Module: R4: Computer Architecture
Section: Caches **Task:** Loop Ordering

Task 3

Loop Ordering

- **Action Item: Think about what the strides are for the nested loops in other five implementations.**

    1. ***Loop Order 1: ijk***
       A = n;
       B = 1;
       C = 0;

    2. ***Loop Order 2: ikj***
       A = 0;
       B = n;
       C = n;

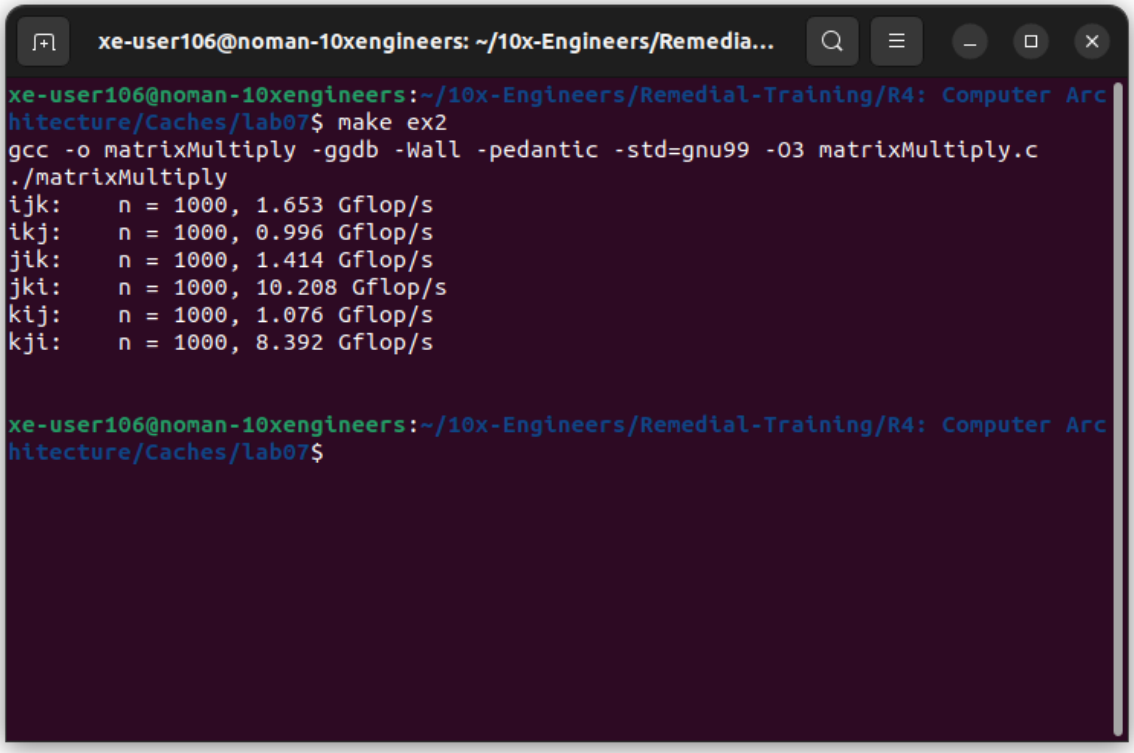
    3. ***Loop Order 3: jik***
       A = n;
       B = 1;
       C = 0;

    4. ***Loop Order 4: jki***
       A = 1;
       B = 0;
       C = 1;

    5. ***Loop Order 5: kij***
       A = 0;
       B = n;
       C = n;

    6. ***Loop Order 1: ijk***
       A = 1;
       B = 0;
       C = 1;

- **Terminal Output:**



- **Questions:**
  1. ***Which 2 orderings perform best for these 1000-by-1000 matrices?***
     The best 2 orderings are:
     i. **"jki"** (Loop Order 4)
     ii. **"kji"** (Loop Order 6)

  2. ***Which 2 orderings perform the worst?***
     The worst 2 orderings are:
     iii. **"ikj"** (Loop Order 2)
     iv. **"kij"** (Loop Order 5)