

APOLLO

B2 Programming HL

Computer Science
First assessment 2027
2 questions | mark schemes

2. (a) Award [3 max]

It is easier to work with one single structure than several individual ones;
Individual elements that have the same value can be quickly accessed via their indices;
Iteration through arrays is more efficient / Methods associated with arrays can make operations more efficient;

(b) Award [4 max]

repeat for each entry/index in the `Name` array
 identify the position of the space in each name
 save the substring to the left as `s1` and the substring to the right as `s2`
 save the new entry as `s2+space+s1`

(c) Award [1]

```
MAT[1][2];
```

(d) Award [1] each;

The value of `a` is: 6
The value of `b` is: 17

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(e) *Award [5 max] as follows:**Award [1] for initial variables correctly set;**Award [1] for both loops;**Award [1] for checking seat for False;**Award [1] for updating row value;**Award [1] for resetting tempTotal;**Award [1] for printing the correct row;*

```

public void least(boolean[][]seats)
{
    int falseTotal = 0;
    int leastRow = 0;

    for (int x = 0; x < 40; x++)
    {
        int tempTotal = 0;
        for (int y = 0; y < 30; y++)
        {
            if (seats[x][y] == false)           // if(!seats[x][y] )
                tempTotal = tempTotal + 1;
        }
        if (tempTotal > falseTotal)
        {
            leastRow = x;
            falseTotal = tempTotal;
        }
    }
    System.out.println ("Row with least seats sold is " + leastRow);
}

```

8. (a) **Award [3 max]**

It is easier to work with one single structure than several individual ones;
 Individual elements that have the same value can be quickly accessed via their indices;
 Iteration through arrays is more efficient / Methods associated with arrays can make operations more efficient;

(b) **Award [4 max] as follows:**

repeat for each entry/index in the `Name` list
 identify the position of the space in each name
 save the substring to the left as `s1` and the substring to the right as `s2`
 save the new entry as `s2+space+s1`

repeat for each entry/index in the `Name` list
 use the `split()` function
 to separate the 2 strings into 2 list values (`s1` and `s2`)
 save the new entry as `s2+space+s1`

(c) **Award [1]**

```
MAT[1][2];
```

(d) **Award [1] for each:**

The value of `a` is: 6
 The value of `b` is: 17

(e) **Award [5 max] as follows:**

Award [1] for initial variables correctly set;
Award [1] for both loops;
Award [1] for checking seat for `False`;
Award [1] for updating row value;
Award [1] for resetting `temp_total`;
Award [1] for printing the correct row;

```
def least(seats):
    false_total = 0
    least_row = 0

    for x in range(40):
        temp_total = 0
        for y in range(30):
            if seats[x][y] == False:
                temp_total = temp_total + 1
        if temp_total > false_total:
            least_row = x
            false_total = temp_total

    print("Row with least seats sold is ", least_row)
```