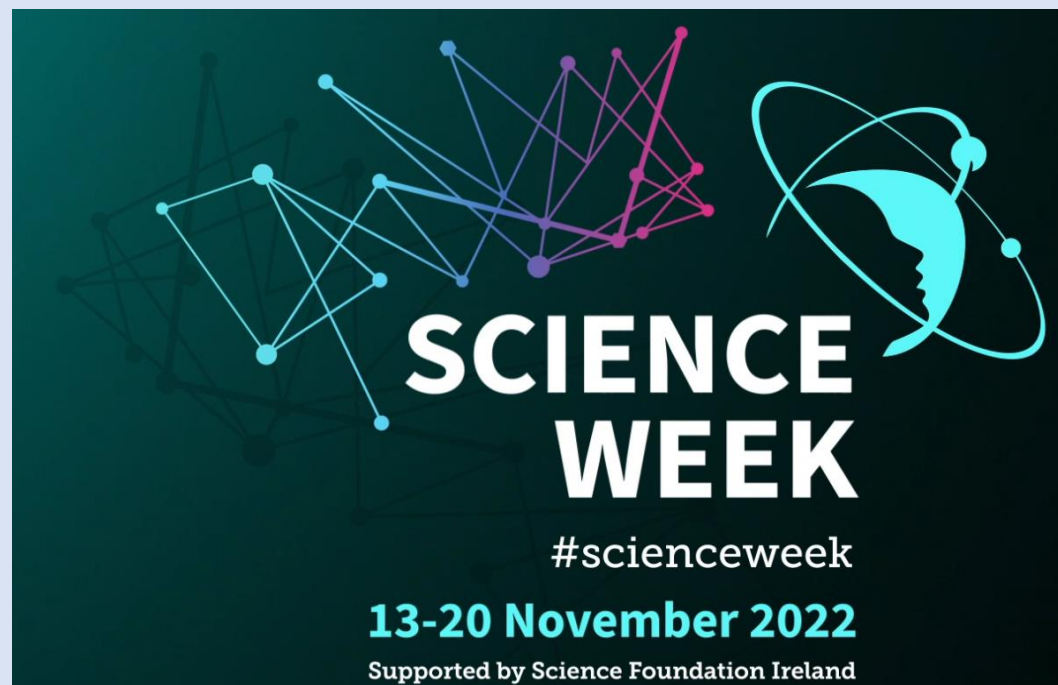




Computational Thinking Tasks for Science Week 2022



PACT team
Department of Computer Science
Maynooth University, Ireland



<https://pact.cs.nuim.ie>



Dinner time



Cindy, Denis, Eric, Frank, and Gloria met in a restaurant.

MENU

SOUP
Vegetable Soup
Tomato Soup
Mushroom Soup

MAIN DISHES
Pizza
Chicken
Beef
Salad
Pasta

DRINKS
Coke
Orange Juice
Water

We know a few facts about their orders:

- Each item on the menu was ordered at least once.
- Each person ordered a soup, a main dish, and a drink.
- Eric, who ordered the same soup as Frank, chose pasta as his main dish.
- Of the two persons who ordered vegetable soup, one selected chicken and one selected beef as their main dish.
- Gloria ordered orange juice and salad.
- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.



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- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION

What did each person order?

	Soup	Main dish	Drink
Cindy			
Denis			
Eric			
Frank			
Gloria			

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- Gloria ordered orange juice and salad.
- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- **Cindy ordered chicken as her main dish.**

QUESTION

What did each person order?

	Soup	Main dish	Drink
Cindy		Chicken	
Denis			
Eric			
Frank			
Gloria			

Cindy ordered chicken.

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- Gloria ordered orange juice and salad.
- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION

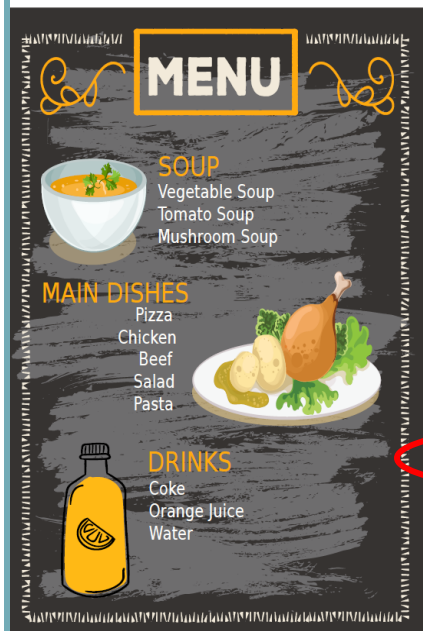
What did each person order?

	Soup	Main dish	Drink
Cindy		Chicken	
Denis			
Eric			
Frank			
Gloria		Salad	Orange Juice

Gloria ordered OJ and a salad

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- Of the two persons who ordered vegetable soup, one selected chicken and one selected beef as their main dish.
- Gloria ordered orange juice and salad.
- **Coke was ordered only by Cindy and Denis.**
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION

What did each person order?

	Soup	Main dish	Drink
Cindy		Chicken	Coke
Denis			Coke
Eric			
Frank			
Gloria		Salad	Orange Juice

Cindy & Denis ordered Coke.

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- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION
What did each person order?

Eric and Frank ordered the same soup. Label it X.

Eric ordered pasta.

	Soup	Main dish	Drink
Cindy		Chicken	Coke
Denis			Coke
Eric	X	Pasta	
Frank	X		
Gloria		Salad	Orange Juice

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- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION

What did each person order?

We only know Gloria ordered OJ so far, but she has a salad.

Eric may have ordered OJ but he ordered Pasta.

	Soup	Main dish	Drink
Cindy		Chicken	Coke
Denis			Coke
Eric	X	Pasta	
Frank	X		
Gloria		Salad	Orange Juice

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QUESTION
What did each person order?

	Soup	Main dish	Drink
Cindy		Chicken	Coke
Denis			Coke
Eric	X	Pasta	
Frank	Tomato	Pizza	Orange Juice
Gloria		Salad	Orange Juice

So this clue must be about Frank!

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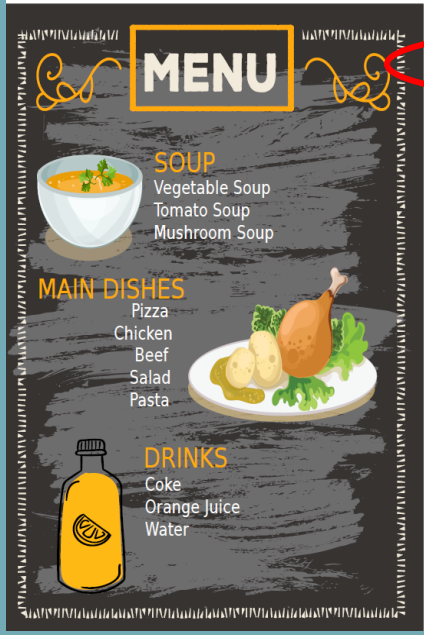
What did each person order?

	Soup	Main dish	Drink
Cindy		Chicken	Coke
Denis			Coke
Eric	Tomato	Pasta	
Frank	Tomato	Pizza	Orange Juice
Gloria		Salad	Orange Juice

Recall from before, Eric and Frank ordered the same soup.

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- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION
What did each person order?

Each item is ordered at least once.

So, Eric must have ordered water.

	Soup	Main dish	Drink
Cindy		Chicken	Coke
Denis			Coke
Eric	Tomato	Pasta	Water
Frank	Tomato	Pizza	Orange Juice
Gloria		Salad	Orange Juice

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- Gloria ordered orange juice and salad.
- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION
What did each person order?

Each item is ordered at least once.

So, Denis must have ordered beef.

	Soup	Main dish	Drink
Cindy		Chicken	Coke
Denis		Beef	Coke
Eric	Tomato	Pasta	Water
Frank	Tomato	Pizza	Orange Juice
Gloria		Salad	Orange Juice

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- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION

What did each person order?

Cindy and Denis must have ordered vegetable soup.

	Soup	Main dish	Drink
Cindy	Vegetable	Chicken	Coke
Denis	Vegetable	Beef	Coke
Eric	Tomato	Pasta	Water
Frank	Tomato	Pizza	Orange Juice
Gloria		Salad	Orange Juice

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- Gloria ordered orange juice and salad.
- Coke was ordered only by Cindy and Denis.
- One person who ordered tomato soup also selected pizza and orange juice.
- Cindy ordered chicken as her main dish.

QUESTION
What did each person order?

Every item is ordered at least once.

So, Gloria must have ordered mushroom soup.

	Soup	Main dish	Drink
Cindy	Vegetable	Chicken	Coke
Denis	Vegetable	Beef	Coke
Eric	Tomato	Pasta	Water
Frank	Tomato	Pizza	Orange Juice
Gloria	Mushroom	Salad	Orange Juice

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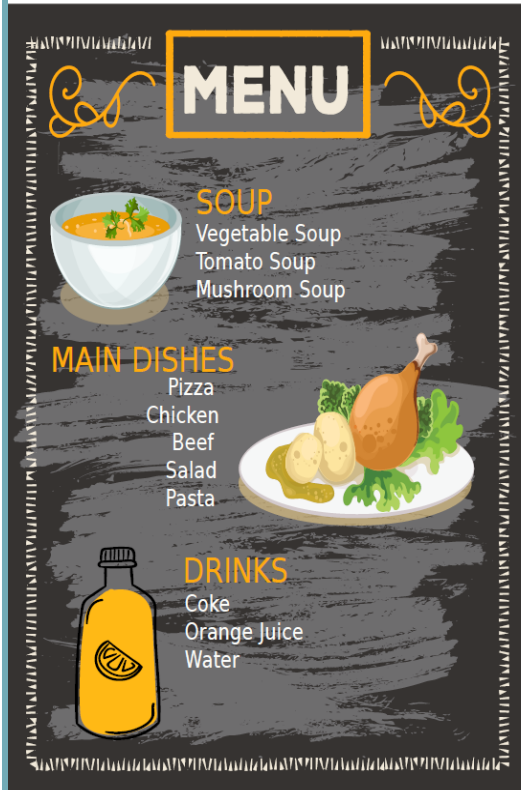
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Denis	Vegetable	Beef	Coke
Eric	Tomato	Pasta	Water
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Gloria	Mushroom	Salad	Orange Juice



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QUESTION

What did each person order?

This task is an example of using the CT topic of **logical reasoning**.

From the initial information given about the menu and details about who ordered what, we were able to logically deduce what everyone ordered.

Questions / comments / discussion

See our website for more computational thinking tasks:

<https://pact.cs.nuim.ie>

Email: pact@mu.ie

To sign up for the Bebras Challenge
(taking place 7-25th November 2022):

<https://bebras.techweek.ie>