1- Build a face recognition program
2- Game: Guess the number

**Creating a face recognition program:**

```
def loadImage ( Filename )
```

This function takes the image address and returns the flattened matrix and the small matrix (30 by 30) of the image.

```
def loadFaces ( pathName ):
```

This function takes the address of the folder and flips all the photos into a matrix and outputs them.

```
def findEigenFaces ( cov , num ):
```

Using the function LA.eign Find the specific value and vector of each image and the section real We give it to the output

```
def Convertface ( dataset , Eigenfaces ):
```

In this function inner product We calculate for a flattened matrix and also if it is a data we all calculate for each data

```
def createDataset ( pathName , efaces )
```

Take the address of the file and the special vector and make each image smaller and save it in the database with its name (address).

```
def kNN ( dataset , Input_Face_Vec , Eigenfaces , K ):
```

Calculate the Euclidean distance of the data with the images and k We take the lowest value as output and also find the name that is most often repeated among them with a dictionary and give it to the output.

**2Number guessing game:**

```
def generateArray ():
```

In this function, we create a matrix of random numbers between 100 and 999 and also specify a number for multiples of nine as a fixed number.

```
def play ( silent = False ):
```

We take a picture and with the command .text I wrote my name and student number

Then we created a square as a table with the command.recatngle And then with .line We create borders and lines

Then all the matrix of numbers with function generateArray Make it and write it in the table in the form flase The silence of the image must be shown otherwise it should just be saved

I also wrote using the Matt Plot Lib library if the above code did not run