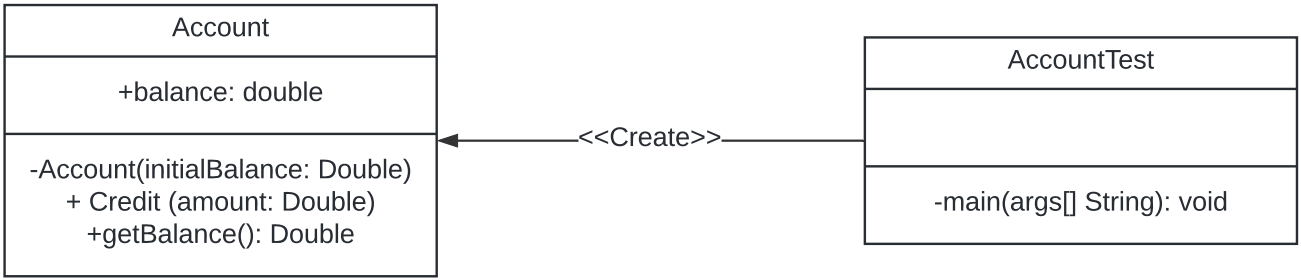
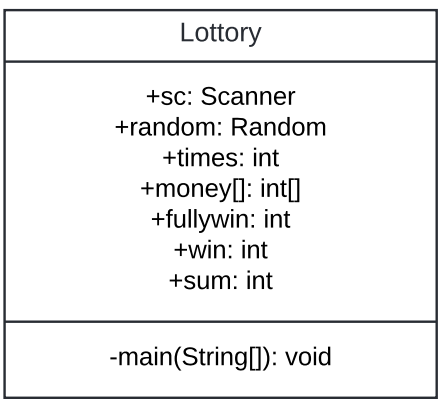
**Problem 1:**




**Problem 2:**