

# Mappings

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- It's a data structure that holds **key->value** pairs. Its similar to Python Dictionaries, JS objects or Java HashMaps;
- All keys **must have the same type** and all values must have the same type
- The keys can not be of types: mapping, dynamic array, enum or struct. The values can be any type including mapping;
- Mapping **is always saved in storage**, its' a state variable. Mappings declared inside functions are also saved in storage;
- The mappings advantage is that **lookup time is constant no matter of size**. Arrays have linear search time;
- A **mapping is not iterable**, we can't iterate through a mapping using a for loop;
- **Keys are not saved into the mapping** (its hash table data structure). To get a value from the mapping we provide a key, the key gets passed through a hashing function, that outputs a predetermined index that returns the corresponding value from the mapping;
- If we want the value of an **unexisting key** we get a **default value**;