

CLAIMS

1. A method, performed by an electronic device, for assigning items into one or more containers, the method comprising:
 - obtaining (S102) a plurality of attributes associated with a corresponding item;
 - 5 - obtaining (S104) a set of container parameters associated with a corresponding container;
 - obtaining (S106) one or more constraints, wherein the one or more constraints limit assigning items in a same container; and
 - determining (S108) an assignment of the items to the one or more containers, based on
10 the attributes, the set of container parameters and the one or more constraints; and
 - outputting (S110), based on the assignment, an assignment plan of the items into the one or more containers.
- 15 2. The method according to claim 1, wherein the one or more constraints are associated with the plurality of attributes.
3. The method according to any of the previous claims, wherein determining (S108) the assignment of the items into the one or more containers comprises:
 - determining (S108A) whether attributes associated with a first item violates the one or
20 more constraints,
 - upon determining that the attributes associated with the first item do not violate the one or more constraints, assigning (S108B) the first item to a first container.
- 25 4. The method according to any of the previous claims, wherein determining (S108) the assignment of the items into the one or more containers comprises:
 - optimizing (S108C) a set of performance parameters indicative of shipping performance based on the attributes, the set of container parameters and the constraints.

5. The method according to claim 4, wherein optimizing (S108C) the set of performance parameters comprises applying (S108CA), to an item set and a container set, an assignment scheme with a plurality of counters indicative of the corresponding constraints placed on the attributes of the corresponding items.

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6. The method according to any of the previous claims, wherein the set of performance parameters comprises one or more performance parameters indicative of cost associated with the one or more containers, and/or a capacity associated with the one or more containers.

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7. The method according to any of the previous claims, wherein the attributes comprise one or more of: a shipping order, a purchase order, a date of arrival at origin warehouse, an origin port, a destination port, a plant code, an expected time of arrival, a cargo type, a stoke keeping unit, a vendor attribute, a volume of the cargo, and a weight of the cargo.

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8. The method according to any of claims 1-7, wherein the set of container parameters comprises one or more of: a volume of the container, a residual capacity of the container, and a maximum capacity of the container.

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9. The method according to any of the previous claims, wherein determining (S108) the assignment of the items into the one or more containers comprises:

- determining (S108D), for each item, and based on the attributes associated with the item, whether the item fits into a residual capacity of a container of the one or more containers, without violating the constraints.

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10. The method according to claim 9, wherein determining (S108) the assignment of the items into the one or more containers comprises:

- when it is determined that the item fits into the residual capacity of the container without violating the constraints, assigning (S108E) the item to the container.

11. The method according to any of claims 9-10, wherein determining (S108) the assignment of the items into the one or more containers comprises:

- 5 - when it is not determined that the item fits into the residual capacity of the container without violating the constraints, forgoing (S108F) the assignment of the item to the container.

12. The method according to any of the previous claims, wherein determining (S108) the assignment of the items to the one or more containers comprises:

- 10 - determining (S108G) a number of conflicts in a container; and
- determining (S108H) whether the number of determined conflicts satisfy a criterion.

13. The method according to any of claims 3-12, wherein determining (S108) the assignment of the items to the one or more containers comprises:

- 15 - upon determining that attributes associated with the first item violate the one or more constraints, assigning (S108I) the first item to a container other than the first container.

14. An electronic device comprising a memory circuitry, a processor circuitry, and an interface, wherein the electronic device is configured to perform any of the methods
20 according to any of claims 1-13.

- 25 15. A computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by an electronic device with a display and a touch-sensitive surface cause the electronic device to perform any of the methods of any of claims 1-13.