National Autonomous University of Mexico

School of Engineering

Object-oriented programming models

AM TECHNOLOGIES

Software Design

Version :1.0

9 of november 2021

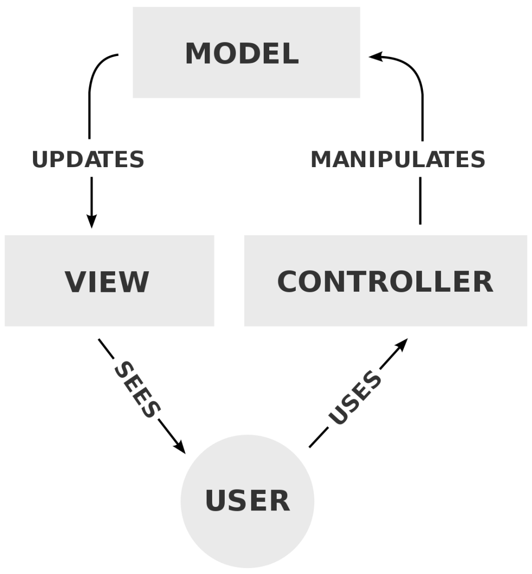
Table of content:

Changelog

Version	Description	Responsible for the update	Update date
v1.0	Document creation	José Alejandro Morán Duque	7/10/2021
v2.0	Added updated diagrams	José Alejandro Morán Duque	2/12/2021

1. Architecture description

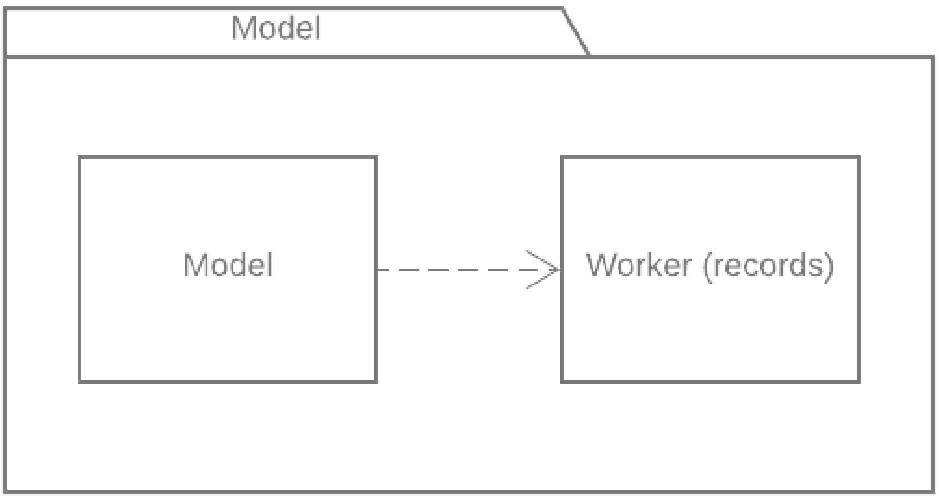
The used software architecture will be MVC or Model View Controller and it will be implemented in java



1.1. Architecture packages

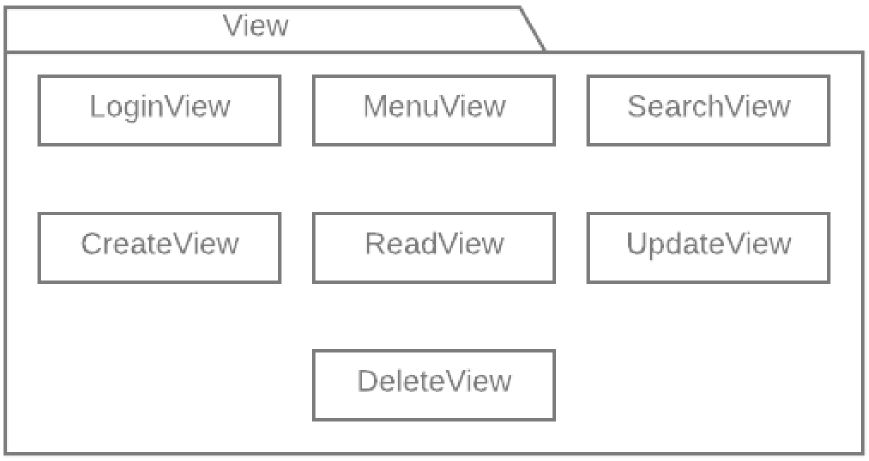
1.1.1. Model

The model component manages all the data-related logic, in other words, is the one that interacts with the database retrieving, deleting, updating, and creating new entries.
The model sends the data requested by the controller to the View.



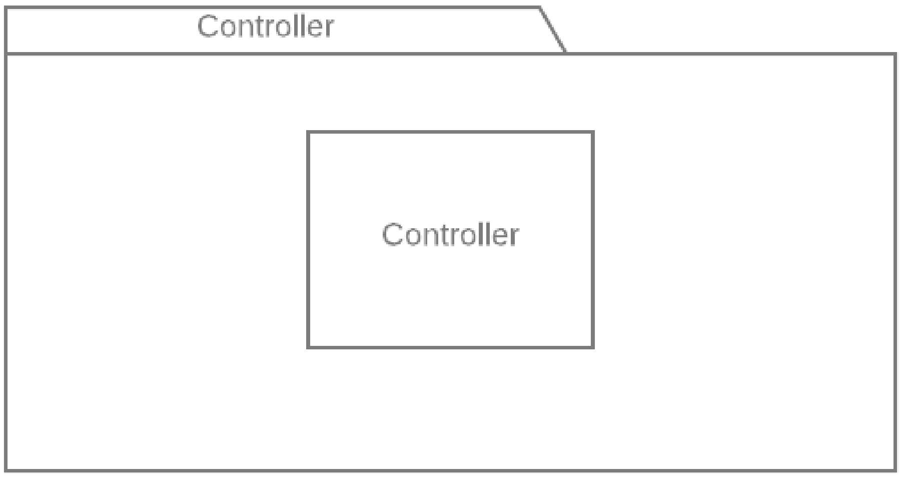
1.1.2. View

The View component is used for all the user interface logic of the application, the View presents to the user the information requested by the Controller to the Model.



1.1.3. Controller

The Controller component manages all the logic that integrates the View with the Model. The Controller manipulates the data using the Model and interacts with the View to render the new data.



1.2. Implement environment definition

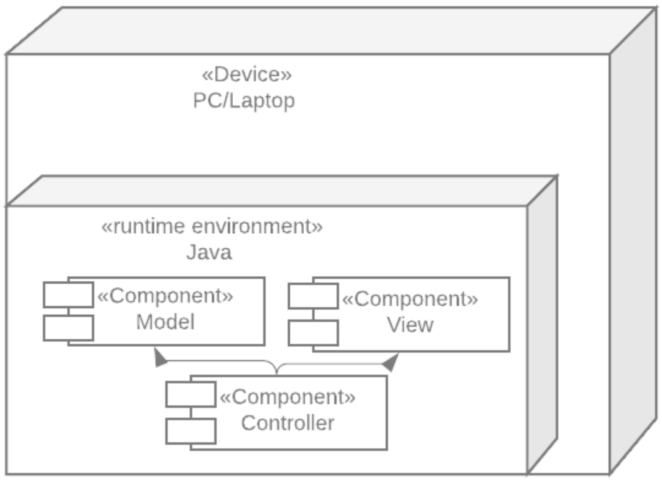
Concept	Tool
Programming language	Java
Framework	Swing
UML diagram maker	Lucidchart and Intellij IDEA
Version control	Github

2. Deployment view

2.1. Description

The one and only node on the system is the client.
Client: User computer with any of the most popular operating systems with java support (Windows, Linux, MacOs, etc).

2.2. Deployment model



3. Logic view

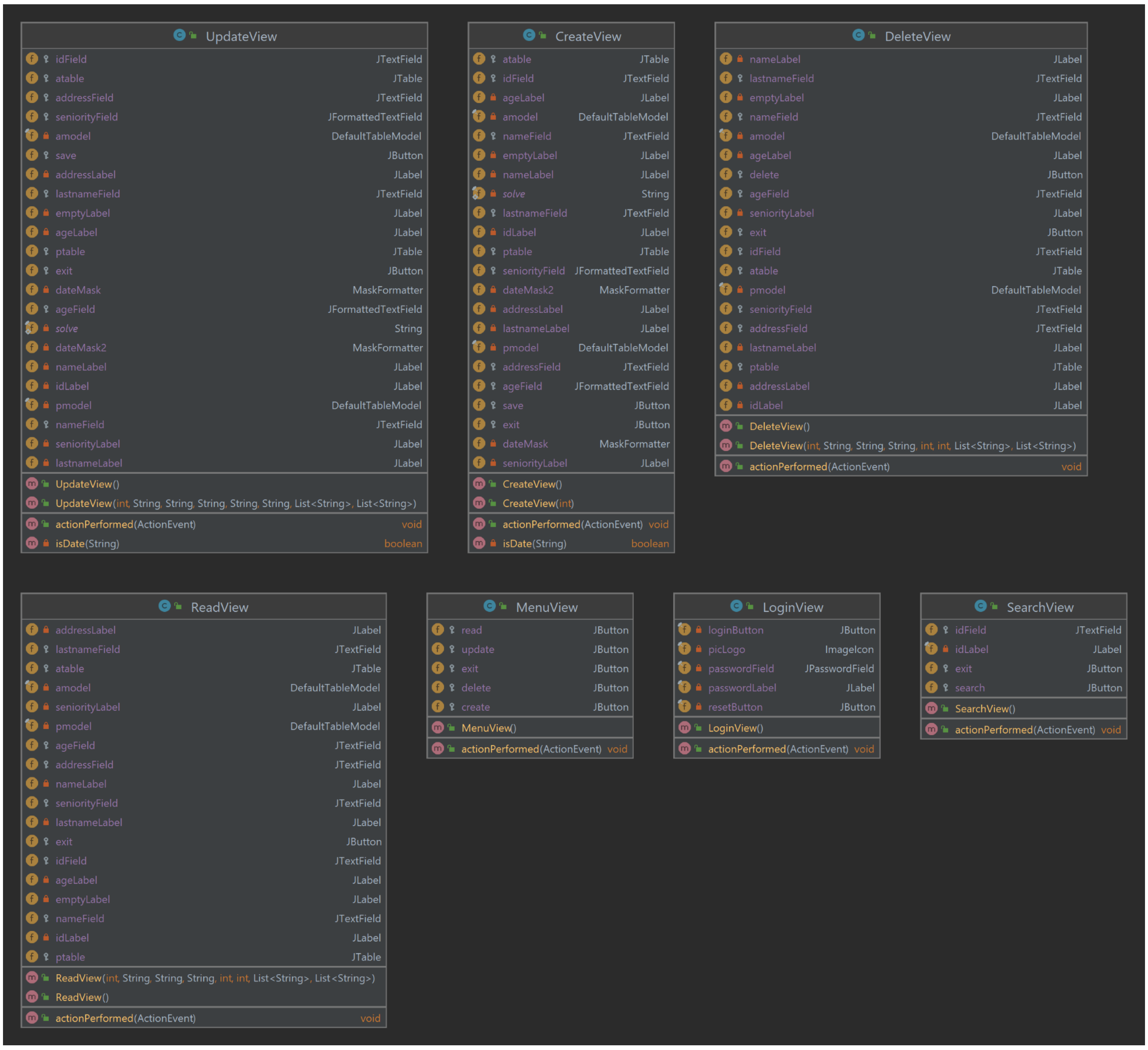
3.1. Description

This section contains the general composition of the classes of the application divided by packages.

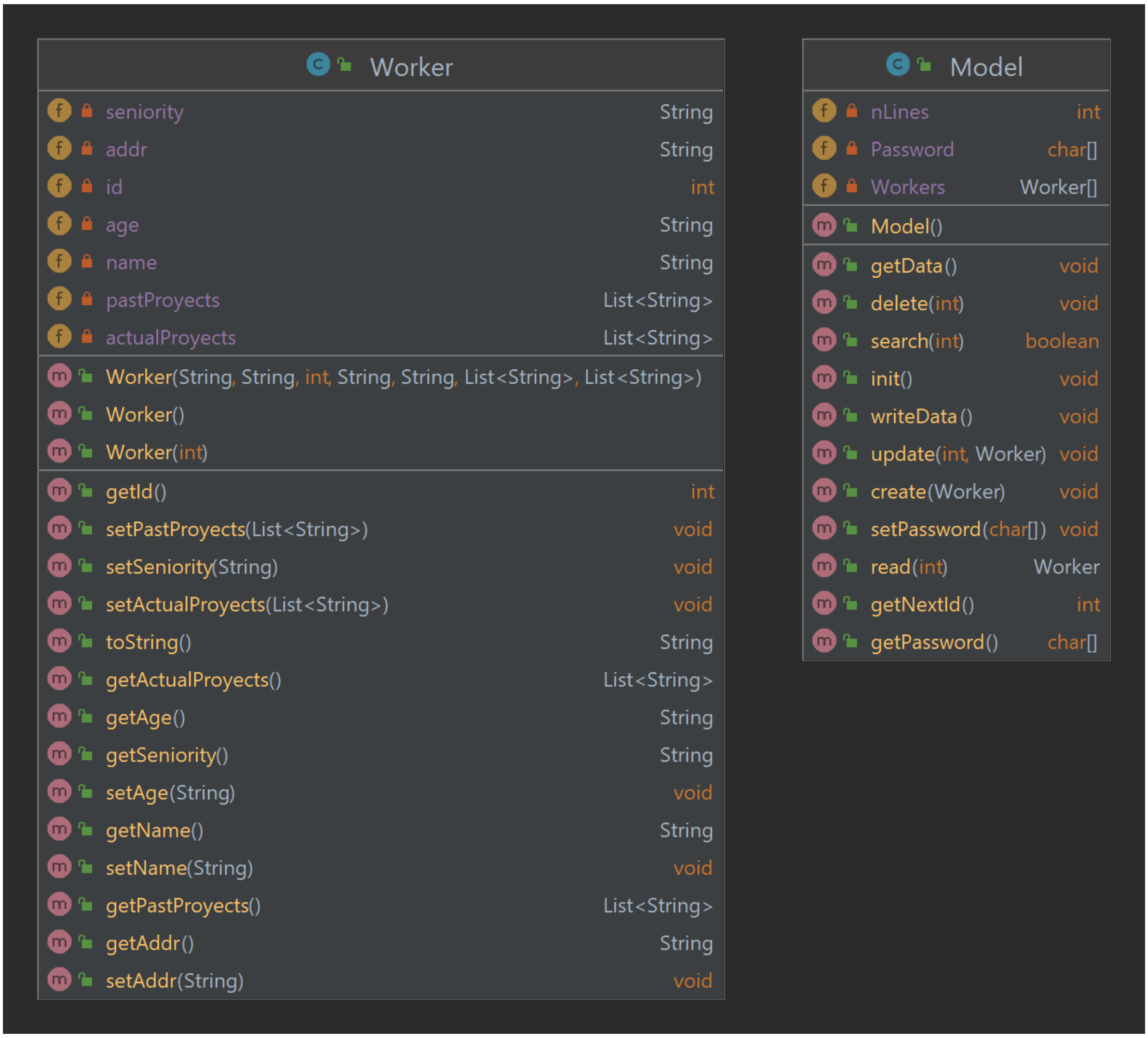
3.2. Class identification

3.3. This section contains the diagrams that describe the behavior of the system and the relationships between the classes for all the packages.

3.3.1. View classes



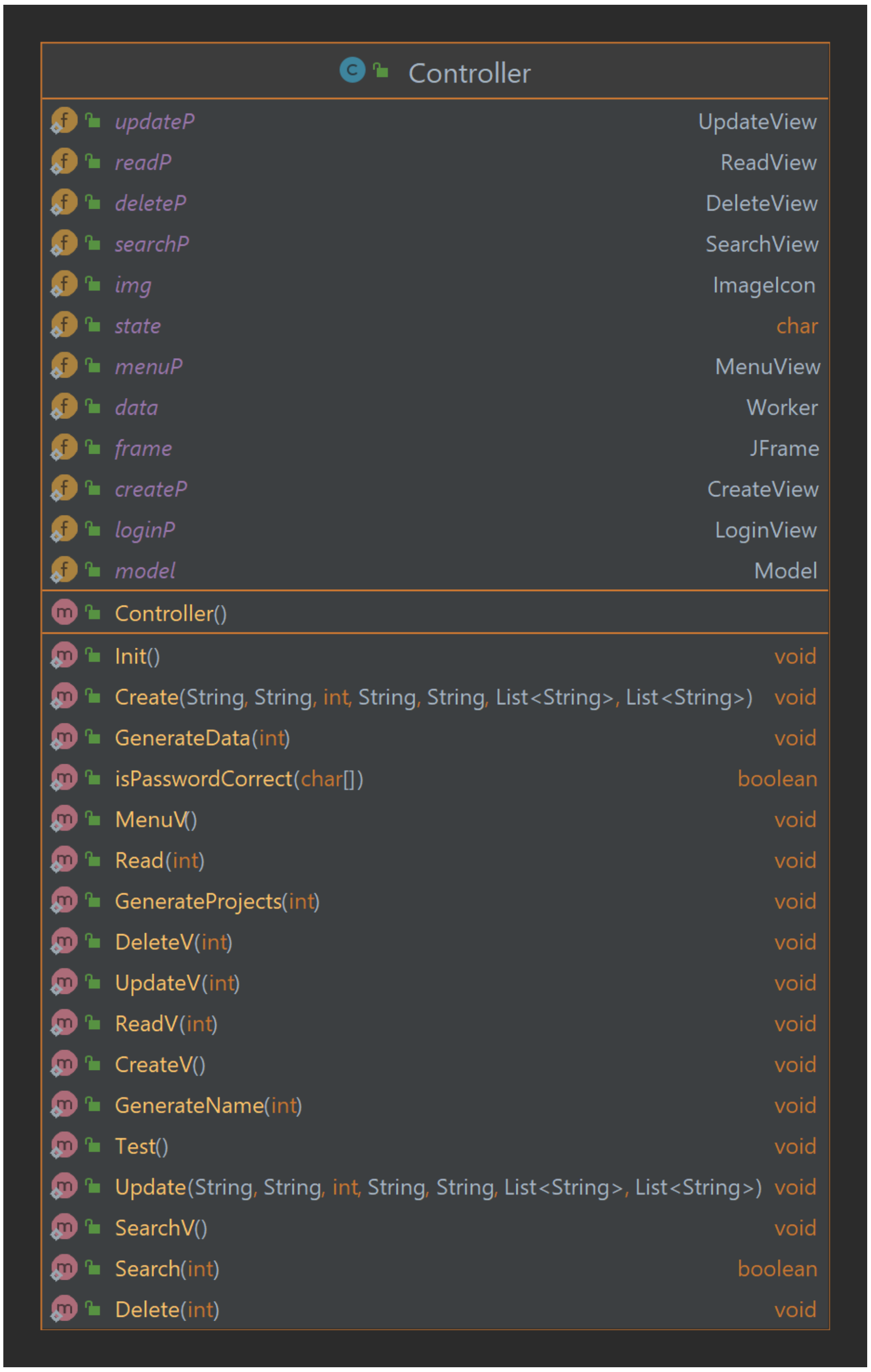
3.3.2. Model classes



Worker	
seniority	String
addr	String
id	int
age	String
name	String
pastProyects	List<String>
actualProyects	List<String>
Worker(String, String, int, String, String, List<String>, List<String>)	
Worker()	
Worker(int)	
getId()	int
setPastProyects(List<String>)	void
setSeniority(String)	void
setActualProyects(List<String>)	void
toString()	String
getActualProyects()	List<String>
getAge()	String
getSeniority()	String
setAge(String)	void
getName()	String
setName(String)	void
getPastProyects()	List<String>
getAddr()	String
setAddr(String)	void

Model	
nLines	int
Password	char[]
Workers	Worker[]
Model()	
getData()	void
delete(int)	void
search(int)	boolean
init()	void
writeData()	void
update(int, Worker)	void
create(Worker)	void
setPassword(char[])	void
read(int)	Worker
getNextId()	int
getPassword()	char[]

3.3.3. Controller classes



Controller

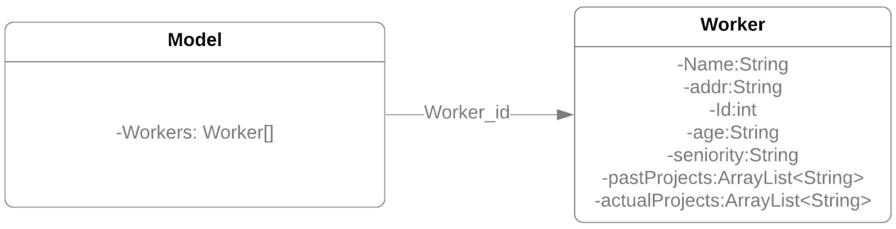
updateP	UpdateView
readP	ReadView
deleteP	DeleteView
searchP	SearchView
img	ImageIcon
state	char
menuP	MenuView
data	Worker
frame	JFrame
createP	CreateView
loginP	LoginView
model	Model
Controller()	
Init()	void
Create(String, String, int, String, String, List<String>, List<String>)	void
GenerateData(int)	void
isPasswordCorrect(char[])	boolean
MenuV()	void
Read(int)	void
GenerateProjects(int)	void
DeleteV(int)	void
UpdateV(int)	void
ReadV(int)	void
CreateV()	void
GenerateName(int)	void
Test()	void
Update(String, String, int, String, String, List<String>, List<String>)	void
SearchV()	void
Search(int)	boolean
Delete(int)	void

4. Data view

4.1. Description

This section contains the diagram that describes the general data structure of the system.

4.2. Database diagram



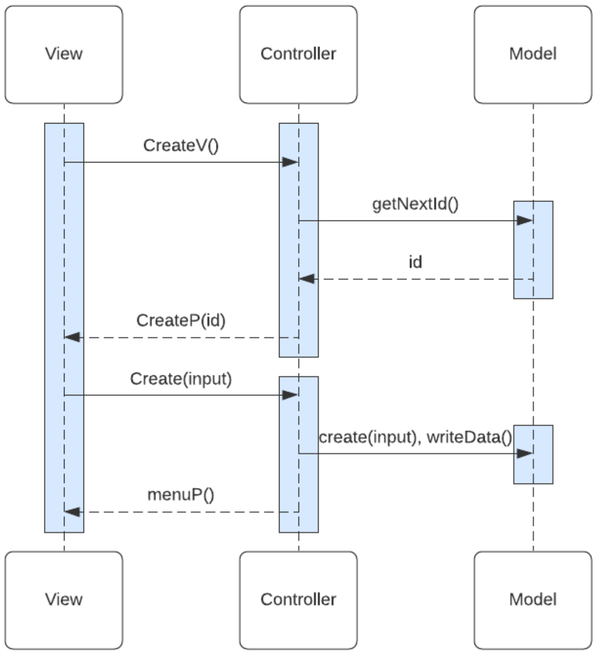
5. Dynamic view

5.1. Description

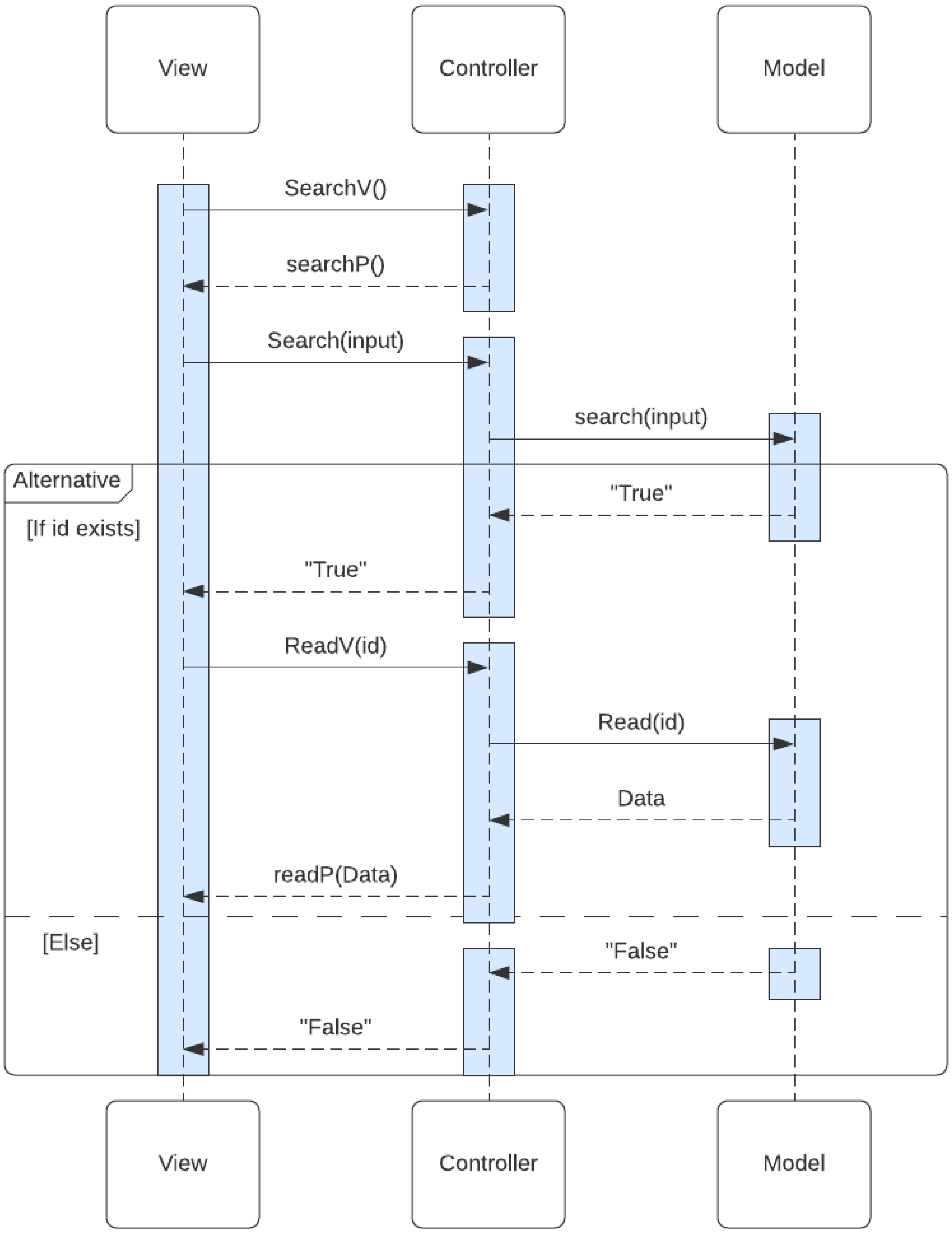
This section contains the sequence diagrams of all the use cases.
The diagrams show how the objects relate through the time.

5.2. Sequence diagrams

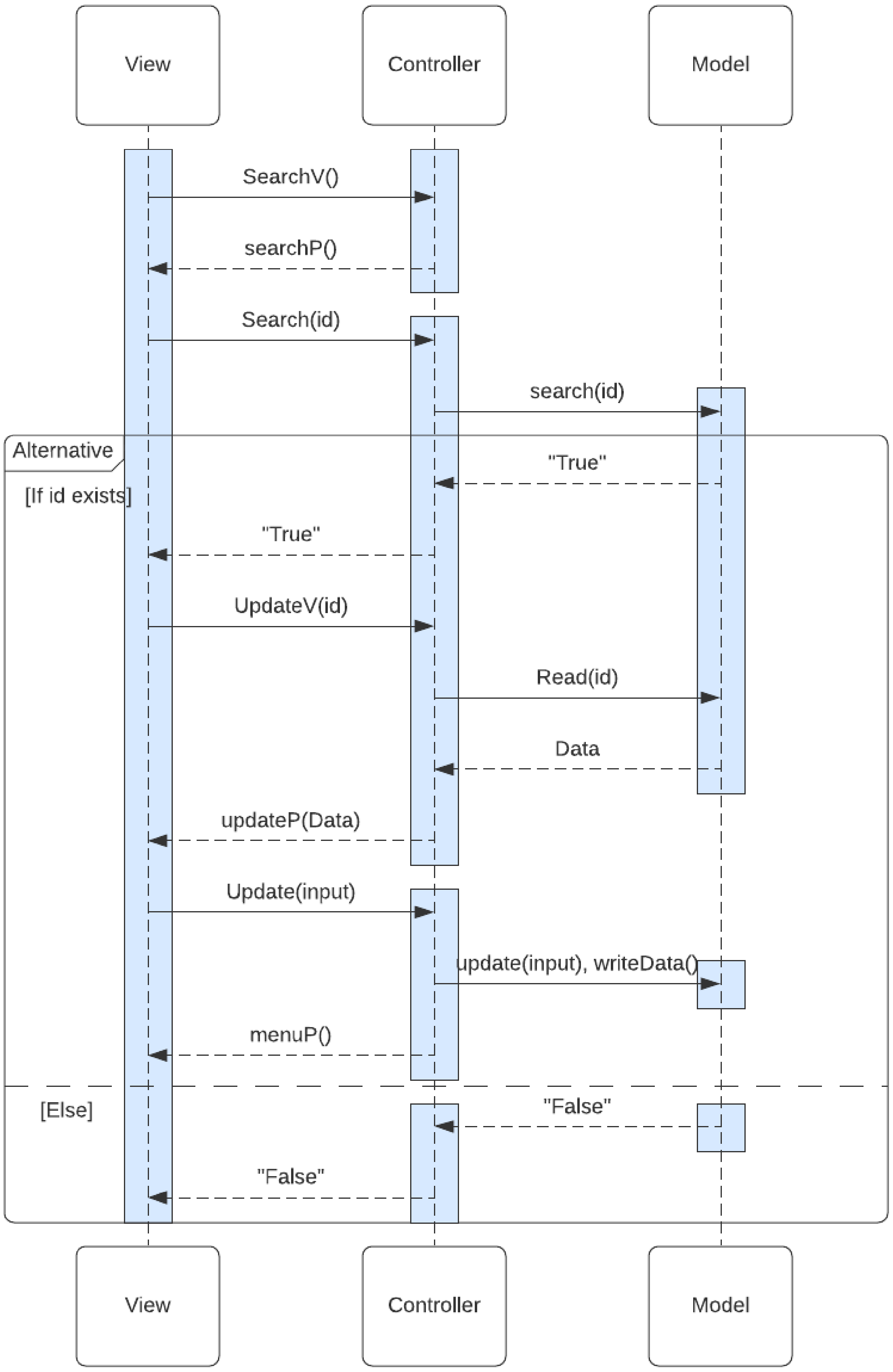
5.2.1. Create record



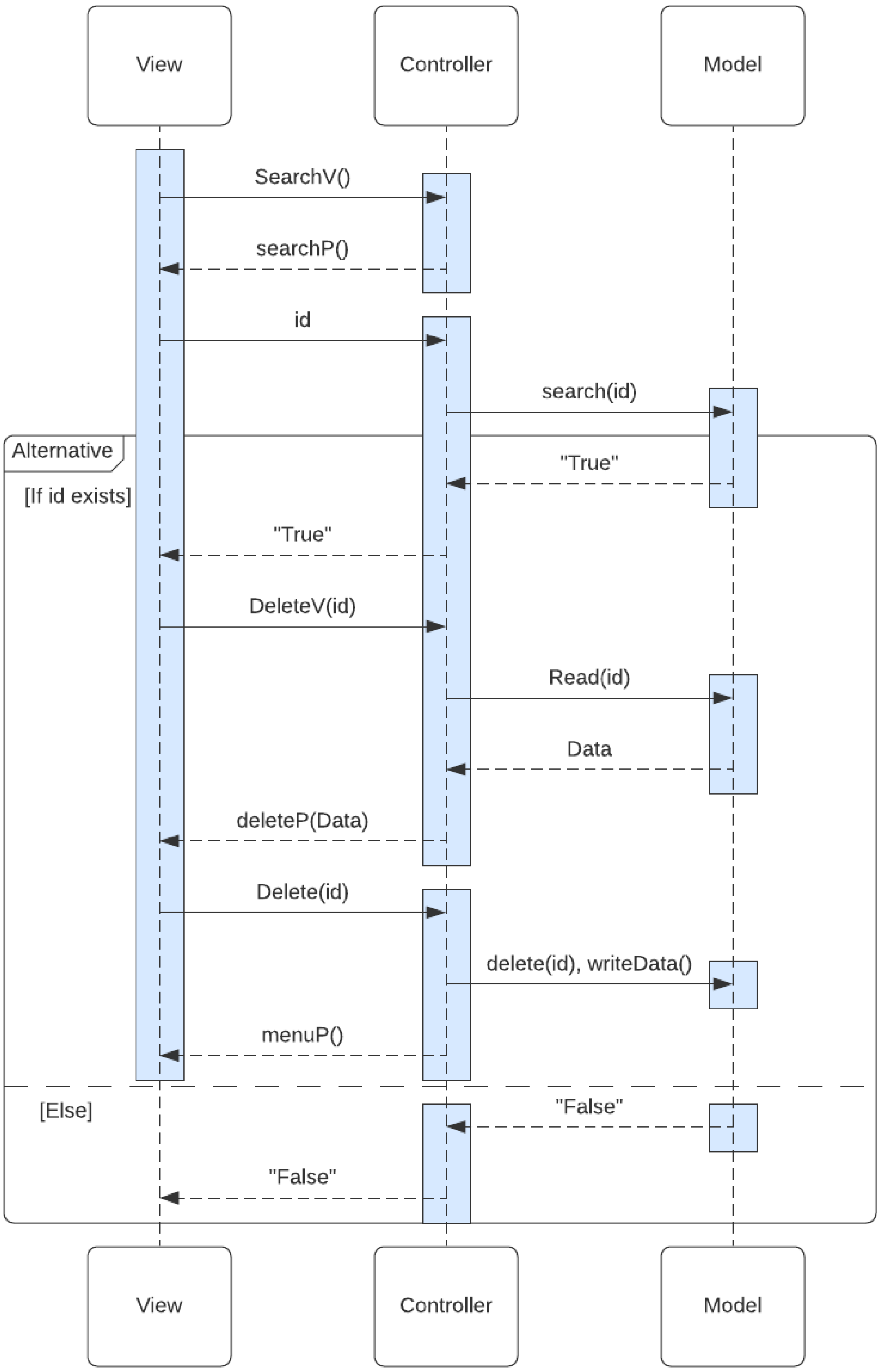
5.2.2. Read record



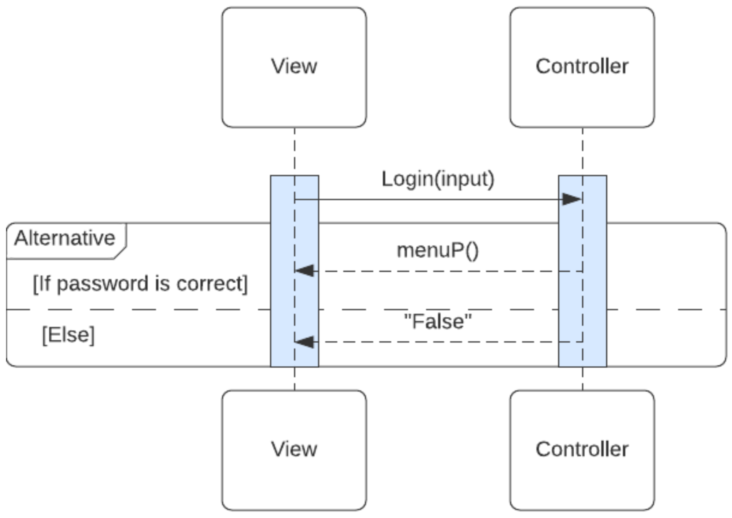
5.2.3. Update record



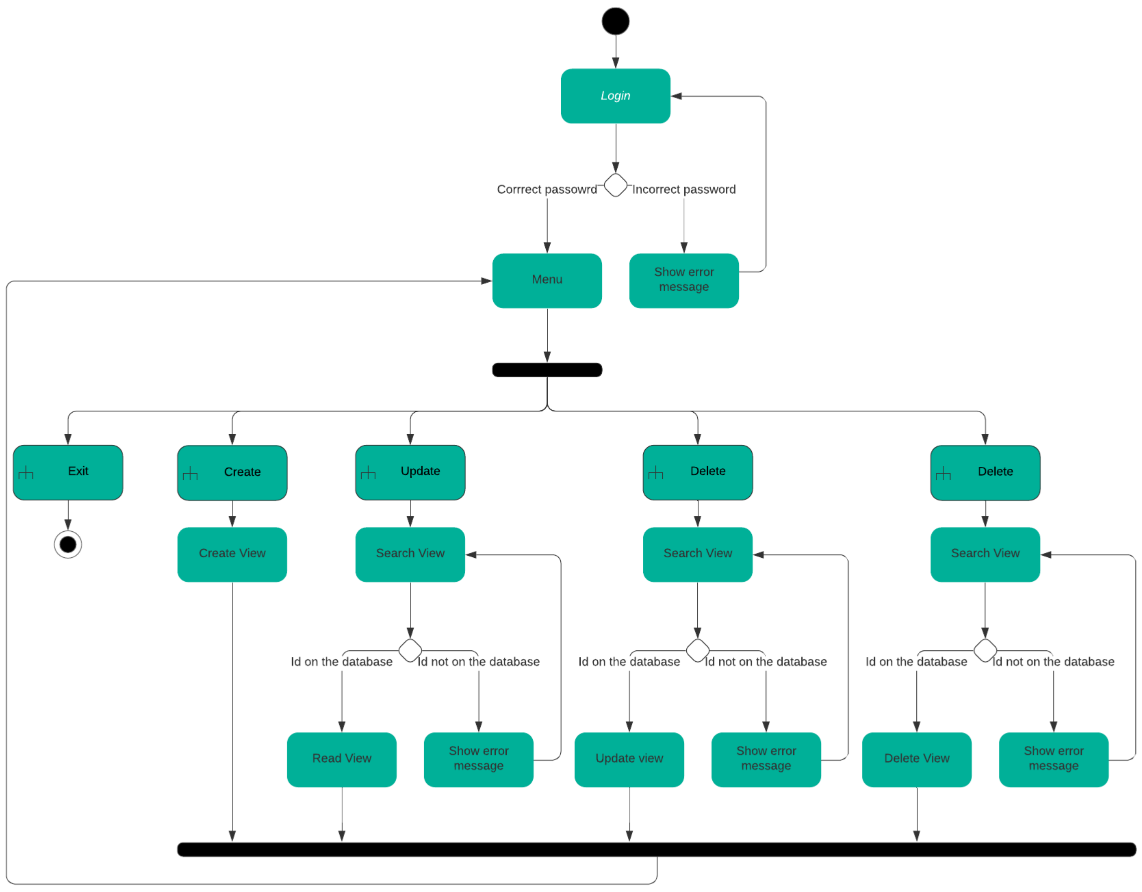
5.2.4. Delete record



5.2.5. Login



5.3. Navigation diagram


Login
Corrrect passowrd
Incorrect password
Menu
Show error message
Exit
Create
Update
Delete
Delete
Create View
Search View
Search View
Search View
Id on the database
Id not on the database
Read View
Show error message
Update view
Show error message
Delete View
Show error message