Name:

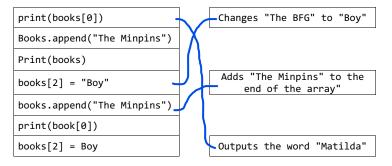
Year 11 Interleaved Homework 1



1. Javier has created an array of Roald Dahl books called books

|--|

a. Match the line of code with the description



b. What would be output by this line of code print(len(books))

5

c. Explain and justify which searching algorithm would be best used when looking for items within the array books

Use one of these connectives in your answer - Because, Therefore, For Example, So That

Linear search, because the list is not sorted

2. Look at the following set of data

a. complete the first pass of a bubble sort to store the data alphabetically

М	F	Т	Е	В
F	M			
	М	Т		
		Е	Т	
F	М	Е	В	Τ

b. What is the maximum number of passes that would be needed to sort the data

4

3. Show the stages of a merge sort

6	2	7	4
6 2		7 4	
6	2	7	4
	2 6		4 7
	2	2467	

4.	The	formula	for	calculating	file	size	in	bit	is:
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Sample Rate x Sample Resolution x Number of Seconds

Calculate the file size of a sound clips that has a rate of 8, a resolution of 4 and is played for 1 minute. Give your answer in Bytes. Show all your working out.

$$8*4*60 = 32*60 = 1920$$
 bits

5. Covert the following:

a. 011110100 from binary into denary

$$64 + 16 = 80$$
 $8 + 2 = 10$

$$80 + 10 + 32 = 90 + 32 = 122$$

b. 11011101 from binary into hexadecimal

$$8 + 4 + 1 = 13$$

0xDD

c. D8 from hexadecimal into binary

$$D = 1101$$

11011000

6. A cinema uses the following criteria to decide if a customer is allowed to see a film that has a 15 rating. Customers have to be 15 years of age or older to see the film. They also need to either have a ticket or have the money to buy a ticket.

Complete the following algorithm to output whether the customer is allowed to see the film or not

A = input("Is the customer 15 or over?")

B = input("Does the customer have a ticket?")

C = input("Does the customer have money to buy a ticket?")

if A	=======================================	"Ye:	s" and (B == "Yes" or C == "Yes"):
	pri	nt("	Allowed")