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Date: 07/27/2025

HASH TABLE PEDUCODE

1. Load & Validate File

open "ABCU\_CourseFile.txt"

allCourseNums ← empty set

records ← empty list

for each line parts ← split by "," and trim

if parts.length < 2

error "Each line must have at least course number and title"

stop

courseNum ← parts[0]

title ← parts[1]

prereqs ← parts[2 … end]

add courseNum to allCourseNums

add {courseNum, title, prereqs} to records

end for close file

// cross-check prerequisites for each r in records for each p in r.prereqs if p not in allCourseNums error "Prerequisite " + p + " for " + r.courseNum + " is missing" stop end for

1. Store Courses in Hash Table

hashTable ← array of 30 empty lists

for each r in records create course object .number = r.courseNum .title = r.title .prereqs = r.prereqs

Copy

index ← hash(r.courseNum) mod 30

append course to hashTable[index]

end for

1. Print All Courses

for each bucket in hashTable for each course in bucket print course.number + ": " + course.title if course.prereqs is empty print " Prerequisites: None" else print " Prerequisites: " + join(course.prereqs, ", ") end for