

Recitation 1/31/07

Notes:

- 1) Cannot accept late labs-
- 2) We will now E-mail you if you don't turn something in but Don't rely on us because it would already be late.
- 3) Tests are posted on T-Square will get Tests back next week

Nested for loops:

getPixels() vs. Range

-Matrices have two dimensions: A height and a width

-We sometimes want to know where a pixel is, and getPixels doesn't let us know that.

Range(start, stop, increment)

concatination (+)

IN d EX

start is **INCLUSIVE** and stop is **EXCLUSIVE**

That thing in [] is a sequence

Sequence

a = range(1,4) a = [1,2,3]

a = a+5? : Error

a = a + [5] : a = [1,2,3,5] #Concatination

Matricies are always read in **row** by **column**

Think about it this way:

You have a photo album which contains pictures of your friends.

You want to see which of your friends are in the pictures and add them to a list.

So you would open the photo album, go thorough each picture one at a time and look at each person in that picture to see if they are your friend.

We could do something similar in JES by doing:

for pictures in album:

for people in pictures:

if people[person] == friend:

add to my list

Although this is an awkward scenario the fundamental idea behind it is the same only this time we are dealing with columns and rows



Here's the example we did in class:

```
row0=[1,2,3] #Setting up each row of the Matrix
```

```
row1=[4,5,6]
```

```
row2=[7,8,9]
```

```
matrix=[row0,row1,row2] #Combining each row into 1 Matrix
```

The purpose of this function is multiply each element in the matrix by 2

```
def matrixX2(matrix):
```

```
    for row in matrix: #Gets each row of the matrix and goes through 1 at a time
```

```
        for column in range(len(row)): #For each row, this code will go through all of the columns in that row
            row[column]=row[column]*2 #Multiplies the current element by two and replaces it in the same
remember that each row is itself a sequence and the element must be accessed out of that.
```

```
    print matrix
```

~~~~~

Another example:

```
def increaseRed2(picture):
```

```
    for x in range(1, getWidth(picture) + 1): #What's going on here??
```

```
        for y in range(1, getHeight(picture) + 1): #Here?
```

```
            px = getPixel(picture, x, y) #What happens down here?
```

```
            value = getRed(px)
```

```
            setRed(px, value * 1.1)
```

```
                # Pixel traverses 1,1 then 1,2 until the end of the height then changes columns
```

See you next week!

Your TAs Michael and Micah