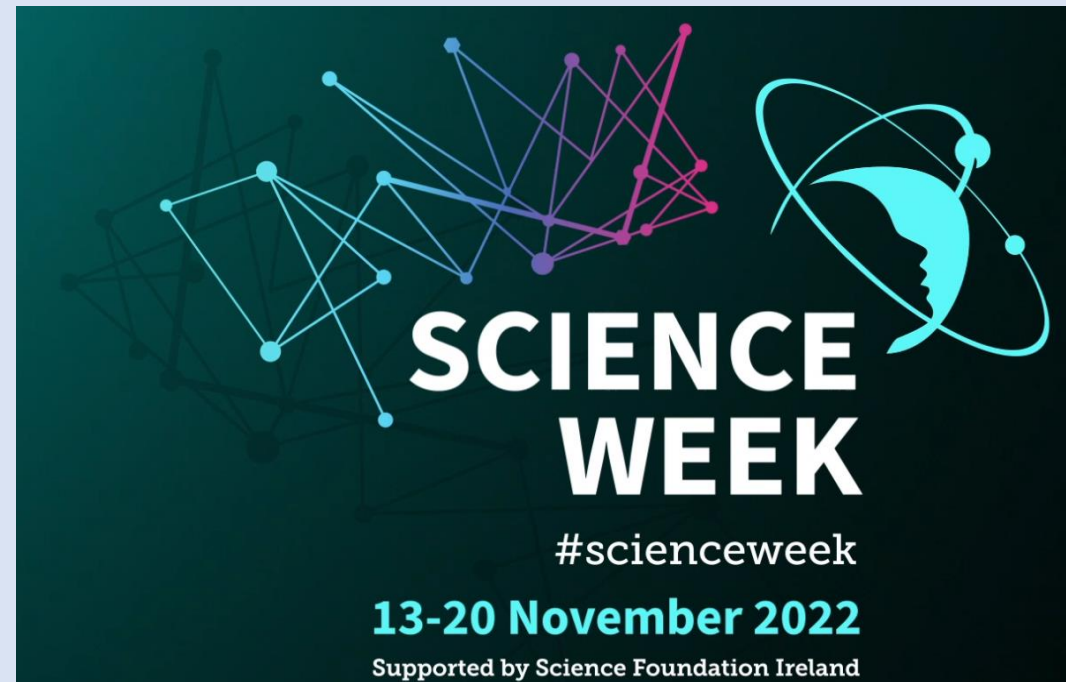




Computational Thinking Tasks for Science Week 2022



PACT team
Department of Computer Science
Maynooth University, Ireland



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



Locked chests

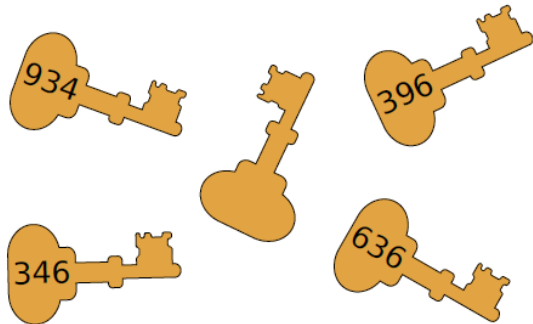


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Today, all the keys fell on the floor. One of the labels got lost.



QUESTION:

What was written on the lost label?

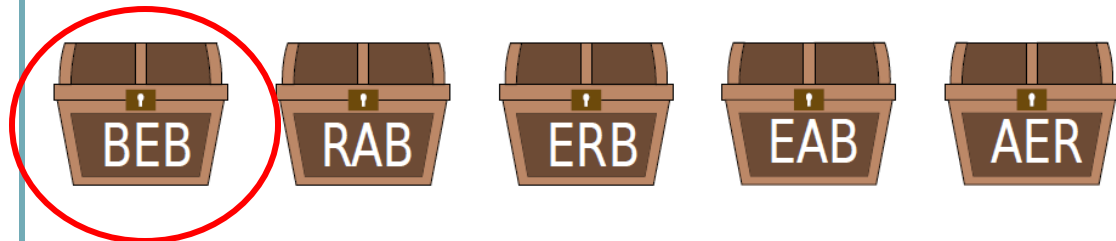
- A. 496
- B. 639
- C. 436
- D. 649



Locked chests

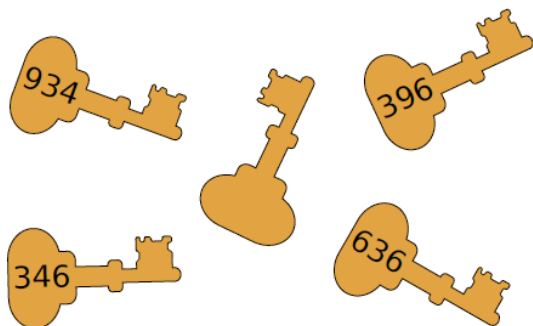


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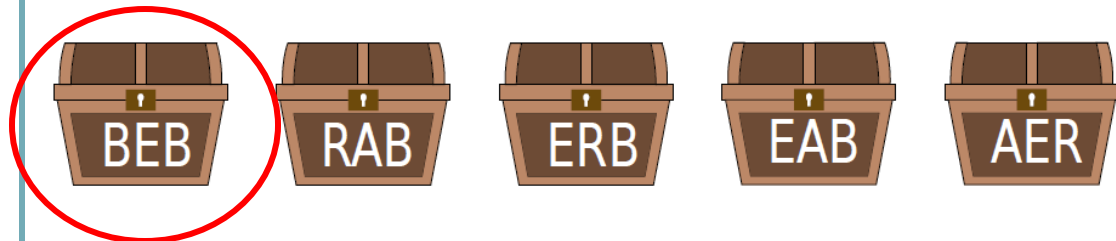
BEB is the only chest with first and last letter the same.



Locked chests

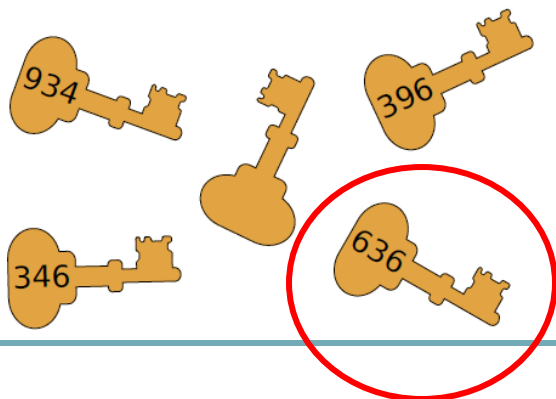


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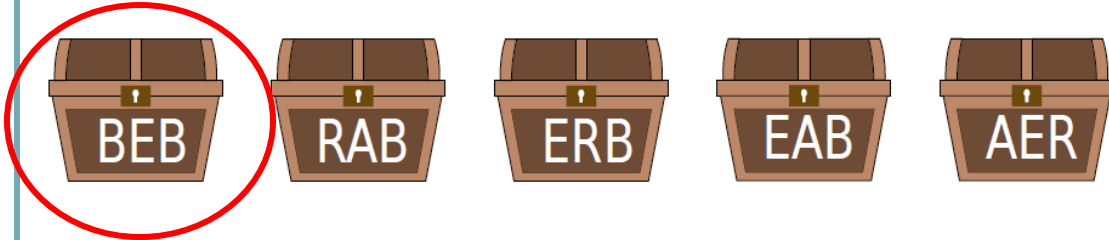
636 is the only key with first and last number the same.



Locked chests

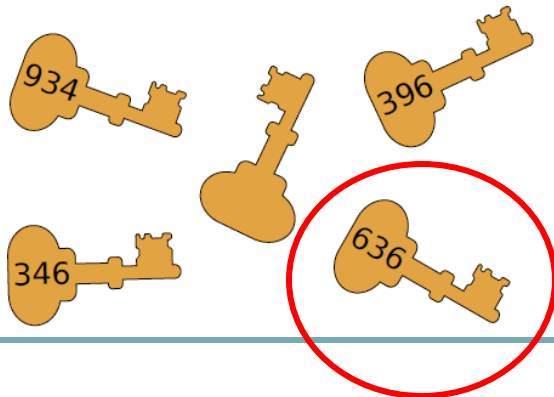


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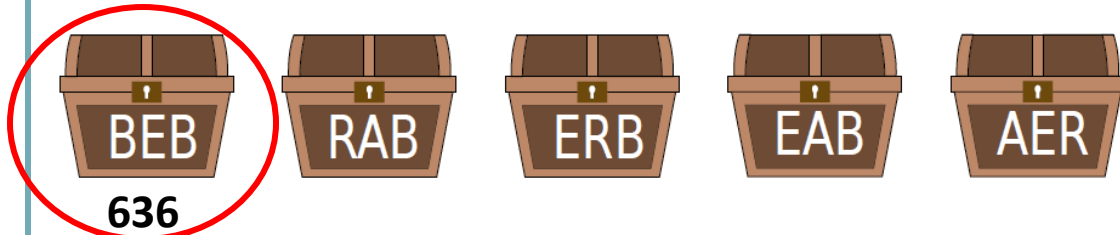
So $B = 6$ & $E = 3$



Locked chests

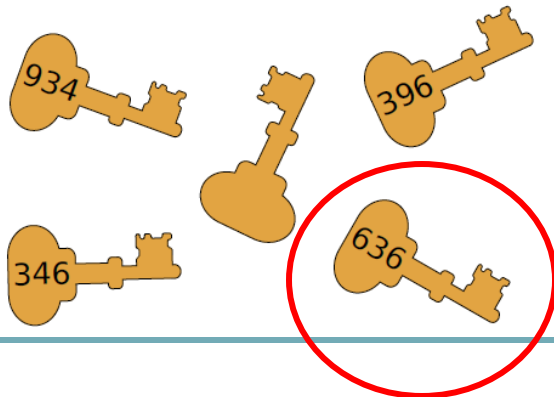


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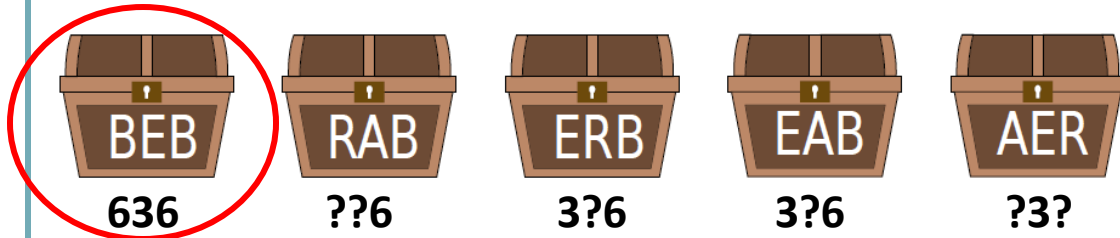
So $B = 6$ & $E = 3$



Locked chests

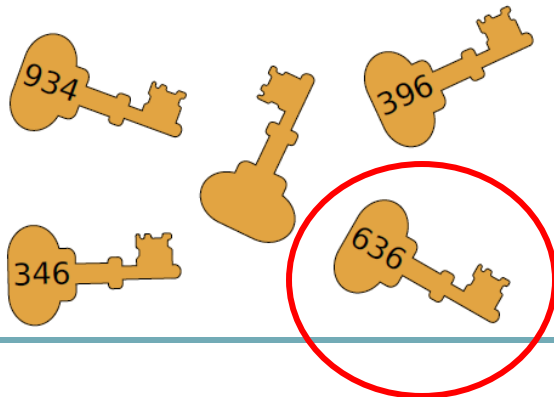


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Filling in the other instances of that letter.



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636



??6



3?6



3?6



?3?

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AER is the only chest that doesn't end with a B.

934 is the only label that doesn't end in a 6.



Locked chests



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636



??6



3?6



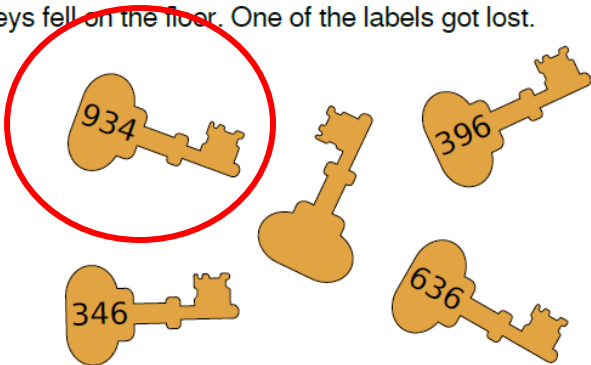
3?6



934

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So $R = 4$ and $A = 9$.



Locked chests

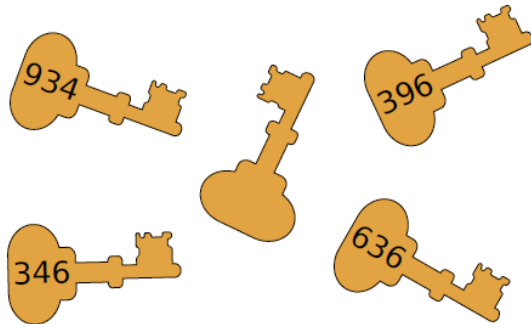


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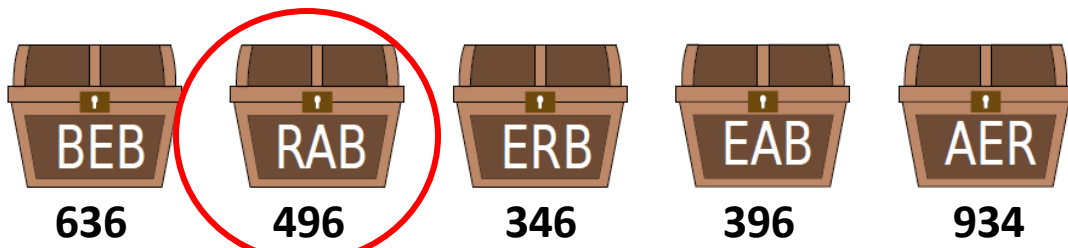
Filling in the other instances of that letter.



Locked chests

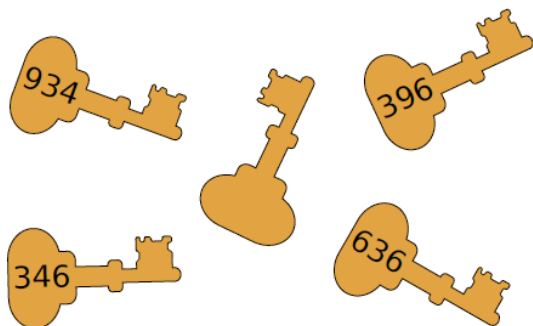


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The only chest that doesn't match a label now is 496 - RAB



Locked chests



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636



496



346



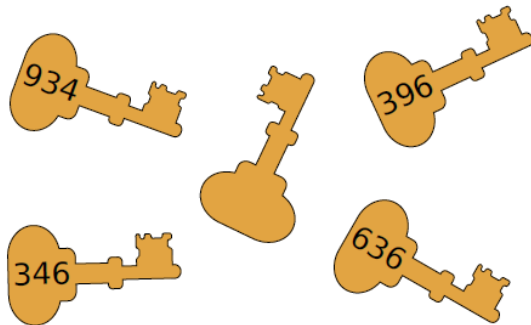
396



934

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

Jacques used a unique number to represent each letter.

To solve the task we had to figure out which letter was paired with which number.

The task is also an example of using **pattern recognition**. We solved it by noticing patterns between the letters and the numbers.

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>