

## 003 An algorithm a day...

### Algorithm Question

Source: OCR GCSE Computing Exam Jan 2011

A program has been written to obtain 3 random virtual dice rolls:

```
dice_roll_1 = random(1,6)
dice_roll_2 = random(1,6)
dice_roll_3 = random(1,6)
print(dice_roll_1)
print(dice_roll_2)
print(dice_roll_3)
```

Rewrite this algorithm so that it makes use of iteration.

[4 marks]

## Algorithm Example Answer

A program has been written to obtain 3 random virtual dice rolls:

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print(dice_roll_3)
```

Rewrite this algorithm so that it makes use of iteration

[4 marks]

**\*\*\*There are always different ways to solve a problem. This algorithm is just an example. What is important is that the logic is correct!\*\*\***

### LOGIC:

**Use of a FOR or WHILE loop**

**If a FOR loop used:**

**must loop for 3 iterations**

**If a WHILE loop used:**

**condition must allow for only 3 iterations (may require a counter being incremented / decremented)**

**Within each loop:**

**Creation of random number**

**OUTPUT of dice generated**

### EXAMPLE ALGORITHM:

#### FOR LOOP EXAMPLE:

```
for counter = 1 to 3
    dice_number = random(1,6)
    print(dice_number)
next counter
```

#### WHILE LOOP EXAMPLE:

```
counter = 3
while counter !=0
    dice_number = random(1,6)
    print(dice_number)
    counter = counter - 1
endwhile
```