# Worksheet 9a Two-dimensional lists Answers

1. **Addressing a 2D list**

State the address items (a), (b), (c), (d), (e) in this 2d list:

**filmRatings**

|  |  |  |  |
| --- | --- | --- | --- |
| **Lion** | 9.7 | (a) | 9.5 |
| **Transformers** | 3.7 | 6.8 | (b) |
| **Pirates of the Caribbean** | (c) | 4.9 | 7.3 |
| **(d)** | 8.2 | (e) | 6.7 |

(a) filmRatings[0][2]

(b) filmRatings[1][3]

(c) filmRatings[2][1]

(d) filmRatings[3][0]

(e) filmRatings[3][2]

1. **Creating a 2D list**

Write a program that will create a 2D list of staff members and their annual salaries, using the following code as a template. You should create a list of at least 4 staff members.

salaries = [ ["Steve",35000], ["Alice",47000], … ]

You can check this has worked using the code:

print(salaries)

salaries = [["Steve",35000],["Alice",47000],["Kevin",22000],["Karen",33000]]

1. **Interrogating a 2D list**

Add a statement to your program so that it will print out Alice’s name and salary. Use the addressing technique from **Question 1** to help you.

Extension: Allow the user to choose a number (between 0 and 4) and show the name and salary for that row of the 2D list.

print(salaries[1][0], “has an annual salary of £”, salaries[1][1])

Extension:

row = int(input(“Enter the number for a member of staff (0-4)”))  
print(salaries[row][0], “has an annual salary of £”, salaries[row][1])

1. **Updating a 2D list**

Steve has had a pay rise! Add to your program so that Steve’s salary is now set at 37000. You should do this using the same addressing technique from **Question 1** and **Question 3**. Print the whole 2D list out to check that this has worked correctly.

Extension: Allow the user to choose a number (between 0 and 3) and show the name and salary for that row of the 2D list. The user should then be prompted for a new salary and that value should be stored in the appropriate location.

salaries [0][1] = 37000  
print(salaries)

Extension:

row = int(input(“Enter the number for a member of staff (0-3)”))  
print(salaries[row][0], “has an annual salary of £”, salaries[row][1])  
  
newSalary = int(input(“Enter the updated salary for that staff member: ”))  
salaries[row][1] = newSalary  
  
print(salaries)

1. **Appending to a 2D list**

Add to your program so that the user is asked for the name and salary of a new member of staff. This data should be appended to the 2D list. Print out the whole list to check it has worked.

newStaff = input(“Enter the name of a new staff member: ”)  
newSalary = int(input(“Enter their annual salary: ”))  
salaries.append( [newStaff,newSalary] )  
print(salaries)

***See program L9 WS9a Ex 3-5.py in Sample programs folder***