

Pearson BTEC Level 3 Nationals Extended Certificate  
Foundation Diploma, Diploma, Extended Diploma

**Friday 17 January 2020**

Paper Reference **31768H**

**Computing**

**Unit 1: Principles of Computer Science**

**Information Booklet**

### Instructions

- You will need the information in this booklet to answer some questions.
- Read the information carefully.
- You must **not** write your answers in this booklet.
- Only your answers given on the question paper will be marked.
- Do not return this Information Booklet with the question paper.

Turn over ►

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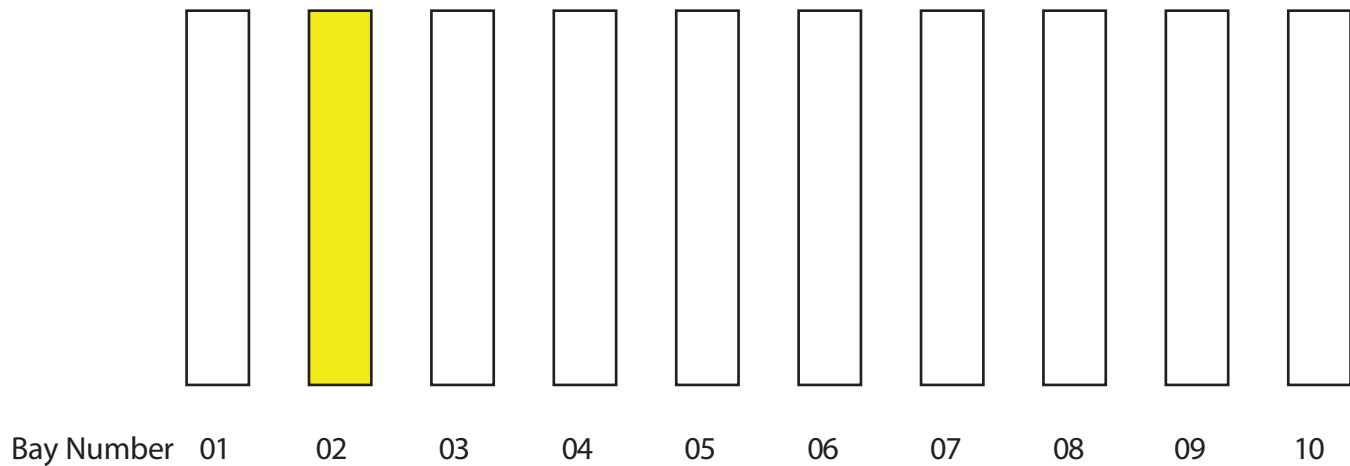
  
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## SECTION 1

The information in this section should be used to answer Question 1.

The warehouse has 10 bays. Each bay has 10 shelves divided into 10 sections.

This diagram shows the arrangement of the bays.



This diagram shows the sections of a bay.

Section	01	02	03	04	05	06	07	08	09	10
Shelf 01										
02										
03										
04										
05										
06										
07										
08										
09										
10										

Each location is given a six digit code. The code is made by combining bay number, shelf number and section number.

The code for the highlighted location would be 020905.

Items of stock have a six digit code for each type of item; there could be several of each item in stock at any time.

**Figure 1** shows some example data that the system will store. Any empty location has an item code of 0.

Index	Location	Item code
0	010101	929194
1	010102	929186
2	010103	514832
3	010104	550015
4	010105	0
5	010106	0
6	010107	458961
7	010108	478591
8	010109	0
9	010110	514832
10	010111	514832

**Figure 1**

**Figure 2** shows part of the pseudocode for the system.

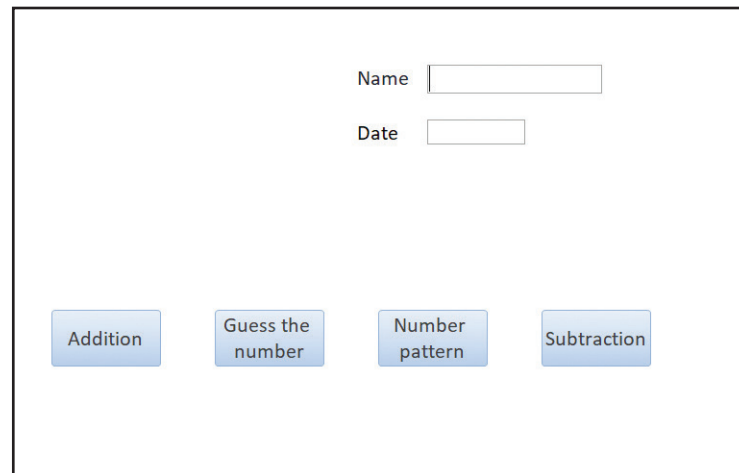
```
1  INPUT item required
2  WHILE LENGTH of item required is 0
3    INPUT item required
4  END WHILE
5  FOR index = 0 to 999
6    IF item code (index) = item required
7      item location = location (index)
8      OUTPUT ("item Found")
9      OUTPUT ("Bay", item location[0:2])
10     OUTPUT ("Shelf", item location[2:4])
11     OUTPUT ("Section", item location[4:6])
12   END IF
13 END FOR
```

**Figure 2**

## SECTION 2

The information in this section should be used to answer Question 2.

Figure 3 shows the main menu screen for the program.



The screenshot shows a main menu screen with the following elements:

- Two input fields: "Name" and "Date".
- Four buttons: "Addition", "Guess the number", "Number pattern", and "Subtraction".

Figure 3

Figure 4 shows part of the pseudocode for the 'Guess the number' game.

```
1 target = RANDOM(1,100)
2 FOR try = 1 to 5
3     INPUT (guess)
4     IF guess < target
5         OUTPUT "Too high try again"
6     ELSEIF guess > target
7         OUTPUT "Too low try again"
8     ELSE
9         OUTPUT "Well done you guessed the number"
10    END IF
11 END FOR
```

Figure 4

**Figure 5** shows part of the pseudocode for the 'Number pattern' game.

```
1 start=4
2 OUTPUT (start)
3 FOR counter = 1 to 6 STEP 2
4     start=start+counter
5     OUTPUT(start)
6 END FOR
7 OUTPUT("end")
```

**Figure 5**

### SECTION 3

The information in this section should be used to answer Question 3.

Figure 6 shows the rules for using a ticket machine at a bus station.

- All tickets cost 50p.
- If more than 50p is inserted no change is given.
- Only 10p, 20p, 50p and £1 coins can be used.
- Any number of coins can be used.
- The user presses a button when they finish inserting coins.
- A ticket is printed showing the date and the amount paid.

Money inserted	Button pressed	Ticket printed
FALSE	FALSE	NO
FALSE	TRUE	NO
TRUE	FALSE	NO
TRUE	TRUE	YES

Figure 6

## SECTION 4

The information in this section should be used to answer Question 4.

**Figure 7** shows a list of requirements produced by the owner of a driving school.

- Reduce the number of missed appointments.
- Produce a list of daily appointments for each instructor.
- Offer clients a choice of cars with manual or automatic transmission.
- Clients must take their driving test within two years of passing the theory test.
- Instructors need clients' details.
- Instructors need to know where to pick up clients for each lesson.
- Lessons are 1 hour, but a test appointment is 3 hours.

**Figure 7**



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