DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
THE UNIVERSITY OF TEXAS AT ARLINGTON

ARCHITECTURAL DESIGN SPECIFICATION
CSE 4316: SENIOR DESIGN I
SUMMER 2017

TEAM C
LANGUAGE PRONOUNCIATION ASSISTING APP

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REVISION HISTORY

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INTRODUCTION

This section describes the purpose, use and intended user audience for the Language Pronunciation App. The Language Pronunciation App is an application that helps users improve their pronunciation of phonetically difficult words.

Users will be able to visualize their distance to the "perfect" phonetic pronunciation of a word.

SYSTEM OVERVIEW

In order to minimize the burden of processing on the individual clients that utilize our system the application takes a lightweight-client approach to the traditional client-server application.
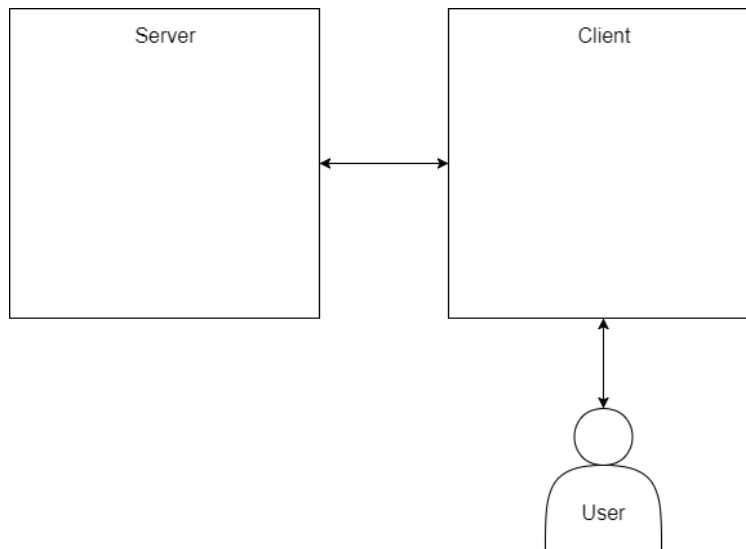
Figure 1: A high-level data-flow diagram for our application

CLIENT LAYER

The client will function as the HMI between our system and the user. It consists of a UI, and methods by which it may communicate with the server.

SERVER LAYER

The server will function as the work-horse for the application. It's purpose is to host the visualization function which will map an input of word, audio to a distance metric in the form of x, y co-ordinates.

SUBSYSTEM DEFINITIONS & DATA FLOW

This section breaks down your layer abstraction to another level of detail. Here you graphically represent the logical subsytems that compose each layer and show the interactions/interfaces between those subsystems. A subsystem can be thought of as a programming unit that implements one of the major functions of the layer. It, therefore, has data elements that serve as source/sinks for other subsystems. The logical data elements that flow between subsystems need to be explicitly defined at this point, beginning with a data flow-like diagram based on the block diagram.
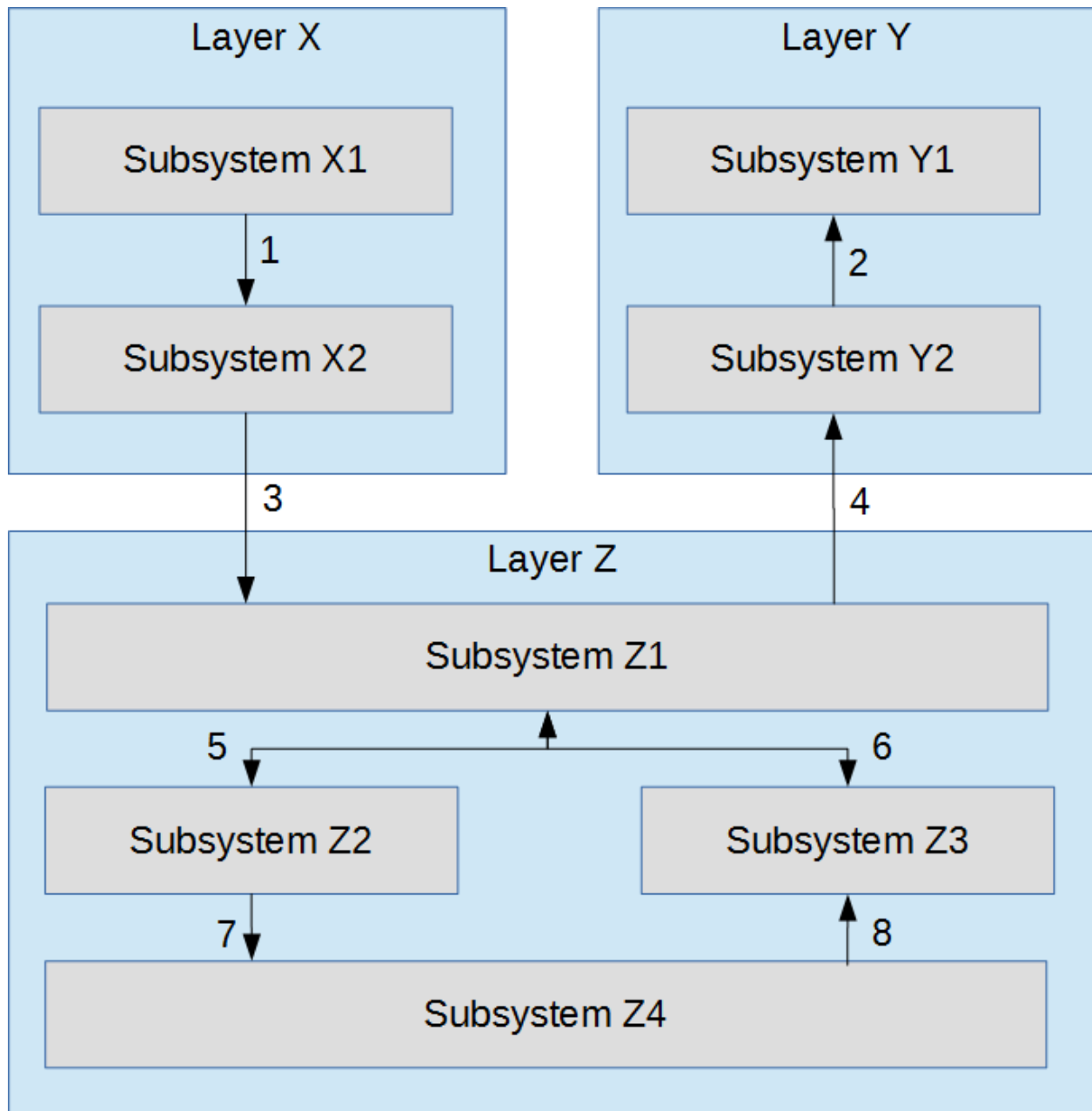

Figure 2: A simple data flow diagram

X Layer Subsystems

In this section, the layer is described in some detail in terms of its specific subsystems. Describe each of the layers and its subsystems in a separate chapter/major subsection of this document. The content of each subsystem description should be similar. Include in this section any special considerations and/or trade-offs considered for the approach you have chosen.

Subsystem 1

This section should be a general description of a particular subsystem for the given layer. For most subsystems, an extract of the architectural block diagram with data flows is useful. This should consist of the subsystem being described and those subsystems with which it communicates.
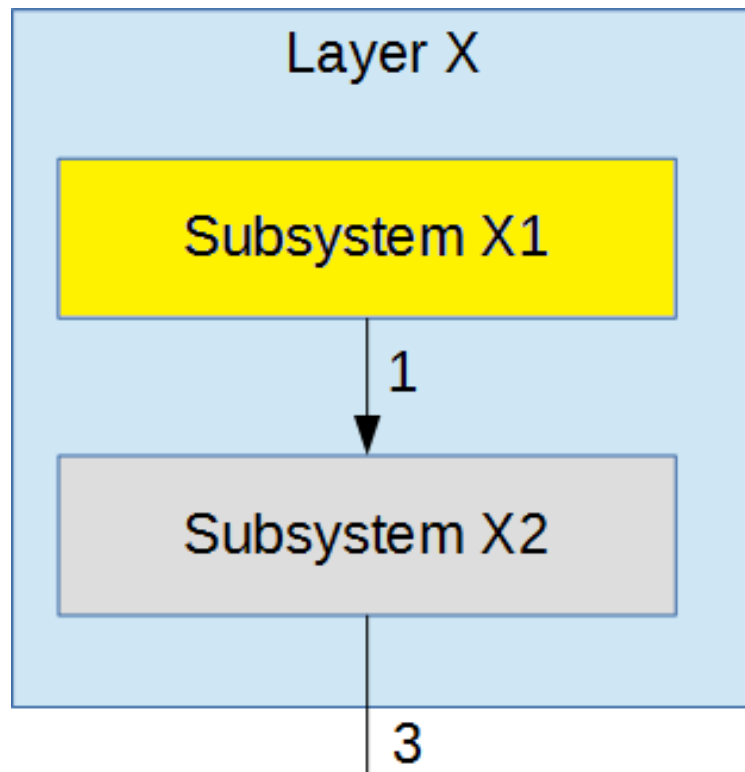

Figure 3: Example subsystem description diagram

Assumptions

Any assumptions made in the definition of the subsystem should be listed and described. Pay particular attention to assumptions concerning interfaces and interactions with other layers.

Responsibilities

Each of the responsibilities/features/functions/services of the subsystem as identified in the architectural summary must be expanded to more detailed responsibilities. These responsibilities form the basis for the identification of the finer-grained responsibilities of the layer's internal subsystems. Clearly describe what each subsystem does.

Subsystem Interfaces

Each of the inputs and outputs for the subsystem are defined here. Create a table with an entry for each labelled interface that connects to this subsystem. For each entry, describe any incoming and outgoing

data elements will pass through this interface.

Table 2: Subsystem interfaces

ID	Description	Inputs	Outputs
#xx	Description of the interface/bus	input 1 input 2	output 1
#xx	Description of the interface/bus	N/A	output 1

SUBSYSTEM 2

Repeat for each subsystem

SUBSYSTEM 3

Repeat for each subsystem

Y Layer Subsystems

In this section, the layer is described in some detail in terms of its specific subsystems. Describe each of the layers and its subsystems in a separate chapter/major subsection of this document. The content of each subsystem description should be similar. Include in this section any special considerations and/or trade-offs considered for the approach you have chosen.

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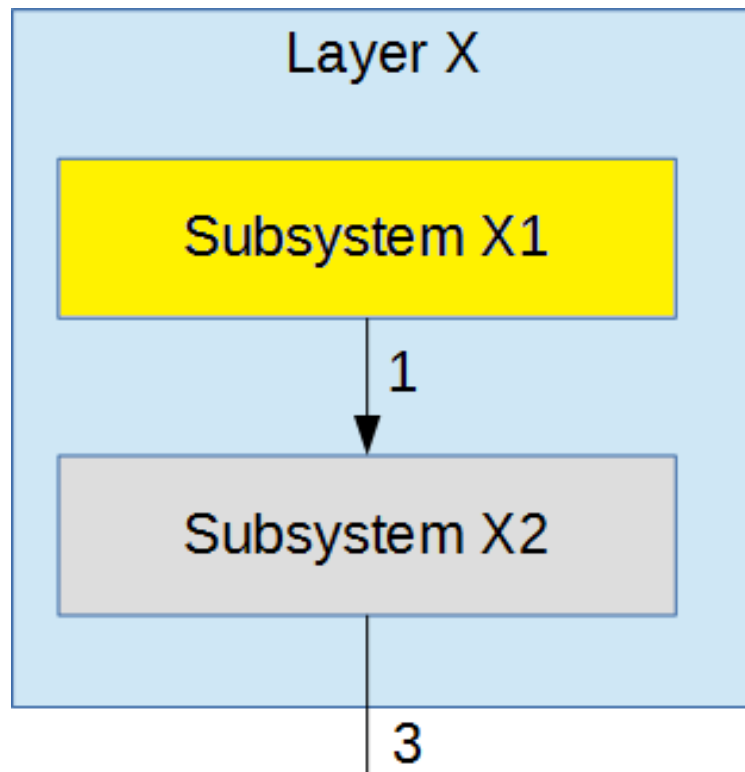
Figure 4: Example subsystem description diagram

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