Logistics Case Picking

Design a realistic solution to pick a box from a nicely arranged mountain of boxes and take it to its corresponding container. Each container has a different visual marker (bar-code, QR code, etc.), and each box has the same marker as the container it should go to. The distance between the mountain of boxes and the containers is 10m. The boxes weight between 10 and 15kg and their size between 30x30x30 cm and 50x50x50cm, but they are not necessarily equilateral. The mountain of boxes is not higher than 1.5m.

-Describe your solution to tackle this task.
-Detail as much as possible the sequence of actions and processes to achieve the goal, as wells as the involved components. Also, describe the technologies you think would be required to achieve each process (this includes any existing libraries or libraries that would need to be developed)
-Choose one of the components and write a simple code for it in C++ that includes concepts such as appropriate error handling, self-explaining code with minimal commenting, no memory leaks or dead
threads, shutdown signal handling. Also, clearly state any assumptions, and try using modern programming tools such as smart pointers, lambda syntax, etc.

Deliverables:

1. Description of the solution and summary of its workflow
   (submit no later than 2 days after starting the assignment; no more than two pages)
2. Details of the components and plan for the implementation of the solution
   (submit no later than 4 days after starting the assignment; no more than two pages)
3. Source code of one of the components
   (submit no later than one week after assignment start)

NOTE:
We don't expect you to finish everything, but want to validate your approach, research, and execution. Also, we expect you to spend no more than 3 hours on each deliverable. Have fun!