

## Sandwich order calculator: solutions

### Predict

Take a look at the code below. Read it carefully and try to make a prediction about what might happen when this code is executed. Think about the different inputs that could be used with this program.

```
1      total_cost = 0.00
2
3      sugar_tax = 0.50
4
5      print("Sandwich or Wrap?")
6
7      bread_type = input()
8
9      print("Meat, Vegetarian or Vegan?")
10
11     filling_type = input()
12
13     print("Cookie, Crisps, Fruit or None")
14
15     pudding = input()
16
17     print("Fizzy drink, Water, Juice or None")
18
19     drink = input()
20
21     if bread_type != "sandwich":
22
23         total_cost = 2.00
24
25     else:
26
27         total_cost = 3.00
28
29     if filling_type == "vegetarian" or filling_type == "vegan":
30
31         total_cost = total_cost + 1.00
32
33     else:
34
35         total_cost = total_cost + 1.50
36
37     if pudding == "cookie" and drink == "fizzy drink":
38
39         total_cost = total_cost + sugar_tax
```

```
21     if pudding == "none" or drink == "none":
22         total_cost = total_cost - 0.50
23     print(f"Your total cost is: ${total_cost}")
```

Run

Open and **run** the file with this code. Here's a [copy of the code](https://replit.com/@awade05/pizzacomplete#main.py) (https://replit.com/@awade05/pizzacomplete#main.py if needed).

Was your prediction correct? Did anything unexpected happen? Write down your thoughts below:

## Investigate

Questions/activities	Your answers ▾
<ul style="list-style-type: none"><li>Which bread type do you need to choose for the total cost to increase by \$3.00?</li></ul>	Wrap
<ul style="list-style-type: none"><li>Which filling types can you choose for the total cost to increase by \$1.00?</li></ul>	Vegetarian or vegan
<ul style="list-style-type: none"><li>Which choices lead to a sugar tax being applied?</li></ul>	A cookie and a fizzy drink
<ul style="list-style-type: none"><li>List the two possible choices that you can make to get \$0.50 taken off the total cost.</li></ul>	None for drink None for pudding
<p>On line 21, change the or to an and.</p> <ul style="list-style-type: none"><li>What choices do you now need to make to get \$0.50 taken off the total cost?</li></ul>	You need to choose none for drink and pudding

## Modify

### Modification

### Hint

---

The code only works if you enter the data in lowercase. Modify the code so that it converts the input to lowercase automatically.

Think about the techniques that you used in the last few lessons. Revisit old code.

E.g. `.upper()` will convert to uppercase.

---

Add in an option for if they would like an extra sauce.

Look at the original lines 3 and 4 for sample code.

---

Add in an option for if they would like an extra salad.

---

Add in some code to increase the total cost by \$1 if they choose an extra sauce AND an extra salad.

Look at the original line 19 for sample code.

---

## Make

A pizza restaurant would like you to create a program that works out the total cost for each pizza that they sell.

Here is a breakdown of their charges:

### Base options

Thick crust	\$8.00
Thin crust	\$10.00

### Size options

*No additional charge*

8 inch

10 inch

*\$2 additional charge*

12 inch

14 inch

18 inch

### Cheese

Cheese is included but there is a **discount** of \$0.50 if you choose no cheese

### Type

Margarita	+ \$0.00
Vegetable	+ \$1.00
Vegan	+ \$1.00
Hawaiian	+ \$2.00
Meat feast	+ \$2.00

### Voucher code

If the customer buys an 18-inch pizza and has the voucher code “FunFriday”, then they get \$2.00 off their pizza.

## Task 1: Which pizza?

- Create a series of `print` statements and inputs that will allow the customer to type in their pizza requirements
- Test your code using the example input/outputs below

### Example

**Note:** Use this example to help you test your program. Given the input you see in this sample interaction, this is the output your program should produce.

---

The user is prompted about their base choice	Would you like a thin or thick crust?
--	---------------------------------------

The user enters a response	thick
----------------------------	-------

The user is prompted about their pizza size	Pick a pizza size from 8, 10, 12, 14 or 18 inches
---	---

The user enters a response	14
----------------------------	----

The user is prompted if they would like cheese	Would you like cheese? Y/N
--	----------------------------

The user enters a response	Y
----------------------------	---

	Which pizza type would you like?
The user is prompted about the pizza type	Margherita, Vegetable, Vegan, Hawaiian or Meat Feast

The user enters a response	margherita
----------------------------	------------

The user is prompted about a voucher code	If you have a voucher code, enter it now
---	--

Press enter to skip

The user enters a response	FunFriday
----------------------------	-----------

The program ends

>>>

### Sample code block:

```
print("Thin or thick crust?")  
  
base = input()
```

### Common errors:

- ☐ Capital P used for print
- ☐ Brackets missing from start or end of text
- ☐ Speech marks missing from start or end of text
- ☐ Brackets missing at the end of the input

## Task 2: Calculate the base cost

- Make sure that a `total_cost` variable has been created for the total cost of the pizza
- Create an `if` statement that will apply \$10 if their pizza is thin and \$8 if it is thick
- Use a `print` statement to print the `total_cost` at the end of the code block so that you can test that the code is working



**Tip:** Test it with **both** inputs. What is the `total_cost` when the user enters `thick` and what is the `total_cost` when the user enters `thin`?

**Sample code block:**

```
total_cost =   
  
if base == "thin":  
    total_cost = total_cost +   
  
else:  
    total_cost =   
  
# for testing  
print(total_cost)
```

**Common errors:**

- ☐ Upper case `I` is used for `if`
- ☐ One `=` sign is used instead of `==`

- ❑ Colon : missing at the end of the `if`
- ❑ Capital E used for `else`
- ❑ Indents/spaces have been missed
- ❑ Quotations missed around the choice in the condition
- ❑ Choice in the condition is written in uppercase but `.lower()` has been used

### Task 3: Add the pizza size cost

- There are just two different costs for the size options. If the pizza is larger than 10 inches then an additional charge of \$2 is applied. Create an `if` statement that will apply this charge based on this condition.
- Use a `print` statement to print the total cost and test your code.

#### Sample code block:

```
if size > 10:
```

## Task 4: Cheese or no cheese

- If the cheese is not equal to yes then a discount of 50 pence is applied to the total cost. Create an `if` statement that will perform this calculation based on the condition.

**Sample code block:**

```
if cheese != "y":
```

## Task 5: Pizza types

- There are three different pricing options for the pizza. The margherita pizza doesn't have an additional charge so decide if this needs to be part of one of your conditions.
- If the pizza is vegetable or vegan, then there is an additional charge of \$1.
- If the pizza is Hawaiian or meat feast, then there is an additional charge of \$2.
- Decide what `if` statements and conditions you will need to apply these costs.
- Test your code by using a `print` statement to print the total cost. Remember to test all possible inputs.

## Task 6: The voucher code

- The voucher code can be applied when the customer purchases an 18-inch pizza and has typed in the correct code which is FunFriday . Create an `if` statement that checks that both conditions are true and then applies the \$2 discount.

## Task 7: Display the total cost

- Repeat the order back to the customer and reveal the total cost of the pizza

## Testing your code

- Test your code by entering all of the different possible scenarios for ordering a pizza
- Fix any errors that might occur
- Remember to use `.lower()` or `.upper()` where required

Here is a sample testing table that could be used to check the output based on certain inputs.

### Example

**Note:** Use this example to help you test your program. Given the input you see in this sample interaction, this is the output your program should produce.

The user is prompted about their base choice	Would you like a thin or thick crust?
The user enters a response	thin
The user is prompted about their pizza size	Pick a pizza size from 8, 10, 12, 14 or 18 inches
The user enters a response	12
The user is prompted if they would like cheese	Would you like cheese? Y/N
The user enters a response	Y
The user is prompted about the pizza type	Which pizza type would you like?  Margherita, Vegetable, Vegan, Hawaiian or Meat Feast
The user enters a response	margarita

The user is prompted about a voucher code

If you have a voucher code, enter it now

Press enter to skip

The user enters a response

FunFriday

The order is displayed back to the user with the total cost displayed

Your thin crust 12 inch margherita pizza will cost \$12.0