## Introduction

The purpose of this assignment is to define a technical term used in my academic field of computer science. For this assignment, I wrote a parenthetical definition, a sentence definition, and an expanded definition for the word cache. In computer science, it is often very useful to be able to explain technical terms to non-technical people. This assignment gives me practice teaching non-technical people about a complex term in a way that is understandable to them. In my expanded definition, I used bold text to tell the reader when I am an expansion strategy.

1) Term Chosen:

Cache

2) Situation:

I am pitching to a group of scientists with little computer science background on why they should purchase my company's high-speed caches for their machines. I start by explaining what a cache is in the first place.

3) Parenthetical Definition:

The program makes extensive use of caches (a small unit of memory that data can quickly be extracted from).

## 4) Sentence Definition:

A cache is a small piece of memory which normally holds data for a relatively short period of time. Data can be added to or removed from caches far more quickly than normal computer memory. Caches normally are filled with frequently or recently used data which make for faster program speed.

## 5) Expanded Definition:

A cache is a small piece of memory that briefly hold data while a program runs. Caches hold small pieces of data such as letters and integers, not large files like songs, pictures, or other large data structures (**by negation**). Main memory, in contrast, holds larger units of data that might be needed by a program on a less frequent basis (**compare and contrast**).

The central processing unit (CPU) is the place where math and other logical operations are performed by the program. When a piece of information needed by the CPU is not contained in the cache, the cache must retrieve that piece of information from main memory **(analysis of parts)**. Reading from main memory is signicantly slower than reading from a cache (Handy, 1998). For this reason, it is desirable for caches to hold on to information that the program can expect to need, such as frequently or recently used data (Mookerjee & Tan, 2002). This general principle is why caches make programs run faster **(operating principle)**.



Figure 1: Simplified configuration of a cache extracting data from memory.

source: Cache (computing), n.d

## Citations

Cache (computing). n.d. *In Wikipedia*. Retrieved January 30, 2017, from https://en.wikipedia.org/wiki/Cache (computing)

Handy, J. (1998). The cache memory book. Morgan Kaufmann.

Mookerjee, V. S., & Tan, Y. (2002). Analysis of a least recently used cache management policy for Web browsers. *Operations Research*, *50*(2), 345-357.