# Worksheet 5a Using lists Answers

1. DO NOT RUN THIS PROGRAM YET!  
   Predict the output you would see if you were to run this program.

friends = ["Fred","Paul","George","Ringo"]  
print("One of my friends is called ",friends[1])

Prediction:

One of my friends is called Paul

Now type up the program and test if you were correct.

1. Alter the program so that it will print out “Ringo” instead.  
   (Note: You must use the list to do this, don’t cheat and just write in “Ringo”!)

print("One of my friends is called ",friends[3])

1. The first name in the list is wrong.   
   Add a new line to the program that will change the first name from “Fred” to “John”.  
   Add this line to the very end of the program so that you can see if it has worked.

friends = ["Fred ", "Paul ", "George","Ringo"]  
friends[0] = "John"  
print(friends)

1. The following code will create an empty list of 4 names, then ask the user for a name to place in the list. The last line is just there so we can see what the list looks like at the end.

friends = [None] \* 4  
name = input("Enter the name of a friend: ")  
friends[0] = name  
name = input("Enter the name of a friend: ")  
friends[1] = name  
name = input("Enter the name of a friend: ")  
friends[2] = name  
name = input("Enter the name of a friend: ")  
friends[3] = name  
print(friends)

Note that the same variable – “name” – has been re-used throughout the program  
  
Add more code that will ask the user for more names to complete the list. The last line should still print the complete list out.  
  
***See program L5 WS5a Ex4 friends.py in the Sample programs folder***

1. Write a program for a takeaway restaurant. It should start by asking the user to enter 5 dishes that they sell. The program should then print out the list of dishes so the user can check it is right.

meals = [None] \* 5  
name = input("Enter the name of a meal: ")  
meals[0] = name  
name = input("Enter the name of a meal: ")  
meals[1] = name  
name = input("Enter the name of a meal: ")  
meals[2] = name  
name = input("Enter the name of a meal: ")  
meals[3] = name  
name = input("Enter the name of a meal: ")  
meals[4] = name  
print(meals)

1. Add to the previous program so that, once finished, the user should be asked to enter a number for which dish they want. The program should then print out the name of the dish they have chosen.  
   Hint: Remember to use int(input(…)). Also remember that the first meal in the list is number 0!  
   meals = [None] \* 5  
   name = input("Enter the name of a meal: ")  
   meals[0] = name  
   name = input("Enter the name of a meal: ")  
   meals[1] = name  
   name = input("Enter the name of a meal: ")  
   meals[2] = name  
   name = input("Enter the name of a meal: ")  
   meals[3] = name  
   name = input("Enter the name of a meal: ")  
   meals[4] = name  
   print(meals)  
   choice = int(input("Which meal do you want to select? "))  
   print("You have chosen ",meals[choice])

**Extension**

Write a program for a cinema to keep a list of the latest films being screened. The program should start by presenting the user with a menu:

1. Reset list
2. View entire list
3. View one item
4. Edit list
5. Quit

Option 1 should create a blank list of 6 films.

Option 2 should print the entire list in one go.

Option 3 should ask which item the user wants to see (by number) and display that film.

Option 4 should ask the user which item the user wants to change and what film they want to replace it with. The program should then replace that item.

Option 5 should exit the program.

The program should repeat (using a WHILE loop) until the user chooses option 5.

Many potential solutions, provide feedback based on success of student solution.

***See program L5 WS5a Extension.py in the Sample programs folder***

**Task 2**

|  |  |
| --- | --- |
| **Method** | **Description** |
| append(value) | Add a new value to the end of a list |
| insert(index,value) | Inserts a value at a point in the list and moves other items along one |
| list[index]=value | Changes the list value at a given index |
| pop(index) | Removes a particular index value from a list |
| pop() | Removes the last index value from a list |
| remove(value) | Removes a given value from a list |

1. Use the blank trace table below to work out the value of the list at each line of the program.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **List index** | **0** | **1** | **2** | **3** | **4** | **5** | **6** |
| word =["b","e","a","k"] | b | e | a | k |  |  |  |
| word[3] = "n" | b | e | a | n |  |  |  |
| word.append("s") | b | e | a | n | s |  |  |
| word[3] = "d" | b | e | a | d | s |  |  |
| word.insert(1,"r") | b | r | e | a | d | s |  |
| word[0] = "t" | t | r | e | a | d | s |  |
| word.remove ("t") | r | e | a | d | s |  |  |
| word[1] = "o" | r | o | a | d | s |  |  |
| word.pop() | r | o | a | d |  |  |  |
| print(word) | r | o | a | d |  |  |  |

***See program L5 WS5a Task 2 List methods.py in the Sample programs folder***