc;
fid=fopen('rain.txt');
[A,count]=fscanf(fid,'%f');
disp(A);
fclose(fid);
%% num4
A=[1:10]
fid=fopen('file.txt','w');
fclose(fid);
for i=1:numel(A)
fprintf(fid,'num= %i\n',A(i));
```

```
end
fclose(fid);

%% last
% for [1:10]
%     if m(i)>i
%         m(i)=1;
%     end
%     else
%         m(i)=0;
%     end
% j=j+1;
% end

m=[4 2 1 7 6 8 0 2 3 4];
j=1;
for  i=[1:10]
    if m(i)>i
        m(i)=1
    else
        m(i)=0
    end
j=j+1;
end
```

```
%Generate a random integer between 1-100, then ask user for an input.
%Compare the two values if they are equal tell the user 'Congragulations!
%Your guess is correct!'if not ask the user to guess again. If the user
%could not guess with guessing 5 times terminate the loop and tell the user
%what your number was.  %use while loop,Terminate with break

clear;clc;
x=randi(100)
num=0;

while (1)
y=input('please enter a number between 1-100');
num=num+1;
if y==x
    disp('Congragulations! Your guess is correct!')
    break
end
if num==5
    disp('Sorry you could not guess my number')
    fprintf('my number was %i\n',x)
    break
end
end
```

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% Discussion Week 6 (Mon/Tue)

clear;clc;close all

%% Spot the Error

y = 5;
for (y < 10)
    y = y+1;
    fprintf('%i\n',y(1))
end

A = ones(5,1);
for i = 1:Numel(A)
    if A(i) < 2
        fprintf("A(%i) = %3.0i\n",i,A(i));
    elseif A(i) == 1
        fprintf('Hi');
    else
        break
end

y = 7;
while (y < 10)
    fprintf('The answer is %i')
    y = y+1;
    if y == 11
        break
    else
        continue
    end
end

ID = fopen('CannonballData.txt','w');
A = fscanf(ID,'%f');
fclose(ID);

%% Exact Output

for i = 1:4
    if i == 1
        fprintf('I = %g\n',5.3050)
    elseif i == 3
        fprintf(' I = %+5.2e\n',i+.005)
    else
        fprintf('i = %+-7.2fi\n',i)
```

```
    end
end

for i = 1:4
    if i == 1
        fprintf('I = %g\n',5.3050)
    elseif i == 3
        fprintf(' I = %+5.2e\n',i+.005)
    else
        fprintf('i = %+-7.2fi\n',i)
    end
    break
    continue
end

A = -5.0125;
fprintf('A = %+7.3f\n',A)
fprintf('A = %7.4f\n',A)
fprintf('A = %5.1e/n',A)
fprintf('A = %1.4e\n',A)

A = ones(2,2); B = zeros(2,2);
fprintf('Array A = %i. Array B = %i.\n',A,B)
fprintf('Array A = %i. Array B = %i.\n',A,B') % Any difference?
fprintf('Array A = %i. Array B = %i.\n',A',B) % Now?
fprintf('Array A = %i. Array B = %i.\n',A',B') % How about now?
fprintf('Array A = %i. Array B = %i.\n',[A,B]') % Any difference?
fprintf('Array A = %i. Array B = %i.\n',[A B]') % Ok last time
```

```
%% Question

% Set a while loop to the true condition in order to initialize an
% infinite loop. Inside the loop, calculate y(x) = x^2 for 1 <= x <= 20.
% Store every value of x and y. If x is a multiple of 5 (ie x = 5 10 15
% 20), display just the result. If the result is a multiple of 3, display
% y(current value of x) = result. A result should only be displayed one
% time (ie. the two conditions are mutually exclusive). Break the while
% loop with the break command once ALL the calculations are complete.
% NO extra calculations should take place (ie the x & y arrays should
% contain only 20 elemtns. All displays should be using the fprintf command
% to a precision of 2 along with the sign (+ or -)of each number.
% There should be no extra spaces left or right justified.
% OPTIONAL: Find a way to determine the largest value that ends in 0.
```

```
clear;clc;close all

x = [1:20]';
y = zeros(size(x));
Count = 0; % why start at 0? If I start at 1 do I have to change my code?
while 1
   Count = Count +1;
   y(Count) = x(Count)^2;
   r1 = rem(x(Count),5);
   r2 = rem(y(Count),3);
   if r1 == 0
       fprintf('%1.2f\n',y(Count))
    elseif r2 == 0
        fprintf('y(%i) = %1.2f\n',Count,y(Count))
   end
   if Count == numel(x)
       break
   end
end
```