Ref: 0001 Analysis

Source: "Great Principles of Computing", 25/04/2016

Table 1.1
Great Principles of Computing

Category	Focus	Examples	Focal Chapters
Communication	Reliably moving information between locations	Minimal-length codes, error-correcting codes, compression of files, cryptography.	3. Information 11. Networking
Computation	What can and cannot be computed	Classifying complexity of problems in terms of the number of computational steps to achieve a solution. Characterizing problems that have no algorithmic solution.	4. Machines 5. Programming 6. Computation
Recollection	Representing, storing, and retrieving information from media	All storage systems are hierarchical. No storage system can offer equal access time to all objects. The locality principle: all computations favor subsets of their data objects for extended intervals.	7. Memory 11. Networking
Coordination	Effectively using many autonomous computing agents	Protocols that lead the parties to have the same knowledge, eliminate conditions that cause indeterminate results, or synchronize. Choice uncertainty principle.	2. Domains 3. Parallelism 9. Queueing
Evaluation	Measuring whether systems produce intended computations	Predicting system throughput and response time with queueing network models, designing experiments to test algorithms and systems.	9. Queueing 10. Design
Design	Structuring software systems for reliability and dependability	Complex systems can be decomposed into interacting modules and virtual machines. Modules can be stratified corresponding to their time scales of events that manipulate objects.	10. Design

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I read this book before the controlled assessment, therefore when posed with the task of explaining why I picked the computational approach to the task- I quickly found out that the task was near impossible without trying to explain what to the computational approach was.

As this was my reasons for choosing the computational approach, I went to explain what the computational method was using my own words. Halfway through the description it became clear I was just stating that you are applying the principles of computing to the given task.

This information will also be useful in the design and implementation phases of the project, as this is an overview of the fundamental aspects of computing, it would make sense that as I have chosen to use the computation method, that each step I take in designing and implementing this project would follow the principals.

Although I do count this information as my own knowledge at this point- I could list them without the aid of this book. I am well aware that I found out about these principals from this book. Therefore I decided that as I was listing each one I could probably count reading the book as prior research and should then credit it. I believe that over the course of this project I will have to continue to credit this book for some of my background knowledge.