Algorithmic Thinking for Migrants Teachers Education

2021-1-EL01-KA210-ADU-000035033

Handout #2: Algorithmic Thinking

Exercise 1

Someone has a sheep, a wolf and a cage of grass on one side of a river and wants to cross it to the opposite bank using a boat. However, the boat is small and can carry, in addition to himself, another of the animals or the cage. However, the wolf should not be left with the sheep and the sheep with the grass. Can you give instructions to the boatman on how to transport them?

Problem analysis:

Data: 1 sheep, 1 wolf, 1 cage of grass, 1 boat of 2 sheets, 2 river edges

Restrictions: the wolf cannot stay with the sheep and the sheep can not stay with the cage of grass

Requested: Let the wolf, the sheep and the cage with the grass pass on the opposite bank.

EXERCISE 2

A recipe database stores the recipes in Table 2.9.

Users can search for recipes by entering search terms, which the database matches to tags and cooking times. Consider the following search terms and decide which recipes will be returned:

A. cooking time less than 20 minutes and not vegetarian;

B. includes chicken or turkey but not garlic;

C. doesn't include nuts.

Table 2.9 Recipes in the database

Name	Tags	Cooking time
Broiled chicken salad	Chicken, lettuce, gorgonzola cheese, lemon juice	15 mins
Holiday turkey	Turkey, rice, onion, walnuts, garlic	60 mins
Three-spice chicken	Chicken, ginger, cinnamon, garlic, green beans	30 mins
Lentil salad	Lentils, onion, peppers, walnuts, lettuce	20 mins
Garlic dip	Garlic, lemon juice, chickpeas, chicken broth	5 mins

ΙΔΡΥΜΑ ΚΡΑΤΙΚΩΝ ΥΠΟΤΡΟΦΙΩΝ IKY
Erasmus+ Ανοίγει δρόμους, αλλάζει ζωές.