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CS5004

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Automated House Factory

In this assignment, I worked with interfaces, simple inheritance, delegation, composition, expanded enum functionality, and custom Exceptions for the first time in a multi-class program.

Extensions

- Expanded the ResourceType enum to include functionality that connects each type to its relative weight constants, a human readable string, and yield recipes.
- Extended Const to include information about the types of resources breaking a listed block will yield. This permits future additions of Blocks that drop multiple resources.
- Refactored Block by eliminating its children. Each Block object is differentiated from the other by its ResourceType, which now contains information about the block's weight. A flag "isBroken" is added to this Class so that Resources cannot be extracted from a Block more than once. breakBlock now yields a ArrayLists of Resource objects to cover the new functionality of blocks producing multiple Resources (although in the current implementation there is only one Resource in these return ArrayLists).
- ElementalFactoryDelegate now handles all of the behavior of elemental Factories that generate blocks without crafting recipes. takeResource takes in ArrayList of Resources and extracts storedWeight when it matches the type of the Factory. This modifies the ArrayList in place so that it can be passed to other Factories continuously without the need for excessive exception handling. This delegate is used in WoodBlockFactory and StoneBlockFactory.
- takeResource has been delegated to Resource, as Resource exchanges occur directly between Resource instances. This is currently only within Factory instances, but future additions might call for creative interactions between Resource objects.
- HouseFactory overloads the takeResource method so that it can take Blocks or ArrayLists of Resources. This was because instanceof didn't play nice with ArrayList. I may modify the Factory interface so that all Factories can either take lists of resources or generic Blocks, but currently this is only done on the HouseFactory class.

I got carried away refactoring the code this evening and went a few minutes past the due date of 10/16/2024 11:59PM. I am now working on recording a code walkthrough as of 12:45AM.

I am requesting an extension on the code walkthrough section of this lab. I can do it tomorrow morning.