%%FOR LOOPS

%run this code 5 times. use a for loop

%HINT:Wrap this code in a FOR loop (loop the code 5 times ( i = 1:5) ) and run the section.

for i = 1:5

figure

hist(rand(8,1))

end

# 2nd section

%complete the code

for idx = 1:10

idx

%DISPLAY IDX

end

%%%%%%%%%%%%

for i = 1: 5

 i +1 ; % add "1" to the index, then suppress the output (";")

end

%%%%%%%%%%%%%%

a = [1:3:22]

for i = 1: length(a)%insert here the length() of "a" to establish the extension of the loop

 a(i) %display NOT the index (i), but each element of "a".

 %access the vector using the index (i).

end

# more for loops.

%read the code and the comments carefully. Then do the exercise below.

Vector\_A = [22,33,44,55,66,77]; %";" suppress the output, which is stored into the workspace anyway.

Vector\_B = [11, 32, 43, 54, 65,76];

Vector\_C = [43, 22, 66, 73,41];

list\_of\_vectors = {Vector\_A, Vector\_B, Vector\_C};%we have the funny brackets because it's like a "list of vectors".

three\_vectors\_mean = [] %it creates an empty list where we will store our future results.

for i = 1:length(list\_of\_vectors) %length of the number of element of list of vec.

 vec = list\_of\_vectors{i}; %accessing each of the 3 elements.

 mean\_vec = mean(vec); %calculating the mean for each vector

 three\_vectors\_mean = [three\_vectors\_mean, mean\_vec] %appending the result to a new list.

end

# Section 3.

%use the code above to help you out. Calculate the standard deviation

%(use the function std() )of the vectors "Vector\_A , B, C" stored in

%"list\_of\_vectors", and store it into a list called "three\_vectors\_sd".

Vector\_A = [22,33,44,55,66,77];

Vector\_B = [11, 32, 43, 54, 65,76];

Vector\_C = [43, 22, 66, 73,41];

list\_of\_vectors = {Vector\_A, Vector\_B, Vector\_C};

three\_vectors\_sd = %create an empty list where to store the future results

for i = %1 to the length of the number of element of list of vec.

 %accessing each of the 3 vectors in the list. use the index (i).

 standard\_dev = %calculate the standard dev for each vector. use "std()"

 three\_vectors\_sd = % add the results to the list.

end

%Nested for loops

%create a nested for loop that give you this output

interest=0;

balance = 5000;

for year=1:7

 for month=1:12

 interest=interest+(balance\*0.01);

 end

end

interest

% %

# !!!!!!!!!!!

%While loops

%you won a small grant of 2000$ to run your independent study. With this

%money you have to pay the participants (75$ each). You also want to stop enrolling

%participants when your balance is less than 800$ because you need to

%travel to a conference to present your project!

grant = 2000

while(grant > 800)

 grant = grant - 75

end

%write a loop that while the "value" is smaller than 10, than you subtract 2

%from "value"

%TO STOP AN INFINITE LOOP, PRESS "CTRL C" MULTIPLE TIMES, VERY FAST!

value = 9

while (value < 10)

 value = value - 2

end

%Write a loop where you increment by 1 starting from n=1 until n = 20.

%so while n < 20, if the number is even, display "it's even", if the number

%is odd, display "it's odd". Use the " mod() " function to determine if a

%number is even or odd. Check the documentation.

n = 1

while (n <=20)

 n = n+1

 if mod(n,2)== 0

 disp("it's even!")

 else

 disp("it's odd")

 end

end

%you are analyzing fMRI (functional neuroimaging) data and you noticed

%that subject 4 moved too much and the images cannot be analyzed. You want

%to run a script that analyze all the subject but when it arrives to

%subject 4, it skips it and keeps going with subject 5.

sub = 0 %start from sub 1 with the first iteration

while(sub<12)

 sub = sub+1;

 if sub ==4;

 continue;

 end

 sub

end

# BREAK

%we are recruting participants between 18 and 65. however we are focusing

%on the age group 18-25. Break the loop when the counter increases above

%25.

age = 18;

% while loop execution

while (age < 65 )

 fprintf('value of a: %d\n', age);

 age = age+1;

 if( age > 25)

 % terminate the loop using break statement

 break;

 end

end

 %%for loop and while loop!

 % in a study we have 10 participants. Each study session is composed by 5

% runs. You have to increment by one the number of videos until

%n\_video < to the number of runs for each particiapnts.

run = 5;

for participant = 1:10

 n\_video = 1;

 participant;

 while n\_video < run

 n\_video = n\_video + 1

 end

end