Mr Ryan's Bingo Project

Brief:

Create a BINGO game using Python. The game should

- MAIN MENU: Ask the user if they want a new game
    - GAME MENU: Ask the user if they want (N)ew number, (D)isplay numbers played so far, or (Q)uit.
        - (N) If they want a new number, and not all 90 numbers have already been played, generate a random number between 1 & 90 that hasn't been played in the game before. It should also display the corresponding 'bingo lingo'. Return to game menu.
        - (D) If they want numbers played so far the numbers (in order of being played) should be displayed on the screen. Return to game menu.
        - (Q)If they want to quit the game, or all 90 numbers have been played, the program should display the numbers played so far on the screen and then exit to the main menu.

Assumptions:

- Numbers played should be 1-90 (inclusive)

Skills needed:

- Random number generation
- Lists
    - Append
    - Search
- String concatenation
- Loops
    - While
- Functions
- Conditional statements
    - If
    - Elif
    - else
- Variables
    - Boolean
    - String
    - Integer

Skills

Variables

A = True #example of boolean variable

B = “Hello” #example of string variable

C = 5 #example of integer variable

Random number generation

from random import randint

var = randint(1,90)

Lists

arrayname = [] #creates empty array

arrayname.append(valuetoappend) # adds a value to the array

if searchval in arrayname: #checks if a value is in the array

String concatenation

print (“Hello”, var1) #prints to screen a concatenated message

var2 = (“Hello”, var1) #stores in a variable a concatenated message

Loops

while menuFlag == True: #repeats whilst the Boolean is set to True

Conditional statements

if a == True: #first criterion to check

elif b == True: #additional criterion to check

else: #if no criterion is met

Functions

func functioname(values): #example of create a function

Guide

Step 1 – generating a random number between 1 & 90

```
1  from random import randint
2  rnum = randint(1,90)
```

Step 2 – check to make sure the random number isn't in a list

```
1  from random import randint
2  rnum = randint(1,90)
3
4  numlist = []
5  if rnum in numlist:
6      print("number is in list")
7
```

You can test the code by putting numbers into the list

```
1  from random import randint
2  rnum = randint(1,90)
3
4  numlist = [1,2,3,4,5,6,7,8,9,10,11]
5  if rnum in numlist:
6      print("number is in list")
7
```

Step 3 – generating a random number, checking if it is in the list and then if it is generating a new number and then adding it to the list.

```
1  from random import randint
2
3  numlist = [1,2,3,4,5,6,7,8,9,10,11]
4  unique = False
5
6  while unique == False:
7      rnum = randint(1,90)
8
9      if rnum in numlist:
10         print("number is in list")
11         unique = False
12     else:
13         print(rnum)
14         numlist.append(rnum)
15         unique = True
16
```

Step 5 – adding a prompt for the user to specify if they want a new number or not.

```
1  from random import randint
2
3  numlist = [1,2,3,4,5,6,7,8,9,10,11]
4  unique = False
5
6  response = input("Would you like a new number? (Y/N)")
7  if response.lower() == "y":
8      while unique == False:
9          rnum = randint(1,90)
10
11         if rnum in numlist:
12             print("number is in list")
13             unique = False
14         else:
15             print(rnum)
16             numlist.append(rnum)
17             unique = True
18 else:
19     print("End of game")
20
```

Step 6 - Adding a loop so that the user can get more than one number

```
1  from random import randint
2
3  numlist = [1,2,3,4,5,6,7,8,9,10,11]
4  ingame = True
5
6  while ingame == True:
7      unique = False
8
9      response = input("Would you like a new number? (Y/N)")
10     if response.lower() == "y":
11         while unique == False:
12             rnum = randint(1,90)
13
14             if rnum in numlist:
15                 print("number is in list")
16                 unique = False
17             else:
18                 print(rnum)
19                 numlist.append(rnum)
20                 unique = True
21     else:
22         print("End of game")
23         ingame = False
24
```

Step 8– adding condition so that when all 90 numbers are generated it doesn't get stuck in a loop.

```
1  from random import randint
2
3  numlist = [1,2,3,4,5,6,7,8,9,10,11]
4  ingame = True
5
6  while ingame == True and len(numlist) <90:
7      unique = False
8
9      response = input("Would you like a new number? (Y/N)")
10     if response.lower() == "y":
11         while unique == False:
12             rnum = randint(1,90)
13
14             if rnum in numlist:
15                 print("number is in list")
16                 unique = False
17             else:
18                 print(rnum)
19                 numlist.append(rnum)
20                 unique = True
21     else:
22         print("End of game")
23         ingame = False
24
```

Step 9 – displaying all the numbers in the list at the end of the game so they can be checked

```
1  from random import randint
2
3  numlist = [1,2,3,4,5,6,7,8,9,10,11]
4  ingame = True
5
6  while ingame == True and len(numlist) <90:
7      unique = False
8
9      response = input("Would you like a new number? (Y/N)")
10     if response.lower() == "y":
11         while unique == False:
12             rnum = randint(1,90)
13
14             if rnum in numlist:
15                 print("number is in list")
16                 unique = False
17             else:
18                 print(rnum)
19                 numlist.append(rnum)
20                 unique = True
21     else:
22         print("End of game")
23         ingame = False
24         print(numlist)
25
```

Step 9 – amending the code to use functions

```
1  from random import randint
2
3  def playbingo():
4      numlist = [1,2,3,4,5,6,7,8,9,10,11]
5      ingame = True
6
7      while ingame == True and len(numlist) <90:
8          unique = False
9
10         response = input("Would you like a new number? (Y/N)")
11         if response.lower() == "y":
12             while unique == False:
13                 rnum = randint(1,90)
14
15                 if rnum in numlist:
16                     print("number is in list")
17                     unique = False
18                 else:
19                     print(rnum)
20                     numlist.append(rnum)
21                     unique = True
22         else:
23             print("End of game")
24             ingame = False
25             print(numlist)
26
27 playbingo()
28
```

Step 10 – tidying up the code

```
from random import randint

def playbingo():
    numlist = []
    ingame = True
    while ingame == True and len(numlist) <90:
        unique = False
        response = input("Would you like a new number? (Y/N)")
        if response.lower() == "y":
            while unique == False:
                rnum = randint(1,90)
                if rnum in numlist:
                    #print("number is in list")
                    unique = False
                else:
                    print(rnum)
                    print(bingolingo(rnum))
                    numlist.append(rnum)
                    unique = True
        else:
            print("End of game")
            ingame = False
            print(numlist)

playbingo()
```

Step 11 – adding the “bingo Lingo” function

```
from random import randint

def playbingo():
    numlist = []
    ingame = True
    while ingame == True and len(numlist) <90:
        unique = False
        response = input("Would you like a new number? (Y/N)")
        if response.lower() == "y":
            while unique == False:
                rnum = randint(1,90)
                if rnum in numlist:
                    #print("number is in list")
                    unique = False
                else:
                    print(rnum)
                    numlist.append(rnum)
                    unique = True
        else:
            print("End of game")
            ingame = False
            print(numlist)


def bingolingo(rnum):
    if rnum == 1:
        return "Kelly's eye"
    elif rnum == 2:
        return "One Little Duck"

playbingo()
```

Step 12 – calling the “bingo Lingo” function

```
from random import randint

def playbingo():
    numlist = []
    ingame = True
    while ingame == True and len(numlist) <90:
        unique = False
        response = input("Would you like a new number? (Y/N)")
        if response.lower() == "y":
            while unique == False:
                rnum = randint(1,90)
                if rnum in numlist:
                    #print("number is in list")
                    unique = False
                else:
                    print(rnum)
                    print(bingolingo(rnum))
                    numlist.append(rnum)
                    unique = True
        else:
            print("End of game")
            ingame = False
            print(numlist)


def bingolingo(rnum):
    if rnum == 1:
        return "Kelly's eye"
    elif rnum == 2:
        return "One Little Duck"

playbingo()
```

Step 13 – finishing off the BingoLingo (up to 90!)

```
from random import randint

def playbingo():
    numlist = []
    ingame = True
    while ingame == True and len(numlist) <90:
        unique = False
        response = input("Would you like a new number? (Y/N)")
        if response.lower() == "y":
            while unique == False:
                rnum = randint(1,90)
                if rnum in numlist:
                    #print("number is in list")
                    unique = False
                else:
                    print(rnum)
                    print(bingolingo(rnum))
                    numlist.append(rnum)
                    unique = True
        else:
            print("End of game")
            ingame = False
            print(numlist)


def bingolingo(rnum):
    if rnum == 1:
        return "Kelly's eye"
    elif rnum == 2:
        return "One Little Duck"
    elif rnum == 3:
        return "Cup of tea"

playbingo()
```

1	Kelly's eye	**31**	Get Up and Run	**61**	Baker's Bun
2	One little duck	**32**	Buckle my shoe	**62**	Turn on the Screw
3	Cup of tea	**33**	Dirty Knee	**63**	Tickle Me 63
4	Knock at the door	**34**	Ask for More	**64**	Red Raw
5	Man Alive	**35**	Jump and jive	**65**	Old Age Pension
6	Tom Mix	**36**	Three Dozen	**66**	Clickety-Click
7	Lucky Seven	**37**	More than Eleven	**67**	Made in Heaven
8	Garden Gate	**38**	Christmas Cake	**68**	Saving Grace
9	Doctor's Orders	**39**	Steps	**69**	Either Way Up
10	Starmer's Den	**40**	Naughty Forty	**70**	Three Score and Ten
11	Legs Eleven	**41**	Time for Fun	**71**	Bang on the Drum
12	One Dozen	**42**	Winnie the Pooh	**72**	Six Dozen
13	Unlucky for some	**43**	Down on your knees	**73**	Queen B
14	Valentine's Day	**44**	Droopy Drawers	**74**	Candy Store
15	Young and Keen	**45**	Halfway there	**75**	Strive and Strive
16	Sweet Sixteen	**46**	Up to Tricks	**76**	Trombones
17	Dancing Queen	**47**	Four and Seven	**77**	Subset Strip
18	Coming of Age	**48**	Four Dozen	**78**	Heaven's Gate
19	Good-bye Teens	**49**	PC	**79**	One More Time
20	One Score	**50**	Half a century	**80**	Eight and Blank
21	Key of the Door	**51**	Tweak of the thumb	**81**	Stop and Run
22	Two little Ducks	**52**	Danny la Rue	**82**	Straight on Through
23	Thee and Me	**53**	Stuck in the Tree	**83**	Time for tea
24	Two Dozen	**54**	Clean the Floor	**84**	Seven Dozen
25	Duck and Dive	**55**	Snakes Alive	**85**	Staying Alive
26	Pick and Mix	**56**	Was She Worth It	**86**	Between the Sticks
27	Gateway to heaven	**57**	Heinz varieties	**87**	Torquay in Devon
28	Over-Weight	**58**	Make them Wait	**88**	Two Fat Ladies
29	Rise and Shine	**59**	Brighton Line	**89**	Nearly There
30	Dirty Gertie	**60**	Five Dozen	**90**	Top of the Shop

Step 14: Updating the menu to add the option to Display numbers played or Quit

```
from random import randint

def playbingo():
    numlist = []
    ingame = True
    while ingame == True and len(numlist) <90:
        unique = False
        response = input("Would you like a new (N)umber? (D)isplay all numbers played or (Q)uit ")
        if response.lower() == "n":
            while unique == False:
                rnum = randint(1,90)
                if rnum in numlist:
                    #print("number is in list")
                    unique = False
                else:
                    print(rnum)
                    print(bingolingo(rnum))
                    numlist.append(rnum)
                    unique = True
        elif response.lower() = "d":
            print(numlist)
        elif response.lower() = "q":
            print("End of game")
            ingame = False

```

Extension activities:

- Add code comments to explain what different sections of code do
- Allow the user to save the numbers to file
- Allow the user to load numbers from file