

Computing

Lesson 2: Functions

Programming Part 4: Subroutines

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Task 1 - Investigating functions

Worked example 1

```
1 def to_the_power(a, b):
2     answer = a**b
3     return answer
```

Task: Complete the trace table below for when the function call `to_the_power(2, 3)` is made.

	Variables			
Line	a	b	answer	return value
1	2	3		
2			8	
3				8



Task 1 - Investigating functions

Worked example 2

```
1 def find_highest(a, b):
2     if a > b:
3         return a
4     else:
5         return b
```

Task: Complete the trace table below for when the function call `find_highest(9, 12)` is made.

	Variables			
Line	a	b	Condition a > b	return value
1	9	12		
2			False	
3				12



Task 1 - Investigating functions - Trace table 1

Trace table 1

```
1 def average_value(a, b):
2     answer = (a + b) / 2
3     return answer
```

Task: Complete the trace table below for when the function call `average_value(4, 6)` is made.

	Variables			
Line	a	b	answer	return value
1				
2				
3				



Task 1 - Investigating functions - Trace table 2

Trace table 2

```
1 def area_circle(radius):
2     area = 3.14 * radius ** 2
3     return area
```

Task: Complete the trace table below for when the function call `area_circle(4)` is made.

	Variables			
Line	a	b	answer	return value
1				
2				
3				



Task 1 - Investigating functions - Trace table 3

Trace table 3

```
1 def multiple(a,b):
2     if a%b == 0: # check if a divides by 2
3         return "Yes"
4     else:
5         return "No"
```

Task: Complete the trace table below for when the function call `area_circle(4)` is made.

	Variables			
Line	a	b	answer	return value
1				
2				
3				



Task 1 - Investigating functions - Trace table 4

Trace table 4

```
1 def even_odd(a):
2     if a%2 == 0: # check if 2 divides by a
3         return "Even"
4     else:
5         return "Odd"
```

Task: Complete the trace table below for when the function call `even_odd(11)` is made.

	Variables			
Line	a	b	answer	return value
1				
2				
3				



**Resume the video
now**

