# Clickr Projects & Hours – Developer Guide

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# 1. Introduction

This section specifies the purpose of this document and design goals of Clickr Projects & Hours.

## 1.1. Purpose

This document describes the software architecture and system design of Clickr Projects & Hours, a WordPress site for upper management and employees of Clickr Media to manage their projects and hours clocked.

The intended audience of this document includes the developers and software testers of Clickr Projects & Hours.

## 1.2. Design goals

The development team was tasked to create a project and hours management system to improve billing of clients in the company. At the end of the project's development, it should be ready to be continued by future developers.

As part of the project constraints, the project is hosted on WordPress so project files have to be developed in PHP. Taking this into consideration, the following principles guide the design of Clickr Projects & Hours:

**1. Optimised Performance**

Clickr Projects & Hours should be able to hold up to 1000 projects without a noticeable sluggishness in performance for typical usage. To achieve this, we have used optimal data structures and algorithms for storage and retrieval of data.
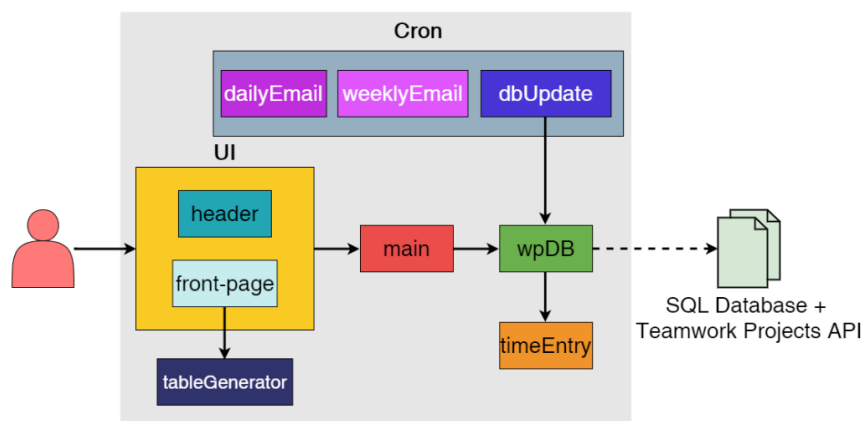
**2. Designer Friendly**

As Clickr Projects & Hours is intended for future developers to make modifications and extensions to its functionalities, adhering to the high-level design architecture strictly was a necessity. This translates to extensive use of abstractions for code clarity. Additionally, we have liberally used code commenting throughout our project files for our classes and methods for developers to understand how they work.

# 2. System Design

This section introduces the high-level design of Clickr Projects & Hours and gives you a basic understanding of how each component operates and interacts with one another.

## 2.1. Architecture

The *Architecture Diagram* given above explains the high-level design of Clickr Projects & Hours. Given below is a quick overview of each component.

`UI` includes `header` and `front-page`. It is responsible for outputting the HTML code for the website as well as the JavaScript functions when users interact with the elements on the webpage. `tableGenerator` is used to generate tables shown on the website as well as the emails.

`main` generates projects and hours reports when users issue the command to export these reports.
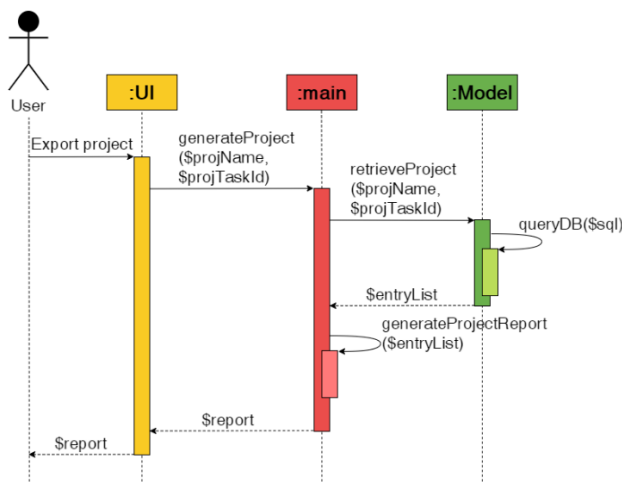
`wpDB` retrieves information from our SQL database.

`timeEntry` represents a row in the SQL database.

`Cron` represents a collection of files used to perform certain desired tasks at a specific time. `dailyEmail` sends the daily and weekly hours overview to managers in the Myanmar team every weekday at 7am. `weeklyEmail` sends the maintenance and subscription projects overview to managers in the Singapore team every week on Monday at 7am. `dbUpdate` updates the SQL database used to generate the information on the website and project and hours reports every hour.

## How the architecture components interact with each other

The *Sequence Diagram* below shows how the components interact with each other for the scenario when the user exports a project report.



# 3. Implementation

This section describes some noteworthy details on how certain features are implemented.

## 3.1. Maintenance Projects Overview

Clickr Projects & Hours allows users to view an overview of maintenance projects. This overview highlights projects that are due, as well as whether hours expended on the projects have exceeded the amount purchased by clients. Users can also export an excel report for an individual project which contains all the completed tasks.

### 3.1.1. Implementation

The table displaying the overview is generated by `tableGenerator#generateMaintenance`.

Project exports are facilitated by `main#generateProject`.

## 3.2. Subscription Projects Overview

Clickr Projects & Hours allows users to view an overview of subscription projects. This overview highlights project that are due.

### 3.2.1. Implementation

The table displaying the overview is generated by `tableGenerator#generateSubscription`.

## 3.3. SEO Projects Overview

*This feature is incomplete. I have created the table layout, but the cells are not filled*

## 3.4. Daily Hours Overview

Clickr Projects & Hours allows users to view hours clocked by each employee in the current week. Users can filter by Singapore/Myanmar teams, and navigate to other weeks. Additionally, users can export a report containing all tasks completed by employees on a specific day.

### 3.4.1. Implementation

The table displaying the overview is generated by `tableGenerator#generateDaily`.

Daily hours exports are facilitated by `main#generateDaily`.

## 3.5. Weekly Hours Overview

Clickr Projects & Hours allows users to view hours clocked by each employee in total for a week for the past 7 weeks. Users can filter by Singapore/Myanmar teams, and navigate to the previous and next 7 weeks. Additionally, users can export a report containing all tasks completed by employees over a date range.

### 3.5.1. Implementation

The table displaying the overview is generated by `tablegenerator#generateWeekly`.

Weekly hours exports are facilitated by `main#generateWeekly`.