An Assignment Template

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This is the abstract for the assignment. Here you state what the assignment is and provide any additional introduction or commentary that you care to.

COMMON STRING OPERATIONS

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This code is about  game of life
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This is a margin note you can use to comment on what you are doing in the command line.

REPRESENTING PYTHON CODE IN YOUR ASSIGNMENT

```
import random
from graphics import *

#this function creates an NxN array filled with zeros
def empty(N):
a=[]
for i in range(N):
b=[]
for j in range(N):
b=b+[0]
a=a+[b]
return a

#this function fills the array a with a portion p of live cells
def fill(a,p):
N=len(a)
for i in range(N):
for j in range(N):
```

Here you can comment on your python code.

```
if random.uniform(0,1)<p:
a[i][j]=1

def update(A,B):
N=len(A)
for i in range(N):
for j in range(N):
neigh=A[(i-1)%N][(j-1)%N]+A[(i-1)%N][j]
+A[(i-1)%N][(j+1)%N]
+A[i][(j-1)%N]
+A[i][(j+1)%N]+A[(i+1)%N][(j-1)%N]
+A[(i+1)%N][j]+A[(i+1)%N][(j+1)%N]
if A[i][j]==0:
if neigh==3:
B[i][j]=1
else:
B[i][j]=0
else:
if neigh==2 or neigh==3:
B[i][j]=1
else:
B[i][j]=0


def gen2Dgraphic(N):
a=[]
for i in range(N):
b=[]
for j in range(N):
b=b+[Circle(Point(i,j),.49)]
a=a+[b]
return a

def push(B,A):
N=len(A)
for i in range(N):
for j in range(N):
A[i][j]=B[i][j]

def drawArray(A,a,window):
#A is the array of 0,1 values representing the state of the game
#a is an array of Circle objects
```

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#window is the GraphWin in which we will draw the circles
N=len(A)
for i in range(N):
for j in range(N):
if A[i][j]==1:
a[i][j].undraw()
a[i][j].draw(window)
if A[i][j]==0:
a[i][j].undraw()

N=50
win = GraphWin("Title",600,600)
win.setCoords(-1,-1,N+1,N+1)
grid=empty(N)
grid2=empty(N)
circles=gen2Dgraphic(N)
fill(grid,0.1)

while True:
drawArray(grid,circles,win)
update(grid,grid2)
push(grid2,grid)
```

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