

- Read and write code using **1D** and **2D lists**
- Use **list methods** to change lists without variable assignment
- Recognize whether two values have the same **reference** in **memory**
- Recognize the difference between **mutable** vs. **immutable** data types
- Recognize the difference between **destructive** vs. **non-destructive** functions/operations
- Use **aliasing** to write functions that destructively change lists
- Define and recognize **base cases** and **recursive cases** in recursive code
- Read and write basic **recursive code**
- Trace over recursive functions that use **multiple recursive calls** with Towers of Hanoi
- Recognize **linear search** on lists and in recursive contexts
- Use **binary search** when reading and writing code to search for items in sorted lists
- Compare the **function families** that characterize different functions
- Identify the **worst case** and **best case** inputs of functions
- Calculate a specific function's efficiency using **Big-O notation**
- Recognize the general algorithm and trace code for three algorithms: **selection sort**, **insertion sort**, and **merge sort**
- Compute the **Big-O runtimes** of selection sort, insertion sort, and merge sort