

# System Design Document

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## CRC High Level Class Description

<b>DBConnector</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• Connects to the database on the local server</li></ul>	<ul style="list-style-type: none"><li>• RegisterController</li><li>• LoginController</li><li>• HomeController</li><li>• HabitController</li><li>• Optimizer</li></ul>

<b>DBInput</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• Passes input parameters to the local database server</li></ul>	<ul style="list-style-type: none"><li>• RegisterController</li><li>• LoginController</li><li>• HabitController</li></ul>

<b>DBOutput</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• Fetches the required data from the local database</li></ul>	<ul style="list-style-type: none"><li>• LoginController</li><li>• HabitController</li><li>• Optimizer</li></ul>

<b>CreateUserPage</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• UI to handle entering of new user information</li><li>• Passes information to RegisterController</li></ul>	<ul style="list-style-type: none"><li>• RegisterController</li></ul>

<b>LoginPage</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• Ui to handle the login information from input</li><li>• Passes information to LoginController</li></ul>	<ul style="list-style-type: none"><li>• LoginController</li></ul>

<b>HomePage</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• UI to handle to home page navigation</li><li>• Passes information to HomeController</li></ul>	<ul style="list-style-type: none"><li>• HomeController</li><li>• LoginController</li></ul>

## System Design Document

<b>HabitPage</b>	
<b>Responsabilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• UI to handle the habit inputs from input</li><li>• Passes information to HabitController</li></ul>	<ul style="list-style-type: none"><li>• HabitController</li><li>• HomeController</li><li>• Optimizer</li></ul>

<b>HabitCard</b>	
<b>Responsabilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• UI to handle the habit cards of the habits</li><li>• Passes information to HabitController</li></ul>	<ul style="list-style-type: none"><li>• HabitController</li><li>• Optimizer</li></ul>

<b>WeeklyPlanner</b>	
<b>Responsabilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• UI to handle showing the created weekly schedule</li></ul>	<ul style="list-style-type: none"><li>• Optimizer</li></ul>

<b>RegisterController</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"> <li>• Controller to handle entering the new registered account information</li> <li>• Passes information to the database and the HomeController</li> </ul>	<ul style="list-style-type: none"> <li>• CreateUserPage</li> <li>• HomeController</li> <li>• DBConnector</li> <li>• DBInput</li> </ul>

<b>LoginController</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"> <li>• Controller to handle entering a user's account information</li> <li>• Passes information to the database and the HomeController</li> </ul>	<ul style="list-style-type: none"> <li>• LoginPage</li> <li>• HomeController</li> <li>• DBConnector</li> <li>• DBInput</li> <li>• DBOutput</li> </ul>

<b>HabitController</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"> <li>• Controller to handle entering habits information</li> <li>• Passes information to the database and the HabitPage</li> </ul>	<ul style="list-style-type: none"> <li>• HabitPage</li> <li>• HabitCard</li> <li>• Optimizer</li> <li>• DBConnector</li> <li>• DBInput</li> <li>• DBOutput</li> </ul>

<b>HomeController</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• Controller to handle the buttons on the HomePage</li><li>• Passes information to either the HabitPage if that button is pressed</li></ul>	<ul style="list-style-type: none"><li>• HomePage</li><li>• HabitPage</li><li>• RegisterController</li><li>• LoginController</li><li>• DBConnector</li></ul>

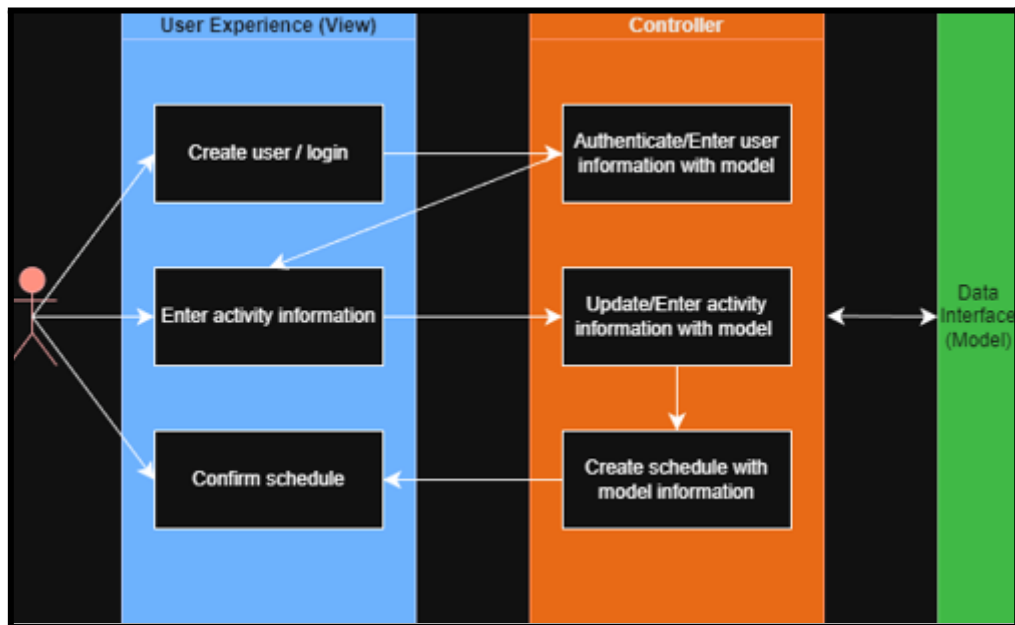
  

<b>Optimizer</b>	
<b>Responsibilities</b>	<b>Collaborators</b>
<ul style="list-style-type: none"><li>• Controller to handle optimizing all of the user's habits</li><li>• Passes information to the WeeklyPlanner</li></ul>	<ul style="list-style-type: none"><li>• HabitPage</li><li>• HabitCard</li><li>• WeeklyPlanner</li><li>• HabitController</li><li>• DBConnector</li><li>• DBOutput</li></ul>

## System Interaction With Environment

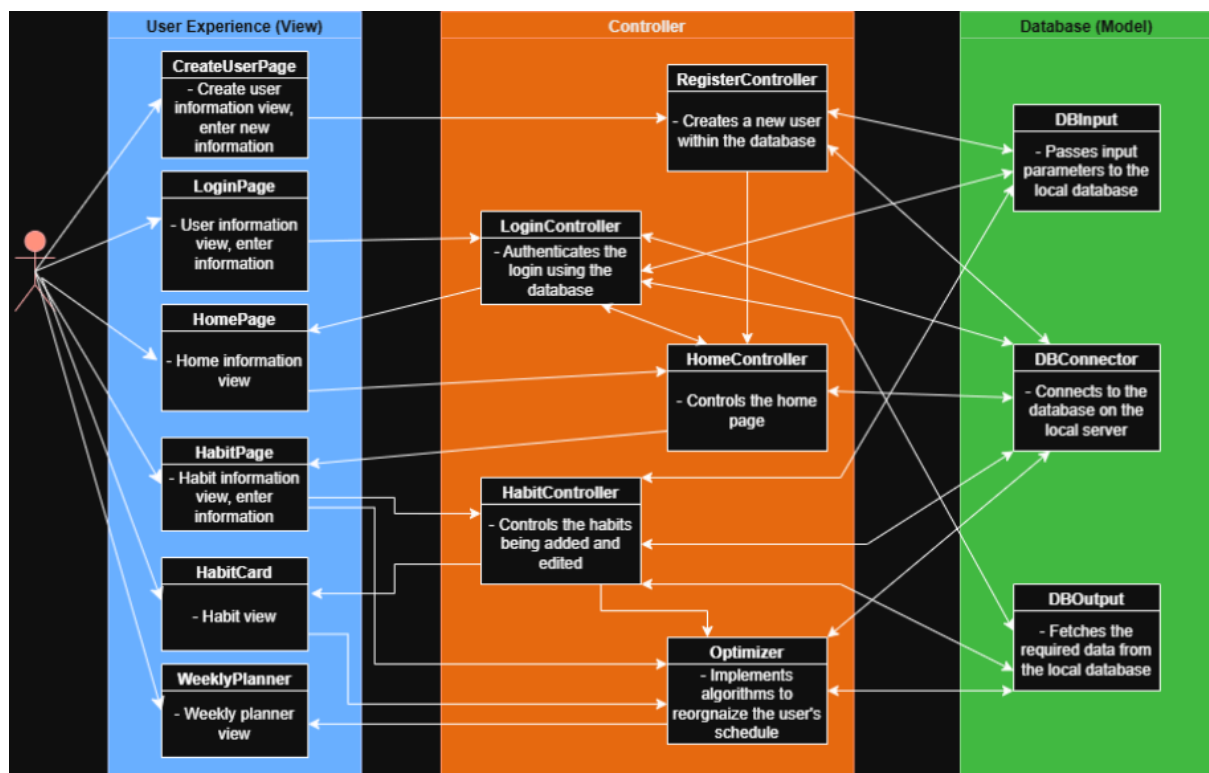
The system requires the Java 21 JDK, Java Swing (& SQL I guess? Edit Later) in order to run on all platforms (Windows, Mac, Linux). There is no internet connection required, and there is no credential/account creation required (currently) in order to use the app to its full potential.

## Architecture Of System



On a high level, each page will transmit data entered through controllers to the database and back to the page when necessary. The database will be receiving and giving information at each stage to allow flow to the next through the controllers.

## System Decomposition



Each of the important tasks that the application can perform (such as creating a user, logging in and creating a habit) has their own Page. That page is then



controlled by its own specific Controller that is specific for that page. Those Controllers use the local database through the Models: DBConnector, DBInput and DBOutput to get that specific task done for the specific user that is currently logged in or assist in them logging in or creating an account. This format allows all the tasks to be handled properly with MVC.