**TA Processing System (TAPS)**

# TAPS Design

Prepared by Moti Begna

University of Minnesota

Computer Science Department

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1. **INTRODUCTION .................................................................................................................................................................. 1**

1.1. SYSTEM OVERVIEW ...............................................................................................................................................................1

1.2. DESIGN OBJECTIVE ............................................................................................................................................................... 1

|  |  |
| --- | --- |
| **2.** | **GLOSSARY ............................................................................................................................................................................ 1** |

1. **DESIGN OVERVIEW ........................................................................................................................................................... 1**
   1. SYSTEM ARCHITECTURE........................................................................................................................................................ 1
   2. SYSTEM INTERFACES............................................................................................................................................................ 2

3.2.1 DATABASE INTERFACE............................................................................................................................................ 2

3.2.2 USER INTERFACE*...*.................................................................................................................................................. 2

* 1. CONSTRAINTS AND ASSUMPTIONS…………………………………………………………………....…………………….. 3

1. **UML DESIGN.......................................................................................................................................................................... 4**

**1.**

**Introduction**

## 1.1. System Overview

## TAPS will be a backend system that will process various user requests submitted by University campus community members such as students, faculty, staff, and administrators. This system is designed to help faculty members organize and handle large amounts of TA recommendations and allow prospective TA’s to enter their course preferences as well as enter their own personal and academic details. TAPS will also allow administrators to assign TAs to courses, sort their preferences based on different attributes, as well as make announcements and status updates to notify TAs, faculty, and payroll. In addition, TAPs will allow payroll managers to view appointments and percentage types, as well as a method for the system itself to utilize third-party software to acquire external data.

## 1.2. Design Objective

The objective of this design document is as follows:

* To provide a method of design for the system to be reliable, usable, and modifiable.
* To provide a method of design to ensure that the system meets performance and security requirements.
* To provide enough information for programmers to implement the system.
* To provide enough detail to formulate and implement test cases for various subsystems before any code is developed.

**2.**

**Glossary**

**BLM:** Business Layer Module, which interacts with the User Interface Layer and the Database. Through this layer, all requests of the system is handled.

**3.**

**Design Overview**

## 3.1. System Architecture

The software will receive a user input from the user, and the BLM will extract pessary data from the database (if necessary), and produce a corresponding response based on what was requested.

User Interface Layer

System Response

User Input

BLM

Request Data

Receive Data

Database

## 3.2. System Interfaces

### 3.2.1. Database Interface

The interface to the Database is utilized to obtain necessary data that must be transported to the BLM. In the current system, the Database contains all TA applications that have been submitted, as well as information regarding those individuals that have been appointed to a TA position. In this way, the Database can be described as two sub-databases: a TA application database, and an Appointed TA database. The BLM utilizes the Database in these manners:

1. When a prospective TA submits an application, the BLM sends the application to the TA application database.
2. When requested by an Administrator, the BLM retrieves all TA applications from the TA application database.
3. When an Administrator assigns a TA, the BLM sends the assignment to the Appointed TA database.
4. When requested by an Administrator, the BLM retrieves all TA applications from the TA application database.

### 3.2.2. User Interface

The user interface is utilized to extract a request from the user in order for the BLM to produce a corresponding response. The BLM determines the credentials of the user and allows a limited range of requests to the system based on those credentials.

## 3.3. Constraints and Assumptions

We make the following assumptions:

* The language used to implement the design allows for the use of all of the defined data types within the UML design.
* The User Interface and Database Interface will be implemented in such a way that communication with the BLM is functional and effective.

Because the TAPS architecture utilizes a layered model, and we have no way of knowing how the UI Layer and Database Layer will be implemented, we must assume that any choices that are made for those interfaces ensures that communication to the BLM is maintained.

**4.**

**UML Design**

