

The gold is located in Treasure Chest B, and only Statement C is TRUE.

Abstraction

We want to develop an algorithm that will give us a general solution this problem.

Some of the key components of the problem are :

- There are 4 Treasure Chests, and only 1 chest can contain the gold at any 1 time.
- When the gold is placed in a chest, the statements attached to all chests are consequently True or False.
- .

Writing your Thinking

Take 2 minutes to think about how you tackled this problem.

- **Did you use pen and paper to help visualise possible solutions?**
- Did you draw a diagram to represent the problem?
- **Did you imagine scenarios : what would happen if you chose a particular chest in which to put the gold?**
- Did you use Trial and Error to investigate possible solutions?
- **Did you verify your solution?**

Using Think-Pair-Share-Square (TPSS), go through how you and your partner were thinking about how to solve the problem.

Write an algorithm to solve this problem in a computational way.

Try to write a version of your algorithm in pseudo-code.

Pseudo-Code

Set up the four, initially empty, Treasure Chests with their statements, names, &c. (use an object/class)

Create a list of the 4 Treasure Chests (TC)

For each TC in the list {

 Place the gold in that TC only

For each TC in the list {

 Decide if the statement is True or False

If there are 1 true & 3 false statements **then**

 Solution is found; Let the user know;

 Increment the number of solutions found.

 }

}

Print the number of solutions found. (optional)

Key Note

The program you write will not understand the string “The gold is in here” or “The gold is not in here”.

It will need to be interpreted by you. One way to think about it is to use a list of places the gold would have to be if the statement is true.

For example, Chest A states “The Gold is in Here”. For this to be true, the list of possible places is just A.

Chest C states “The gold is not in here.” For this to be true, the list of possible places is A, B, D.