

**ECE571: Advanced Microprocessor Design – Homework 10**  
Fall 2022

**Due: Tuesday 29 November 2022, 2:00pm**

Create a document that contains the answers to the questions below. A .pdf or .txt file is preferred but I can accept MS Office or Libreoffice format if necessary.

1. Read the articles (Again I apologize for the obnoxious ads while reading):

**Intel Architecture Day 2021: Alder Lake, Golden Cove, and Gracemont Detailed**

by Dr. Ian Cutress and Andrei Frumusanu

<https://www.anandtech.com/print/16881/a-deep-dive-into-intels-alder-lake-microarchitectures>

Optionally also track down and read the academic paper: **Intel Alder Lake CPU architectures** by Rotem et al. IEEE Micro, May-June 2022, p13-19, vol42.

Answer the following questions:

- (a) What is Hybrid Technology?
- (b) What is the purpose of the Intel Thread Director?
- (c) What is one change added in Golden Cove architecture?

2. Also read the website article:

**Apple Announces M2 SoC: Apple Silicon for Macs Updated for 2022** by Ryan Smith

<https://www.anandtech.com/print/17431/apple-announces-m2-soc-apple-silicon-updated-for-2022>

Answer the following questions:

- (a) What process is the M2 processor made in?
- (b) Is there anything unusual about the RAM implementation found on the M2 chips?

3. **Submitting your work.**

- Create the document containing the answers to the questions asked.
- Please make sure your name appears in the document.
- e-mail the file to me by the homework deadline.