GCSE

4343/01

COMPUTER SCIENCE CS3
CONTROLLED ASSIGNMENT

For submission in May 2017

(15 hours)

INSTRUCTIONS TO CANDIDATES

This is one of two scenarios available. Each scenario is available separately. You may choose either of the two scenarios. You will have 15 hours to complete your chosen task.

Research tasks can be carried out outside timed conditions.

Read the scenario carefully to make sure that you understand what is needed.

It is important that you work independently from other candidates and make sure that what you hand in is your own unaided work.

Your report should be about 2,000 words.

Make sure that you check your work carefully to ensure that the work you produce is accurate and correct.

Save your work regularly.

INFORMATION FOR CANDIDATES

Teachers and candidates will be required to sign a declaration that all work presented is the work of the candidate alone. Failure to authenticate the work may result in grades being delayed or refused.

The quality of written communication will be assessed in your evaluation.

Money Bags

A school has collected a lot of money for charity on a non-uniform day.

The day was very successful and a large amount of money was raised. Now the money needs to be counted and paid into the school's bank account.

A group of Year 7 pupils has volunteered to count the money and put it into bags ready to be paid into the bank.

The bank has provided the school with a large number of special plastic bags for the money. The bags are labelled to show how much of each type of coin should be put into each bag.

The bank does not allow different types of coins to be mixed in any one bag, see **Figure 1**.

The head teacher is worried the money may not have been counted accurately and needs a quick way to check each bag. The school secretary has suggested weighing the bags to see if they contain the correct number of coins.

The weight of each coin is shown in the table below.

Coin	Weight in grams
1 pence	3.56
2 pence	7.12
5 pence	3.25
10 pence	6.50
20 pence	5.00
50 pence	8.00
£1	9.50
£2	12.00

Your task is to write an application that will:

- Input the weight of a bag of coins
- Input the type of coin
- Calculate how much the weight is different from the correct weight
- For each bag;
    - Display the difference in weight
    - Display number of coins to be added or removed
- When all the bags have been checked;
    - Display total number of bags checked
    - Display total value of the coins added
    - Display total value of the coins removed

Produce a report fully documenting your solution to automate this process. Credit will be given for the quality of your solution. Your report should be about 2,000 words.
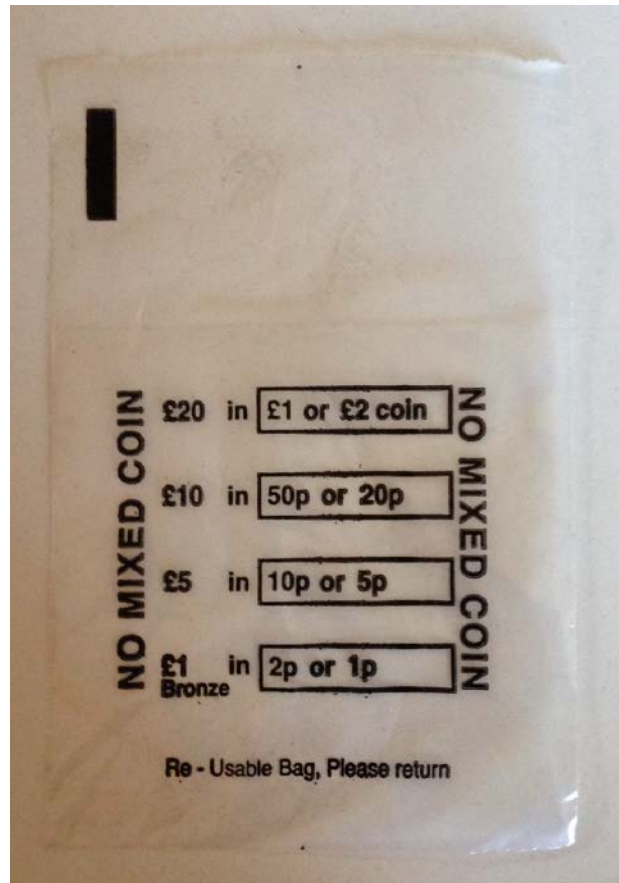
Figure 1: A money bag