ECE571: Advanced Microprocessor Design – Homework 10
Fall 2020

Due: Friday 20 November 2020, 12:00pm

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 website article:

   Apple Announces The Apple Silicon M1: Ditching x86 – What to Expect, Based on A14 by Andrei Frumusanu (note that there are 5 pages to this article).
   `https://www.anandtech.com/show/16226/apple-silicon-m1-a14-deep-dive`

   I apologize for the obnoxious ads while reading. Pressing "print this article" and reading that might help make it a bit more readable.

2. Answer the following questions:

   (a) Why might Apple have increased the size of the L2 TLB?

   (b) How big is the L1 instruction cache?

   (c) What process technology (how many nm) is the chip fabbed in?

   (d) How much has Apple increased the speed of their chips since 2015?

3. Also find and read the articles:

   The Intel Comet Lake Core i9-10900K, i7-10700K, i5-10600K CPU Review: Skylake We Go Again by Dr. Ian Cutress (note there are a lot of pages to this article, you only have to read the ones that aren't benchmarks).
   `https://www.anandtech.com/show/15785/the-intel-comet-lake-review-skylake-we-go-again`

   Intel's 11th Gen Core Rocket Lake Detailed: Ice Lake Core with Xe Graphics by Dr. Ian Cutress (note there is only 1 page to this article).
   `https://www.anandtech.com/show/16205/intels-11th-gen-core-rocket-lake-detailed-ice-lake-core-with-xe-graphics`

4. Answer the following questions:

   (a) What is die thinning?

   (b) How does intel make an 8-core chip?

5. **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.