Menofia University

Faculty of Computers and Information

Department of Information Technology

Attendance

Version 1.0

Supervised by

Dr. Hatem Mohamed

Menofia University

Faculty of Computers and Information

Department of Information Technology

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قال تعالي.........

بسم الله الرحمن الرحيم

”فَتَعَالَى اللَّهُ الْمَلِكُ الْحَقُّ ۗ وَلَا تَعْجَلْ بِالْقُرْآنِ مِن قَبْلِ أَن
يُقْضَىٰ إِلَيْكَ وَحْيُهُ ۖ وَقُل رَّبِّ زِدْنِي عِلْمًا”

”وَلَقَدْ آتَيْنَا دَاوُودَ وَسُلَيْمَانَ عِلْمًا ۖ وَقَالَا الْحَمْدُ لِلَّهِ الَّذِي
فَضَّلَنَا عَلَىٰ كَثِيرٍ مِّنْ عِبَادِهِ الْمُؤْمِنِينَ”

Acknowledgment

It has been a wonderful opportunity to gain lots of experience in real-time projects, for that we want to thank all the people who made it possible for students like us. Special thanks to all the people for the efforts they did to provide us with all useful information and making the path clear for the students to implement all the education periods in real-time project design and analysis. Furthermore, we are indebted to **Dr. Hatem Mohamed**, for her patience and guidance throughout the semester.

we would like to express our sincere appreciation to our graduation project supervisor **Dr. Hatem Mohamed**, for her guidance, continuous encouragement, and support during the course. It's our duty to thank all the testing committee members for their generous discussions and encouragement.

At last, we would like to thank all the people who helped, supported, and encouraged us to succeed

Abstract

Workplace attendance is the hours and days that, employees show up for work. For employers, it is important to know when their employees are showing up as scheduled.

So, we discuss it and able to develop an App for this mission.

This App will help both Employers and Employees

For Employers: it will help them to monitor all user’s data base and her location and time that he had attended by them, so the App will help them to show users and know all about them, such their personal information, their daily and monthly attendance, and each day will know the specific time and location that they had checked in and out by them.

For Employees: it will help them more than help employers because it will get them attend themselves without going to fingerprint machine, just they will open the App and check in or out or scanning the QR code.

And they able to enter their personal data, for one time only, if there any errors must call admin to solve it.

And they can show their daily and monthly attendance easily.

Chapter 1

Introduction

Introduction

The most common types of attendance tracking are employee attendance tracking, student attendance tracking, and tracking attendance at events, and here are the answers to the most shared questions.

Employee’s attendance is important for number of reasons:

- Supervisors can identify and address issues and inconsistencies in employee attendance.
- Supervisors and managers get a straightforward account of employee working hours.
- Managers get a way to create viable schedules based on realistic employee time.
- Employees can easily work remotely and show evidence of their work hours.
- Employees always get paid properly and payroll becomes easier.
- It gets easier to request and be given time-off.
- It gets easier to schedule vacations.

Developers (programmers or application makers) faced problems:

The absence of a single software environment, due to the multiplicity of systems used by users, which results from the multiplicity of operating systems and methods of use for programs that are the gateway to the proposed software solutions.

We must consider the general taste in the process of design and analysis during the work of software solutions, which is difficult to comply with all the general and personal standards of all users in all forms and types.

There are also several ways to employee’s attendance in your company or business:

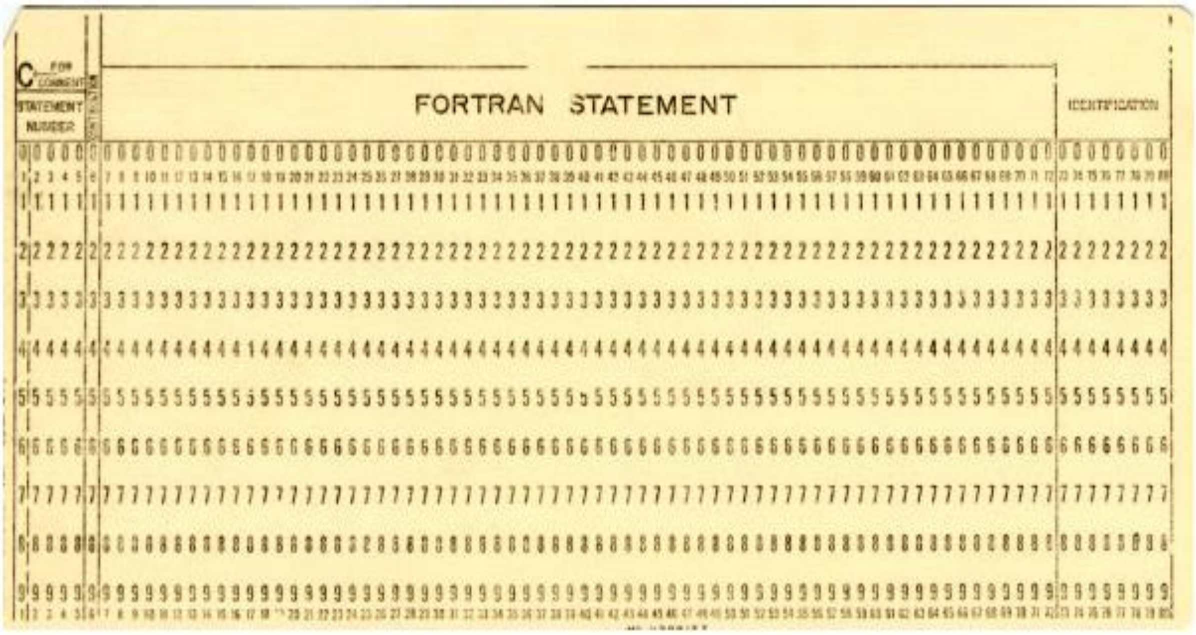
- **Mobile attendance system:**
  This presence tracking method for employees involves a GPS system which tracks and confirms employee hours. Popular with people whose jobs involve a lot of field work, such as truck drivers, construction workers.

- **Card swipe system**:

  This method is an updated variation of the now outdated punch card system.

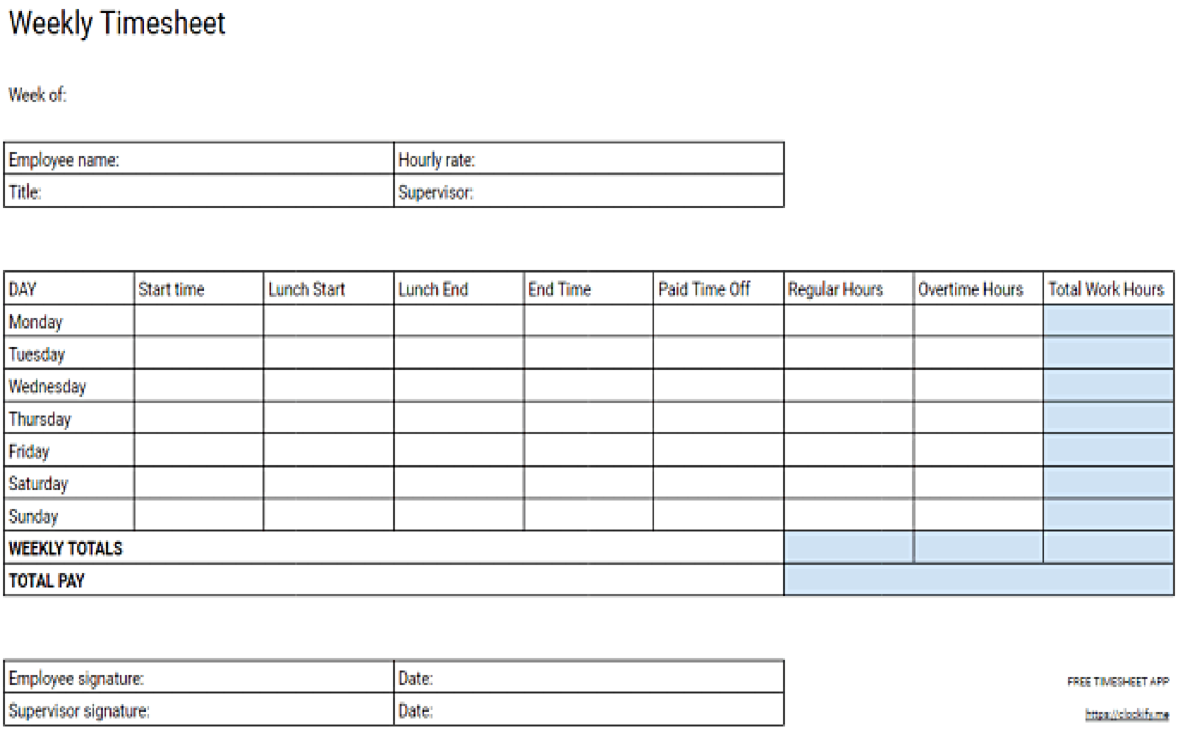
  In the punch card system, employees would bring their timecards to work and have them punched by hand or machine upon arrival and departure.

On the other hand, in the card swipe system, employee swipes their ID cards to clock in and clock out, and this data is automatically transferred to a computer that automatically calculates employee attendance.



- **Entering time in a spreadsheet:**

  Entering time in a spreadsheet is a manual way of tracking presence employees enter their start time, end time, lunch start time, lunch end time, regular hours, overtime hours, total hours, PTO, earnings, and other relevant data a simple spreadsheet template.



Weekly Timesheet

Week of:

Employee name:	Hourly rate:
Title:	Supervisor:

DAY	Start time	Lunch Start	Lunch End	End Time	Paid Time Off	Regular Hours	Overtime Hours	Total Work Hours
Monday								
Tuesday								
Wednesday								
Thursday								
Friday								
Saturday								
Sunday								
WEEKLY TOTALS								
TOTAL PAY								

Employee signature:	Date:
Supervisor signature:	Date:

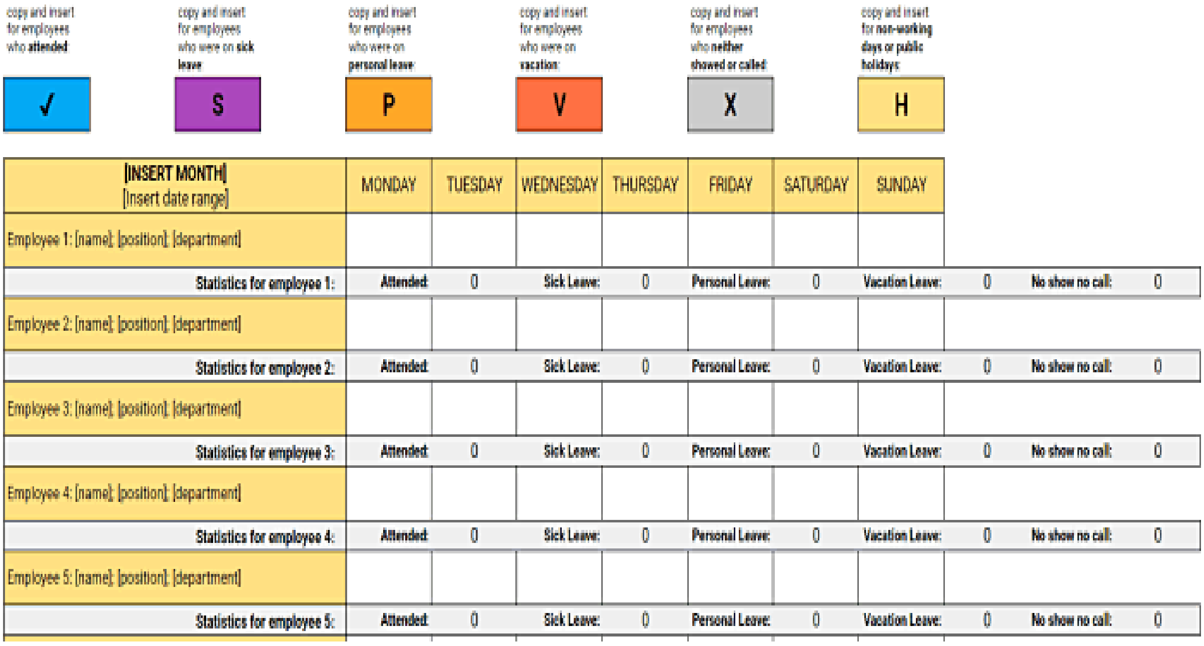
FREE TIMESHEET APP

https://clockify.me

Depending on the company requirements, employees will usually get to fill out their spreadsheets on a daily, weekly, bi-weekly, or monthly basis.

Some companies store this data electronically, but some insist on printing out the spreadsheets.

Alternatively, employees (or the HR department) can simply mark who attended work, and who was on sick leave, personal leave, or vacation instead, in an excel employee attendance sheet.

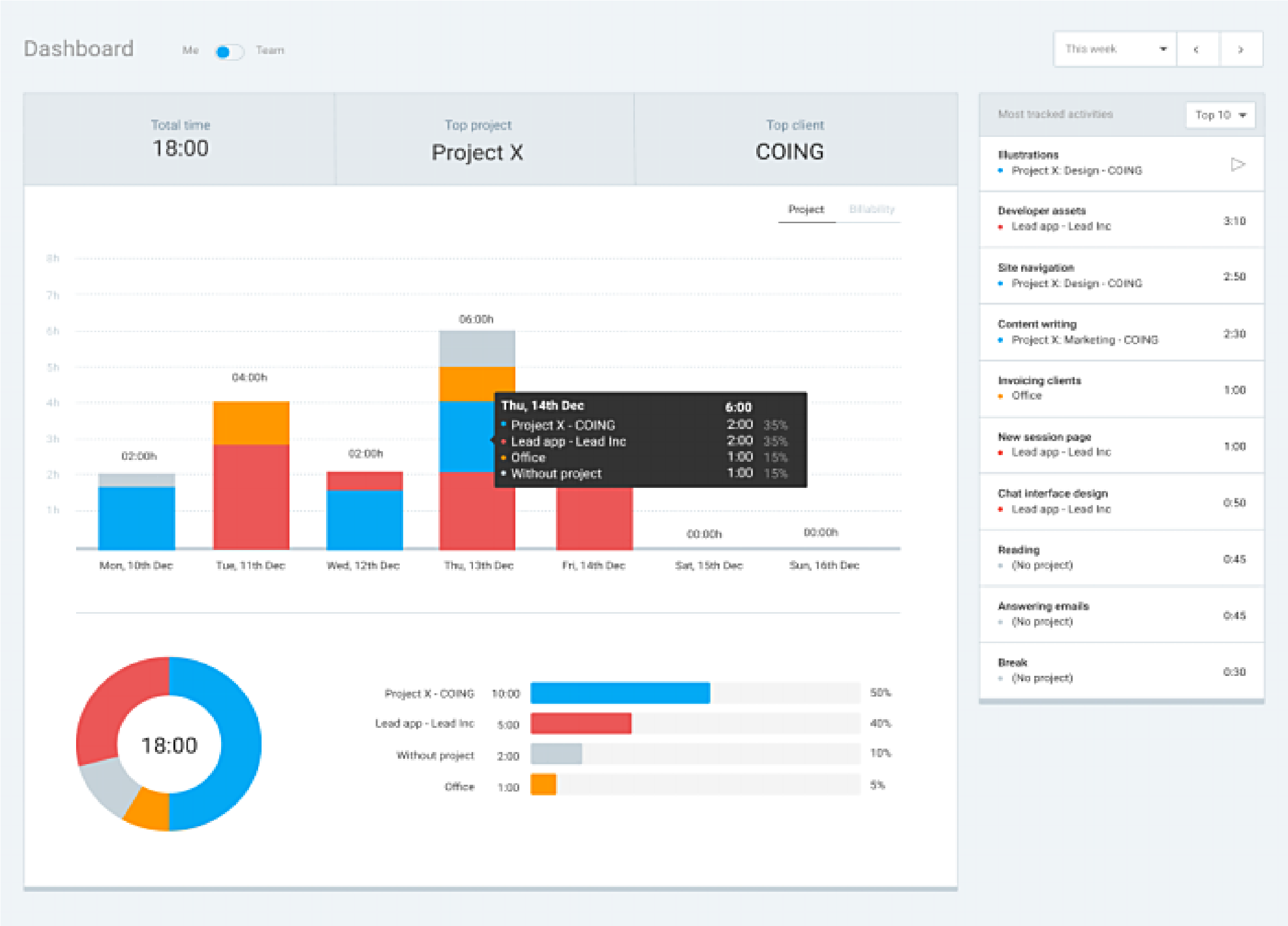


copy and insert for employees who **attended**	copy and insert for employees who were on **sick leave**	copy and insert for employees who were on **personal leave**:	copy and insert for employees who were on **vacation**:	copy and insert for employees who **neither showed or called**:	copy and insert for **non-working days or public holidays**:
✓	S	P	V	X	H

[INSERT MONTH] [Insert date range]	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY			
Employee 1: [name]; [position]; [department]										
Statistics for employee 1:	**Attended:**	0	**Sick Leave:**	0	**Personal Leave:**	0	**Vacation Leave:**	0	**No show no call:**	0
Employee 2: [name]; [position]; [department]										
Statistics for employee 2:	**Attended:**	0	**Sick Leave:**	0	**Personal Leave:**	0	**Vacation Leave:**	0	**No show no call:**	0
Employee 3: [name]; [position]; [department]										
Statistics for employee 3:	**Attended:**	0	**Sick Leave:**	0	**Personal Leave:**	0	**Vacation Leave:**	0	**No show no call:**	0
Employee 4: [name]; [position]; [department]										
Statistics for employee 4:	**Attended:**	0	**Sick Leave:**	0	**Personal Leave:**	0	**Vacation Leave:**	0	**No show no call:**	0
Employee 5: [name]; [position]; [department]										
Statistics for employee 5:	**Attended:**	0	**Sick Leave:**	0	**Personal Leave:**	0	**Vacation Leave:**	0	**No show no call:**	0

1. Checking in to an app upon arrival to work. You start the timer and work during this period until you fill out your daily norm.
2. Checking out upon departure from work. You stop the timer and add the exact hours you have worked today to a list of daily time entries.

The term “attendance” usually associates people to a certain “location” – the employee arrives at a location when he/she performs work, and his mere presence confirms his attendance. But an employee attendance app lets you confirm your attendance at work by tracking the exact time and location you at working.



Most tracked activities	
Illustrations Project X: Design - COING	▷
Developer assets Lead app - Lead Inc	3:10
Site navigation Project X: Design - COING	2:50
Content writing Project X: Marketing - COING	2:30
Invoicing clients Office	1:00
New session page Lead app - Lead Inc	1:00
Chat interface design Lead app - Lead Inc	0:50
Reading (No project)	0:45
Answering emails (No project)	0:45
Break (No project)	0:30

Moreover, an employee attendance app for Android or iOS works as a mobile attendance system as you can easily log hours for your field work, so employees who work on the go can effectively use it as well.

Fingerprint system:

A fingerprint scanner is a type of technology that identifies and authenticates the fingerprints of an individual in order to grant or deny access to a computer system or a physical facility.

It is a type of biometric security technology that utilizes the combination of hardware and software techniques to identify the fingerprint scans of an individual.

A recent study by researchers at New York University and Michigan State University brought the technological risks of fingerprint scanning to light.

The researchers used computer simulations to create “MasterPrints” real fingerprints from databases or synthetically created ones that can spoof one of the stored fingerprints in a scanner’s database to unlock a phone.

Although the study did not use real phones, instead using cropped images on the commercial verification software Verifinger, the findings were still alarming.

The researchers’ generated prints could match the real ones up to 65% of the time, even if the percentage with phones was much lower, it would still be a considerable risk.

Project Management Plan:

At all times or at any project the plan stage is the important and first stage.

We must have a good and a specific plan to product a good project, and that stage consist of some substages.

The Project manager creates the project management plan following inputs from the project team and the key stakeholders. A Project management plan is a formal, approved document that defines how the project is executed, monitored, and controlled. It may be a summary or a detailed document and may include baselines, subsidiary management plans, and other planning documents. This document is used to define the approach the project team takes to deliver the intended project management scope of the project.

As the work proceeds, the performance of the project is measured against the performance measurement baseline included in the project management plan. The scope baseline, schedule baseline, and cost baseline are collectively referred to as the performance measurement baseline. If there is a deviation from the baseline while the work is being done, the project manager deals with them by making adjustments to correct the deviation. If these adjustments fail to correct the deviations, then formal change requests to the baselines become necessary.

Project managers spend a substantial amount of time ensuring baselines are achieved, ensuring the project sponsor and the organization get the full benefits of their projects. Besides proper planning, a project manager’s abilities also lie in efficiently controlling the project and ensuring project deliverables are on time and that the project is completed per the project management plan.

Looking forward to enhancing your project management skills? Take our project management certification course today and take your project management career to new heights.

What Is a Project Management Plan Used For?

There are no shortcuts to a thorough understanding of your project than through a well-written, well-structured project plan document.

When compared to the project charter, which is a high-level strategy for the program, your project management plan breaks down that high-level perspective into the practical day-to-day operation of your project, addressing everything you must accomplish in order to achieve your project objectives.

Everything from timeframes to budgets, resources to deliverables, and more will be plotted out in a complete project plan, providing you with a roadmap of what needs fixing that you could use to manage and analyze your project.

What are the Components of a Project Management Plan?

A project management plan is a collection of baselines and subsidiary plans that include:

- Baselines for scope, schedule, and cost
- Management plans for scope, schedule, cost, quality, human resources, communications, risk, and procurement
- Requirement management plan
- Change management plan
- Configuration management plan
- Process improvement plan

The Importance of Project Management Planning:

There is a tremendous amount of planning that goes into any successful project. When you're a project manager, you'll have a lot to always remember, because of your project plan, you will know precisely what to concentrate on at each stage of the project, where to allocate resources and time, as well as what to watch out for in case things run over schedule or over budget.

To get the most out of a project, you need to put in a lot of effort upfront to create a project plan that will serve you well throughout the project's lifespan. Here are five reasons why project management planning is essential.

Project Overview:

Attendance tracking is vital in several settings, including the office, school, various events, and seminars, but also instances where you perform field work, or work from home.

You can analyze attendance tracking reports and records, to single out unjustified absences, but also consider ways to increase attendance in the future.

As with most tasks today, to track and check employee and student attendance, as well as track attendance at events, it is best to turn to software. An attendance tracker will help you easily track presence, as well as sort, group, organize, and analyze this data.

Project Scop:

# The scope of the project determined by the team leader and team members for overall the project in which we define the parts of project. Each part is assigned to team member which be in his responsibility.

Project phases or parts are defined as the following:

Phase 1: preliminary investigations

In this phase, we collect data with the data gathering techniques to determine the overall data to be used in the process of development in the project.

We also define the users of the application which is:

User (Learner): the person who wishes to have driving lessons. User (Coach or driving instructor): the person who delivers the service of learning.

Admin: the person who manages the application itself and responsible for updating the application.

Getting the project specification and needs for the development process.

Identify the needs for any users and the aim (goals of the application).

Provide a project plan and methodology specification for the entire project developing process.

Phase 2: system analysis:

- Making an analysis of the current system to be done.
- Delivering the scenario for each user dealing with the application with the mobile version.
- Develop use case diagrams according to the scenario echo for each scenario.
- Defining the operation made by each user.

Phase 3: system design:

- This is an important phase in which we define the system working design.
- We develop DFD (Data Flow Diagrams) describing the process of developing the application
- Developing ERD (Entity relationship diagram)

Phase 4: Implementation:

- In this phase, we will use programming language which will be flutter SDK for mobile application
- We will use the Firebase server for generating our database and will use SQLite for managing tables, relationships, and queries for caching data locally.

Phase 5: Testing:

- ❖ Using testing techniques (unit, white box, and black box) we will test both mobiles.
- ❖ Compatibility, usability and performance measurements will be applied for testing criteria.

Phase 6: Deploying:

- ❖ The key to success for every enterprise project is a well-thought-out plan. One of the biggest mistakes that most teams make is having practices in place that lead to last-minute scrambling. Due to this, team members are likely to miss important steps.

So, to ensure smooth deployment, a step-by-step process for bringing a project's final stage into production is a must. This is called a deployment plan.

- ❖ In general, deployment refers to moving an object to a place where some action can be performed on it. In the case of software development, deployment means making an application ready for delivery

Objectives:

- ❖ Our project has many objectives including:
    - Product a mobile App for both platforms Android and IOS
    - Making sure that the GUI “graphical user interface” of the App is well formatted and easy to work with it.
    - Product a strong and well content describing the database for mapping the users and their attendance.
    - Product a strong and confidential authentication and authorization specification for all App users to be able to enter to their accounts.
    - Making admin logging with administration tools to maintain the App core for future updates

Project Schedule:

- ❖ Time Estimation:

Project Phase	Time to Evaluate	Notes
Preliminary investigation and data gathering	2-week	____
Project Analysis	2-week	____
Project Design	2-week	____
implementation	4-week	Not actual
Testing Deploy	2-week	Not actual

Tools and Technologies:

Android Studio

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as primary IDE for native Android application development.

Android Studio was announced on May 16, 2013, at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8, which was released in June 2014. The “RST” stable build was released in December 2014, starting from version 1.0. The current stable version is 3.1.3 released in June 2018.

Android Studio includes a tool called Image Asset Studio that helps you generate your own app icons from material icons, custom images, and text strings. It generates a set of icons at the appropriate resolution for each pixel density that your app supports. Image Asset Studio places the newly generated icons in density-specific folders under the res/ directory in your project. At runtime, Android uses the appropriate resource based on the screen density of the device your app is running on.

Image Asset Studio helps you generate the following icon types:

- Launcher icons
- Action bar and tab icons
- Notification icons

Flutter

It is an open-source software development kit software developed by Google for building user interfaces for Android, iOS, Windows and Web applications.

The Filters framework was built from scratch and used to write and build Dart and C++ and it's still somewhat in its beta phase, though. The basis for developing user interfaces and collaborating with the

DART programming language to deal with back-end software processes.

The Filters framework has been improved and developed to make it a powerful practical tool to improve the speed and efficiency of applications, and this is a boon for organizations, developers and those looking to work on both platforms with less effort and cost.

The Filters framework helps designers and programmers build modern and attractive design applications through built-in, pre-written and ready-to-use packages and libraries, which will make your work much easier.

Flutter code compiles to ARM or Intel machine code as well as JavaScript, for fast performance on any device.

Deploy to multiple devices from a single codebase: mobile, web, desktop, and embedded devices.

Take control of your codebase with automated testing, developer tooling, and everything else you need to build production-quality apps.

Flutter is supported and used by Google, trusted by well-known brands around the world, and maintained by a community of global developers.

Build and iterate quickly with Hot Reload. Update code and see changes almost instantly, without losing state.

Control every pixel to create customized, adaptive designs that look and feel great on any screen.

It’s beautiful – you can easily use widgets provided by Flutter and personalize it to create a valuable UI for your customers (you can find examples of applications made with Flutter below).

Dart

is a programming language designed for client development, such as for the web and mobile apps? It is developed by Google and can also be used to build server and desktop applications.

It is an object-oriented, class-based, garbage-collected language with C-style syntax.

It can compile to either native code or JavaScript, and supports interfaces, mixins, abstract classes, reified generics, and type inference.

Dart was unveiled at the GOTO conference in Aarhus, Denmark, October 10–12, 2011, The project was founded by Lars Bak and Kasper Lund, Dart 1.0 was released on November 14, 2013.

Dart initially had a mixed reception, and the Dart initiative has been criticized by some for fragmenting the web, due to the original plans to include a Dart VM in Chrome. Those plans were dropped in 2015 with the 1.9 release of Dart to focus instead on compiling Dart to JavaScript.

Dart 2.0 was released in August 2018, with language changes including a sound type system.

Dart 2.6 introduced a new extension, dart2native, which extends native compilation to the Linux, macOS, and Windows desktop platforms. Earlier developers could create new tools using only Android or iOS devices. With this extension it also becomes possible to compose a program into self-contained executables. According to company representatives, it’s no longer necessary to have the Dart SDK installed, as the self-contained executables can now start running in a few seconds. The new extension is also integrated with the Flutter toolkit, making it possible to use the compiler on small services (for example, backend support).

Java

Java is a programming language and computing platform first released by Sun Microsystems in 1995. It has evolved from humble beginnings to power a large share of today's digital world, by providing the reliable platform upon which many services and applications are built. New, innovative products and digital services designed for the future continue to rely on Java, as well.

While most modern Java applications combine the Java runtime and application together, there are still many applications and even some websites that will not function unless you have a desktop Java installed. Java.com, this website, is intended for consumers who may still require Java for their desktop applications – specifically applications targeting Java 8. Developers as well as users that would like to learn Java programming should visit the dev.java website instead and business users should visit oracle.com/java for more information.

Is Java free to download?

Yes, Java is free to download for personal use.
Java is also free for development: developers can find all the development kits and other useful tools
at https://www.oracle.com/javadownload/.

Java is a general-purpose, class-based, object-oriented programming language designed for having lesser implementation dependencies. It is a computing platform for application development. Java is fast, secure, and reliable, therefore. It is widely used for developing Java applications in laptops, data centers, game consoles, scientific supercomputers, cell phones, etc.

Java Platform is a collection of programs that help programmers to develop and run Java programming applications efficiently.

Objective-C

Objective-C is the primary programming language you use when writing software for OS X and iOS. It’s a superset of the C programming language and provides object-oriented capabilities and a dynamic runtime. Objective-C inherits the syntax, primitive types, and flow control statements of C and adds syntax for defining classes and methods. It also adds language-level support for object graph management and object literals while providing dynamic typing and binding, deferring many responsibilities until runtime.

The majority of work in an Objective-C app occurs as a result of objects sending messages to each other. Often, these messages are defined by the methods declared explicitly in a class interface. Sometimes, however, it is useful to be able to define a set of related methods that aren't tied directly to a specific class.

Objective-C uses protocols to define a group of related methods, such as the methods an object might call on its delegate, which are either optional or required. Any class can indicate that it adopts a protocol, which means that it must also provide implementations for all of the required methods in the protocol.

It's common in Objective-C to use Cocoa or Cocoa Touch classes to represent values. The "NS-String" class is used for strings of characters, the "NS-Number" class for different types of numbers such as integer or floating point, and the "NS-Value" class for other values such as C structures. You can also use any of the primitive types defined by the C language, such as int, float or char.

Collections are usually represented as instances of one of the collection classes, such as "NS-Array", "NS-Set", or "NS-Dictionary", which are each used to collect other Objective-C objects.

Firebase

is a Backend-as-a-Service (Baas). It provides developers with a variety of tools and services to help them develop quality apps, grow their user base, and earn profit. It is built on Google’s infrastructure.

Firebase is categorized as a NoSQL database program, which stores data in JSON-like documents.

1. Authentication

It supports authentication using passwords, phone numbers, Google, Facebook, Twitter, and more. The Firebase Authentication (SDK) can be used to manually integrate one or more sign-in methods into an app.

2. Realtime database

Data is synced across all clients in real time and remains available even when an app goes offline.

3. Hosting

Firebase Hosting provides fast hosting for a web app; content is cached into content delivery networks worldwide.

4. Test lab

The application is tested on virtual and physical devices located in Google's data centers.

5. Notifications

Notifications can be sent with firebase with no additional coding.

Users can get started with firebase for free; more details can be found on the official website.

provides detailed documentation and cross-platform SDKs to help you build and ship apps on Android, iOS, the web, C++, and Unity.

Chapter 2

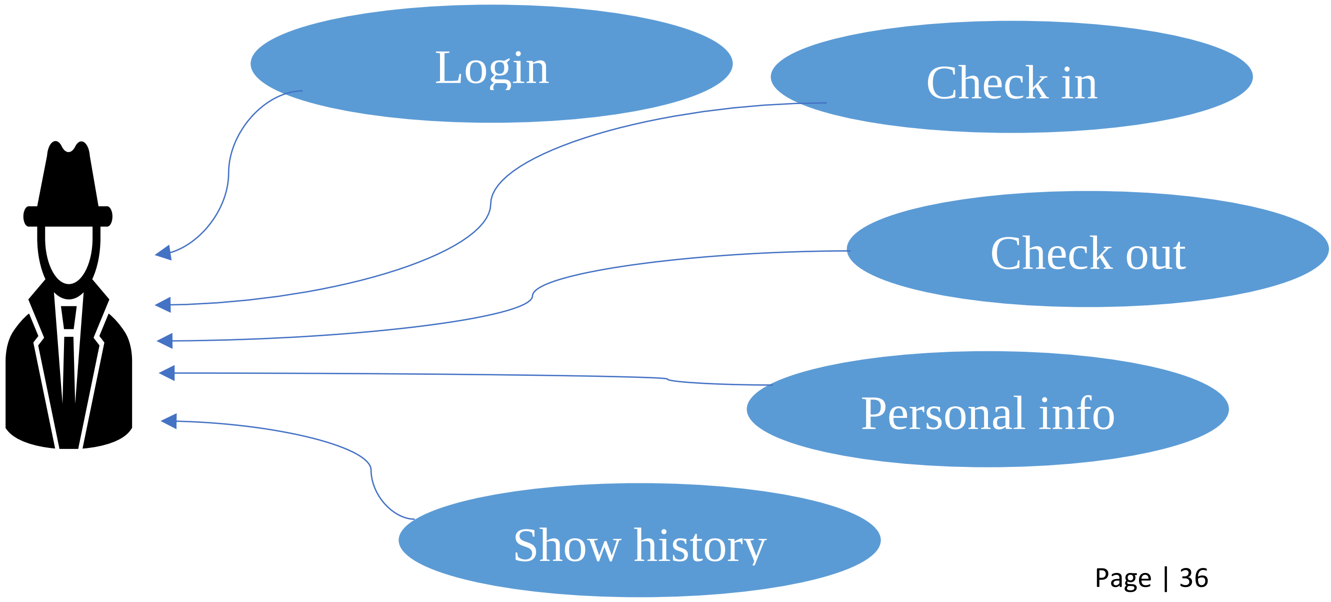
System Analysis

Data Modeling Diagram:

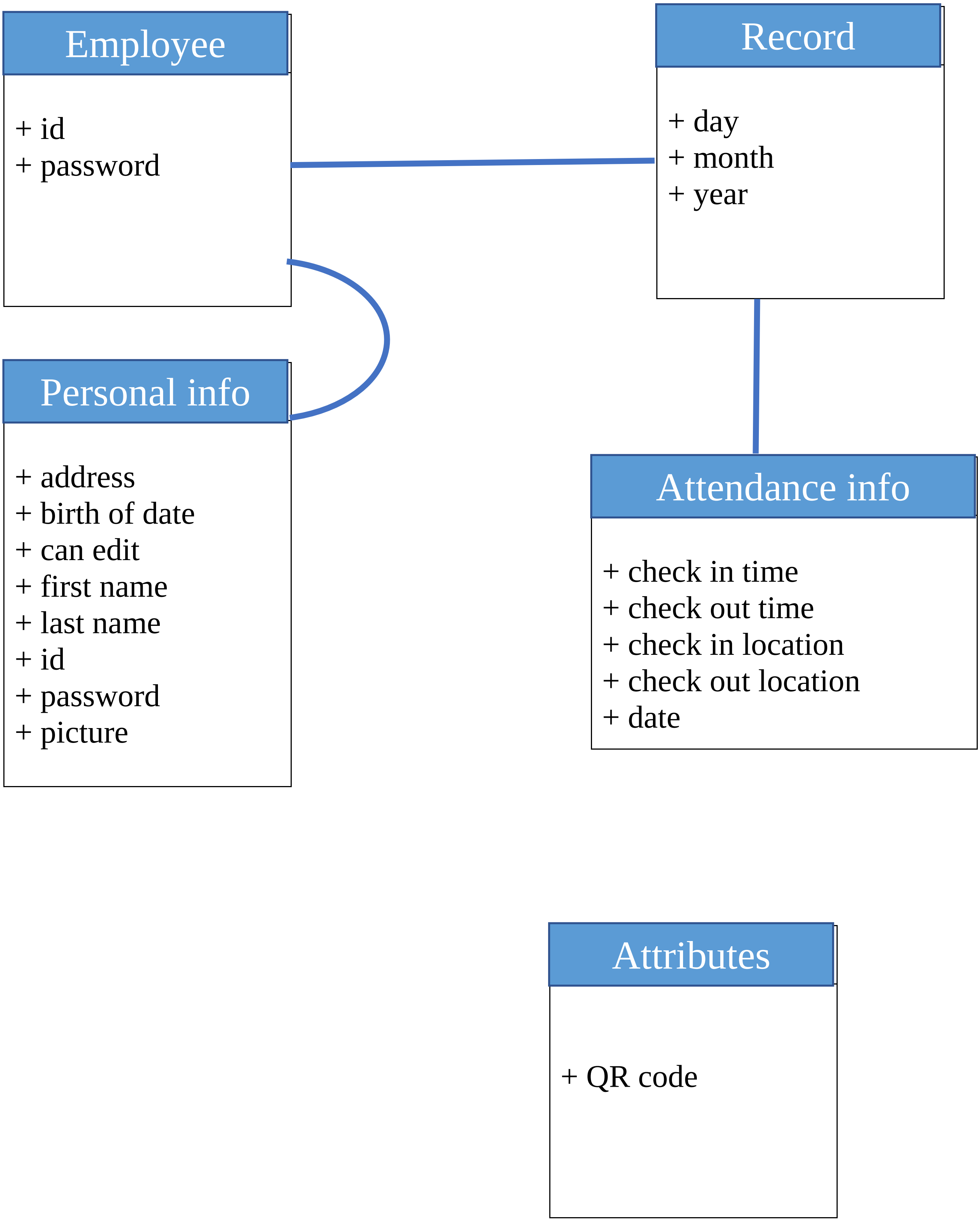
- ❖ Case Diagram, Case Scenarios:
  - o Login Case:
    - ➢ from beginning user will login to the system to be able to use it and check in & out himself.
    - ➢ This login by the credential that he had received it before.
    - ➢ And this credential consists of id & password.
    - ➢ No there any ability for users to registering by themselves.
    - ➢ The only way to registering is by admin of company.
  - o Check in and out cases:
    - ➢ The only reason from developing this App to help users to easy access and check in and out by themself.
    - ➢ At any time, all users can use App and check in and out along a day.
    - ➢ With checking in or out the time and users’ location are stored in the database.
    - ➢ In this operation user can use the side-to-act button to achieve it or use camera to scan the QR code.

- Personal Information case:
  - The only data that is stored for each user is id and password only and they stored by admin himself.
  - So, we get all users be able to enter their personal information like first name, last name, date of birth and address.
  - All users can enter their personal information for only one time.
  - If he makes any mistakes, he must connect with admin of company.

- Attendance History case:
  - From the good and important reason of this App is to get user able to show his daily and monthly attendance history.
  - So, user able to show his attendance by its time.
  - And he has a pick month button to choose any month.



Database classes:



Data Flow Diagram:

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually “say” things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That’s why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

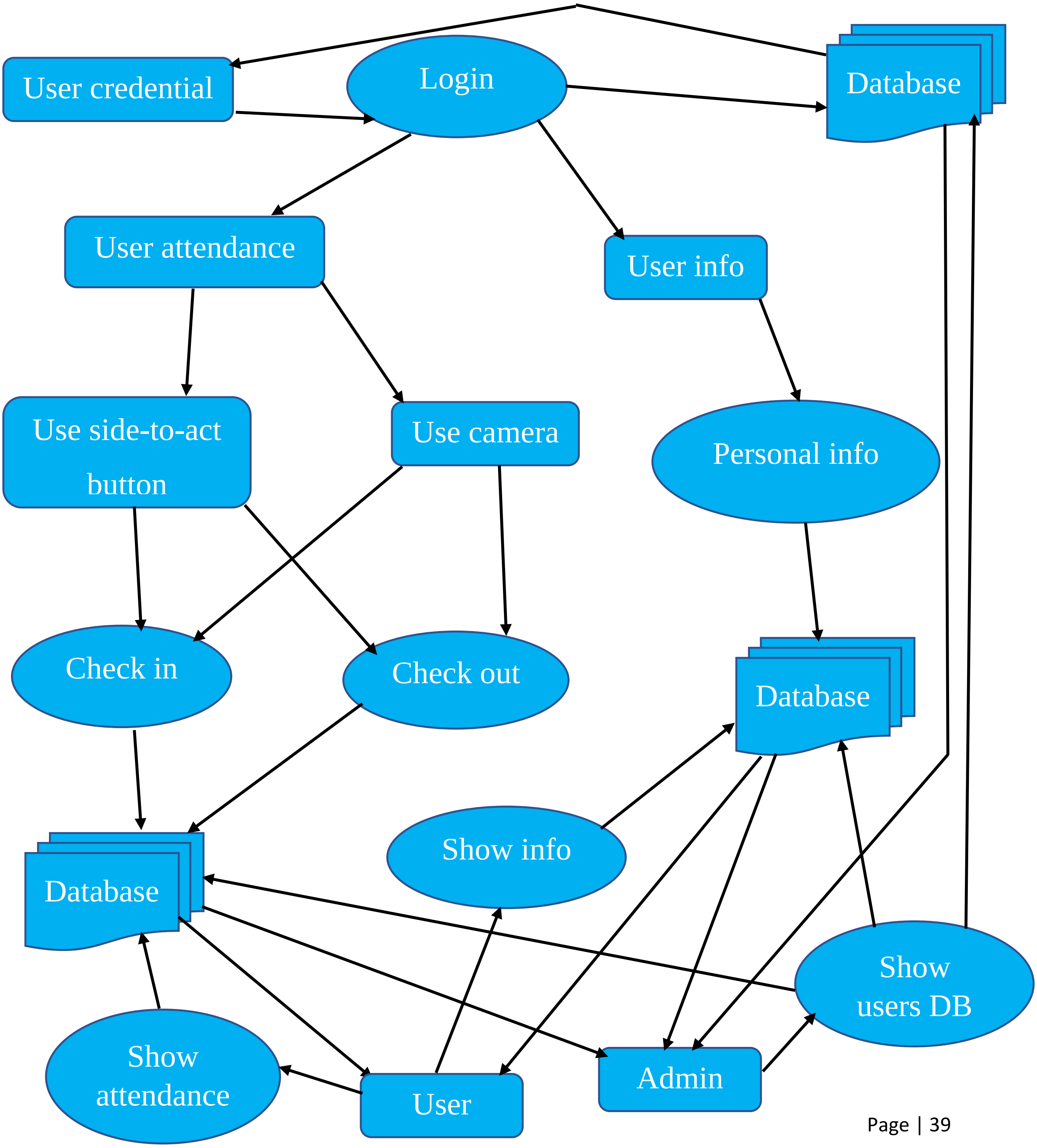
Data flow diagrams were popularized in the late 1970s, arising from the book *Structured Design*, by computing pioneers Ed Yourdon and Larry Constantine. They based it on the “data flow graph” computation models by David Martin and Gerald Estrin. The structured design concept took off in the software engineering field, and the DFD method took off with it. It became more popular in business circles, as it was applied to business analysis, than in academic circles.

Also contributing were two related concepts:

- Object Oriented Analysis and Design (OOAD), put forth by Yourdon and Peter Coad to analyze and design an application or system.
- Structured Systems Analysis and Design Method (SSADM), a waterfall method to analyze and design information systems. This rigorous documentation approach contrasts with modern

agile approaches such as Scrum and Dynamic Systems Development Method (DSDM.)

Three other experts contributing to this rise in DFD methodology were Tom DeMarco, Chris Gene and Trish Sarsen. They teamed up in different combinations to be the main definers of the symbols and notations used for a data flow diagram.



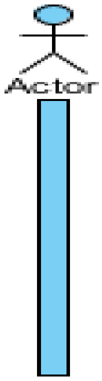
Sequence Diagram:

Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration. Sequence Diagrams are time focus, and they show the order of the interaction visually by using the vertical axis of the diagram to represent time what messages are sent and when.

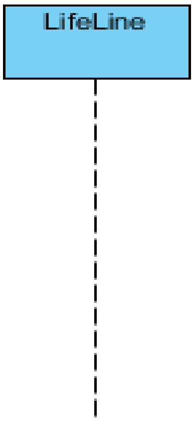
- ❖ Purpose of Sequence Diagram:
  - ➢ Model high-level interaction between active objects in a system.
  - ➢ Model the interaction between object instances within a collaboration that realizes a use case.
  - ➢ Model the interaction between objects within a collaboration that realizes an operation.
  - ➢ Either model generic interactions (showing all possible paths through the interaction) or specific instances of a interaction (showing just one path through the interaction).

Visual Representation:

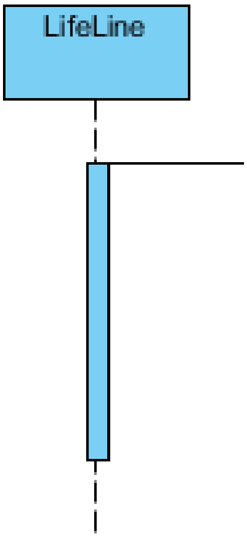
Actor



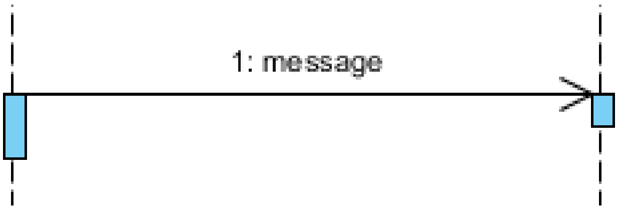
Lifeline



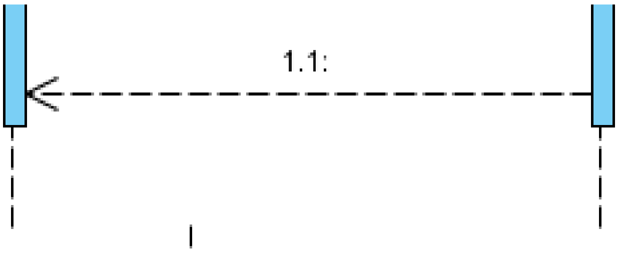
Activation



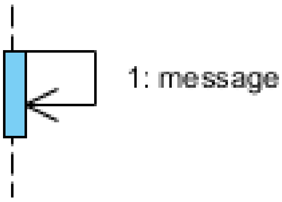
Call Message



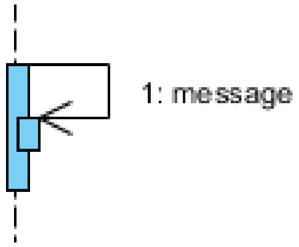
Return Message



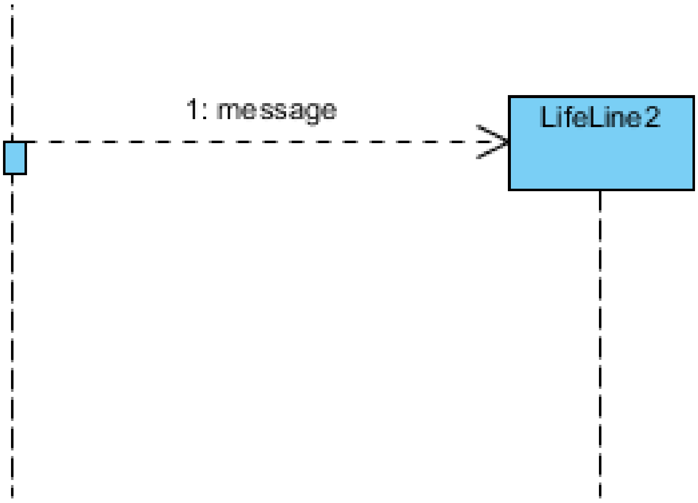
Self-Message



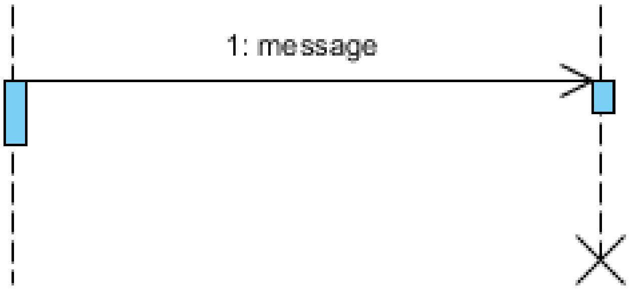
Recursive Message



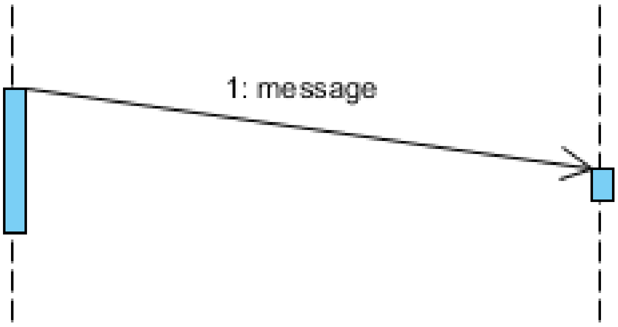
Create Message



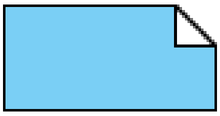
Destroy Message

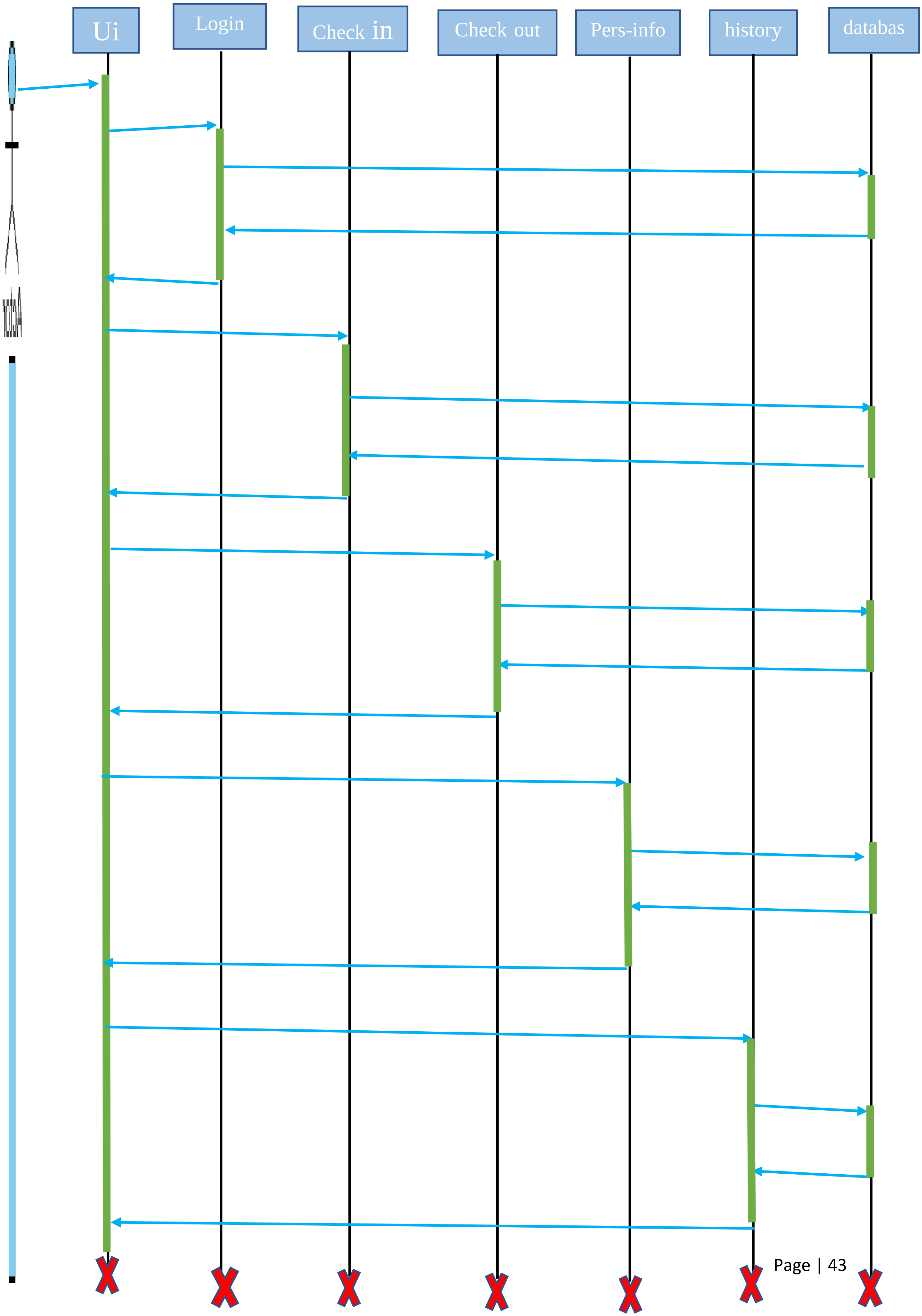


Duration Message



Note




Ui
Login
Check in
Check out
Pers-info
history
databas

System User Identifier:

- ❖ Employees:
  - ✓ they are the persons that will use the App to attend themselves and use the App features.
- ❖ Admin:
  - ✓ He is the person that responsible for the use database and monitoring their attendance and solve their problems.

Functional Requirements:

defines a function of a system or its component, where a function is described as a specification of behavior between inputs and outputs.

Functional requirements may involve calculations, technical details, data manipulation and processing, and other specific functionality that define what a system is supposed to accomplish.

Behavioral requirements describe all the cases where the system uses the functional requirements, these are captured in use cases. Functional requirements are supported by non-functional requirements (also known as "quality requirements"), which impose constraints on the design or implementation (such as performance requirements, security, or reliability). Generally, functional requirements are expressed in the form "system must do The plan for implementing functional requirements is detailed in the system design

❖ In our App like:

- ✓ The system must get user to login to the App to attend himself at any time and at all day.
- ✓ And allow users to enter home page and use its features.
- ✓ The App must allow users to check in at specific time.
- ✓ And allow them to check out also all day.
- ✓ And allow them to use camera to scan QR code to attend themselves.
- ✓ And get them enter their personal information by his data.
- ✓ The system must protect all user information like id, password, first name, last name, date of birth, address and his picture from damage or corrupted or hacking.
- ✓ The System must control the permission to access like admin have all
- ✓ privileges to do anything in the system and the instructor can confirm.
- ✓ The database must contain all user needed data to login.
- ✓ Allow them to show their attendance for a day and month.
- ✓ Appear error messages if:
    - He not entered id or password.
    - He entered the id or password wrong.
    - He does not enter his all-personal information.

Non-Functional Requirements:

is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors.

They are contrasted with functional requirements that define specific behavior or functions. The plan for implementing functional requirements is detailed in the system design. The plan for implementing non-functional requirements is detailed in the system architecture, because they are usually architecturally significant requirements.

define what a system is supposed to do, and non-functional requirements define how a system is supposed to be. Functional requirements are usually in the form of "system shall do <requirement>", an individual action or part of the system, perhaps explicitly in the sense of a mathematical function, a black box description input, output, process and control functional model or IPO Model. In contrast, non-functional requirements are in the form of "system shall be <requirement>", an overall property of the system as a whole or of a particular aspect and not a specific function. The system's overall properties commonly mark the difference between whether the development project has succeeded or failed.

Non-functional requirements are often mistakenly called the "quality attributes" of a system, however there is a distinction between the two. Non-functional requirements are the criteria for evaluating how a software system should perform and a software system must have certain quality attributes in order to meet non-functional requirements. So, when we say a system should be "secure", "highly-available", "portable", "scalable" and so on, we are talking about its quality attributes.

Look and feel requirements:

Apparently simple to use Approachable, so that people do not hesitate to use it.

Authoritative, so that users feel they can rely on it and trust it.

Professional looking, Professional looking and Cool.

Availability requirements:

The system must be available 99% of the year.

Failure Rate requirements:

The system must not be down more than 4 years.

Reliability requirements:

The system must not suffer more than

one failure per year.

Response Time requirements:

The system must response to the user in less than 1 Second.

Throughput requirements:

The system shall be able to handle and serve 40,000 users per day.

Security requirements:

The system's data administrator must be the only one who can access the user's data, Lesson data and instructor data.

An instructor can access his/her related lesson information

and related users' information.

All external communications between the System's data

server and Users must be encrypted.

Usability requirements:

The system must have a friendly graphical interface.

The system must send a Reminder message to the user to inform use.

The system must have (help menu) button on all the website's pages explain how to achieve common tasks.

Chapter 3

Design Considerations

Design Consideration:

- Hardware and Software environments:
  - Our project needs both environments but will need the software more than hardware.
  - The Software Environment consists of mobile from both platforms ANDROID and IOS but not able to buy them so we will depend on emulators for testing.
  - And software environment depends on technologies like java, objective-c and dart environments.
  - The Hardware Environment may be a real mobile phone for a real verify from both platforms ANDROID and IOS,
  - And may be machine for generation of QR codes.

- End-users’ characteristics:
  - The users and their phones must be able to be connecting with global internet for be able to use our App.
  - All the App services and operations not work without internet to connect to database for:
    - Check authorization and authentication by matching users’ credentials.
    - For get user to sore information of check in and out.
    - And to save and store his personal info.
    - And to help him to show his daily or monthly attendance.

Architectural strategies:

The architecture of a system describes its major components, their relationships (structures), and how they interact with each other. Software architecture and design includes several contributory factors such as Business strategy, quality attributes, human dynamics, design, and IT environment.

Goals of Architecture:

- The primary goal of the architecture is to identify requirements that affect the structure of the application. A well-laid architecture reduces the business risks associated with building a technical solution and builds a bridge between business and technical requirements.

Some of the other goals are as follows:

- Expose the structure of the system but hide its implementation details.
- Realize all the use-cases and scenarios.
- Try to address the requirements of various stakeholders.
- Handle both functional and quality requirements.
- Reduce the goal of ownership and improve the organization’s market position.
- Improve quality and functionality offered by the system.

- Improve external confidence in either the organization or system.

Limitations:

- Software architecture is still an emerging discipline within software engineering. It has the following limitations −
- Lack of tools and standardized ways to represent architecture.
- Lack of analysis methods to predict whether architecture will result in an implementation that meets the requirements.
- Lack of awareness of the importance of architectural design to software development.
- Lack of understanding of the role of software architect and poor communication among stakeholders.
- Lack of understanding of the design process, design experience and evaluation of design.

Role of Software Architect:

- A Software Architect provides a solution that the technical team can create and design for the entire application. A software architect should have expertise in the following areas.

Used algorithms:

The scheduling of tasks and the allocation of resources in medium to large-scale development projects are an extremely hard problem and is one of the principal challenges of project management due to its sheer complexity. As projects evolve any solutions, either optimal or nearby optimal must be continuously scrutinized in order to adjust to changing conditions.

Brute force exhaustive or branch-and-bound search methods cannot cope with the complexity inherent in finding satisfactory solutions to assist project managers.

Most existing project management (PM) techniques, commercial PM tools, and research prototypes fall short in their computational capabilities and only provide passive project tracking and reporting aids.

Project managers must make all major decisions based on their individual insights and experience, must build the project database to record such decisions and represent them as project nets, then use the tools to track progress, perform simple consistency checks, analyze the project net for critical paths, etc., and produce reports in various formats such as Gantt or Pert charts. Our research has developed a new technique based on genetic algorithms (GA) that automatically determines, using a programmable goal function, a near-optimal allocation of resources and resulting schedule that satisfies a given task structure and resource pool.

We assumed that the estimated effort for each task is known a priority and can be obtained from any known estimation method such as COCOMO.

Based on the results of these algorithms, the software manager will be able to assign tasks to staff in an optimal manner and predict the corresponding future status of the project, including an extensive analysis of the time-and-cost variations in the solution space.

Our experiments utilized Wall's “GALib” as the search engine.

The algorithms operated on a richer, refined version of project management networks derived from Chao's seminal work on GA based Software Project Management Net (SPMnet). Generalizing the results of Chao's solution, the new GA algorithms can operate on much more complex scheduling networks involving multiple projects. They also can deal with more realistic programmatic and organizational assumptions.

The results of the GA algorithm were evaluated using exhaustive search for five test cases. In these tests our GA showed strong scalability and simplicity.

Its orthogonal genetic form and modularized heuristic functions are well suited for complex conditional optimization problems, of which project management is a typical example.

Reuse of software components:

Reusing existing components and building reusable components have been natural software engineering activities since the earliest improvements in programming languages. Software design methods have always dealt implicitly with reuse to minimize development costs while achieving all the other required attributes of performance, feature set, and quality.

Reuse achieves undeserved importance within the software engineering community only because we don't do it as well as we should. In all other engineering and manufacturing disciplines, reuse is an underlying assumption, not some necessary technological breakthrough.

I try to treat reuse as a mundane part of achieving a return on investment.

Common architectures, common processes, precedent experience, and common environments are all instances of reuse.

In general, things get reused for economic reasons.

Therefore, the key metric in identifying whether a component (or a class of components, or a commercial product) is truly reusable is to see whether some organization is making money on it.

Without this economic motive, reusable components are rare. Beware of "open" reuse libraries sponsored by nonprofit organizations.

They lack economic motivation, trustworthiness, and accountability for quality, support, improvement, and usability.

Most truly reusable components of value are transitioned to commercial products supported by organizations with the following

- ❖ characteristics:
  - They have an economic motivation for continued support.
  - They take ownership of improving product quality, adding new features, and transitioning to new technologies.
  - They have a sufficiently broad customer base to be profitable.

Project Management:

Management strategies:

- The concept of project strategy - referring to the strategy of a single project - has remained ambiguous in existing studies. In this research, we review literature from multiple viewpoints to develop a novel definition and interpretation of the project strategy concept.
- Our definition is used to derive different alternative project strategies from literature, characterized by two important dimensions in a project's environment.
- project's independence and number of strong project stakeholder organizations.
- We introduce four types of strategies for a project along these two dimensions:
- obedient servant, independent innovator, flexible mediator, and strong leader.
- Existing research using the project strategy concept mostly assumes that there is one strong parent organization for a project; indeed, the parent is assumed to dictate an image of its strategy to the project, and the project is assumed to take an obedient servant's role, to serve as a tactical vehicle that becomes a mere part of its parent organization and the parent's strategic scheme.
- Our project strategy definition and the four project strategy types allow a more open interpretation of the content of

alternative environment dependent project strategies as well as the processes of strategy formulation and implementation.

- The wider concept of project strategy introduced in this paper recognizes more widely the various positions that a single project may take in its environment.
- This way, our paper contributes even to development of new and context-specific project management bodies of knowledge in the future.
- The paper suggests empirical research and further conceptual research on detailed contents of different project strategies.
- Tasks:
  - Preliminary investigations.
  - System analysis.
  - System design.
  - Implementation.
  - Testing.
  - Deploying (maintain and release).

- Resource risk:
  - Resource risk is the chance that you will fail to meet a goal due to a lack of resources.
  - Resources can include financing, time, skilled workers and need to achieve a particular goal.
  - anything else you need to achieve a particular goal.

- A project that can't secure a skilled technician within the scheduled time frame.
- A project that's delayed due to slow budget approval processes.
- The project would have meaningless if no users on it, it should implement rapidly.

➢ Tasks descriptions, resources and risk:

- Tasks of the project management are many tasks first we should have preliminary investigations which will be data gathering and requirements specifications.
- In this phase we build the knowledge base for all next phases.
- The next phase will be the design phase that we will decide the input and output of the system after processing.
- The design task also will have the system (application) flow of execution and execution scenarios that users and learners may do on the system.
- The next task will be system implementation which will be converting all design plans by using programming languages or development tools that build the system.
- After that will be testing which will be testing all functions of the system by testing inputs and functionality of the system.

Development Method:

As we had shown in the introduction, we will build a mobile app for both platforms ANDROID and IOS, so we need a powerful and speed method to use it to develop this application.

So, we will use Agile.

What is agile?

Agile is an iterative approach to project management and software development that helps teams deliver value to their customers faster and with fewer headaches. Instead of betting everything on a "big bang" launch, an agile team delivers work in small, but consumable, increments. Requirements, plans, and results are evaluated continuously so teams have a natural mechanism for responding to change quickly.

Whereas the traditional "waterfall" approach has one discipline contribute to the project, then "throw it over the wall" to the next contributor, agile calls for collaborative cross-functional teams. Open communication, collaboration, adaptation, and trust amongst team members are at the heart of agile. Although the project lead or product owner typically prioritizes the work to be delivered, the team takes the lead on deciding how the work will get done, self-organizing around granular tasks and assignments.

Agile isn't defined by a set of ceremonies or specific development techniques. Rather, agile is a group of methodologies that demonstrate a commitment to tight feedback cycles and continuous improvement.

Why chooses agile?

Teams choose agile so they can respond to changes in the marketplace or feedback from customers quickly without derailing a year's worth of plans. "Just enough" planning and shipping in small, frequent increments lets your team gather feedback on each change and integrate it into future at minimal cost.

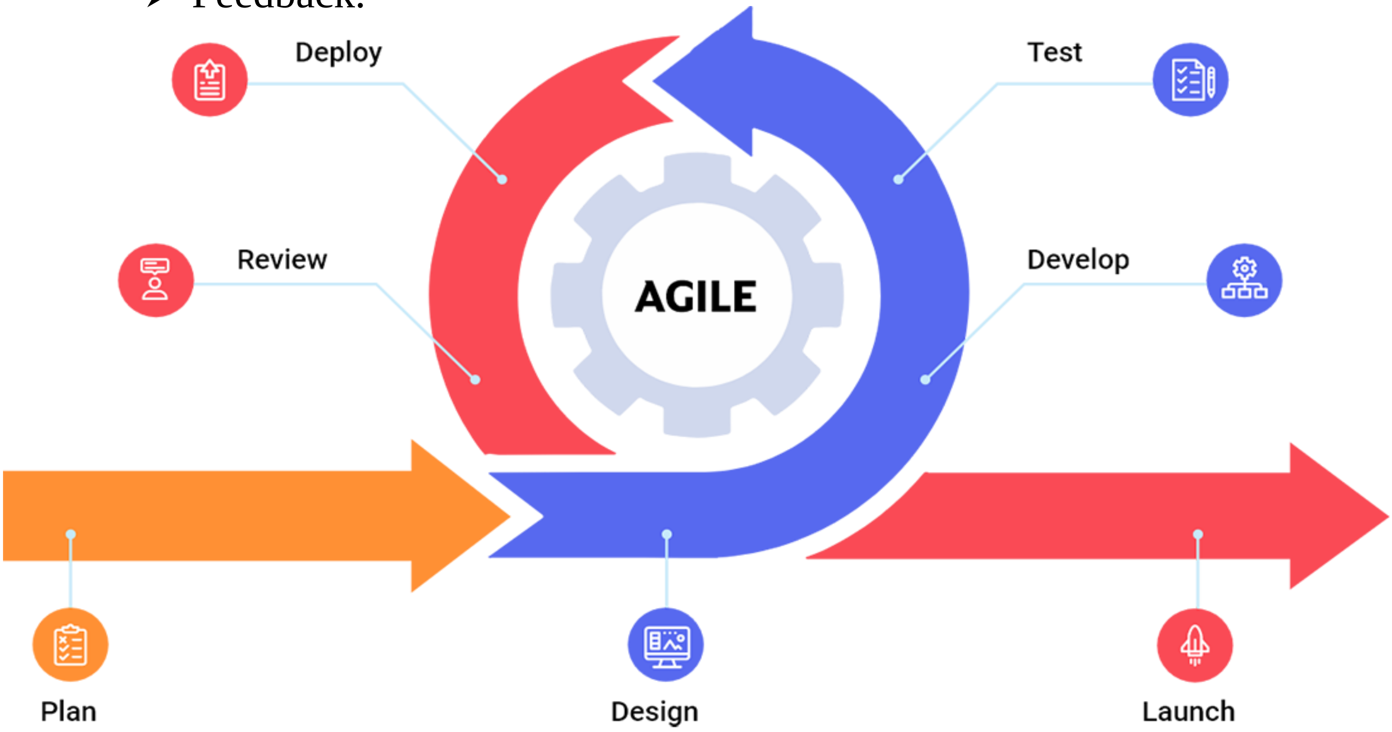
But it's not just a numbers game—first and foremost, it's about people. As described by the Agile Manifesto, authentic human interactions are more important than rigid processes. Collaborating with customers and teammates is more important than predefined arrangements. And delivering a working solution to the customer's problem is more important than hyper-detailed documentation.

An agile team unites under a shared vision, then brings it to life the way they know is best. Each team sets their own standards for quality, usability, and completeness. Their "definition of done" then informs how fast they'll churn the work out. Although it can be scary at first, company leaders find that when they put their trust in an agile team, that team feels a greater sense of ownership and rises to meet (or exceed) management's expectations.

Agile Structure:

In agile each project consists of some springs each spring will consists of as following:

- Plan.
- Design.
- Development.
- Testing.
- Release.
- Feedback.



For each spring we first will make priority backing or wish list according to our problems which will be collected, arranging them, and defining the goals.

Then each member of team will develop the that he will work on it.

Before all the above we must define important principle for agile it is:

Scrum:

Scrum is a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.

Scrum is a lightweight framework that helps people, teams and organizations generate value through adaptive solutions for complex problems. Scrum co-creators Ken Schwarber and Jeff Sutherland have written The Scrum Guide to explain Scrum clearly and succinctly. This Guide contains the definition of Scrum. This definition consists of Scrum's accountabilities, events, artifacts, and the rules that bind them together.

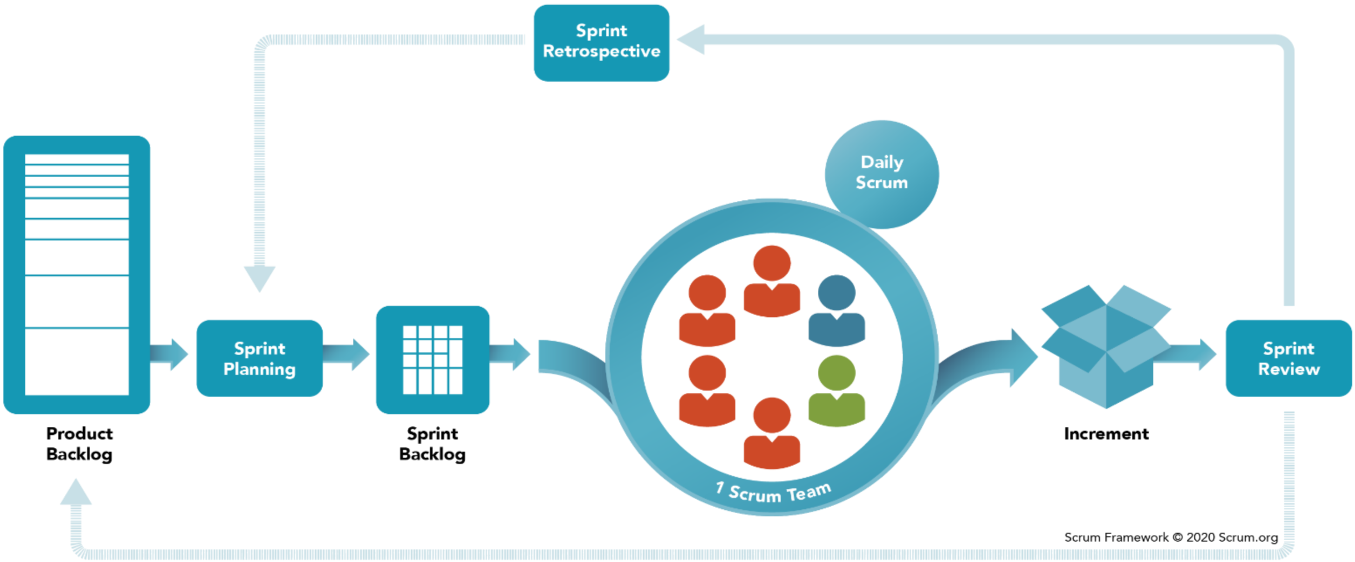
In a nutshell, Scrum requires a Scrum Master to foster an environment where:

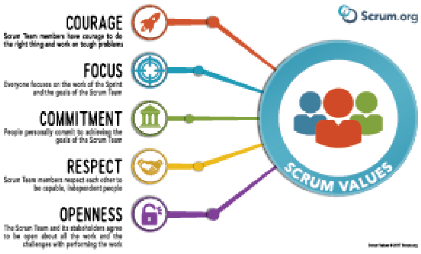
- A Product Owner orders the work for a complex problem into a Product Backlog.
- The Scrum Team turns a selection of the work into an Increment of value during a Sprint.
- The Scrum Team and its stakeholders inspect the results and adjust for the next Sprint.
- Repeat…

The Scrum Framework:

Scrum is simple, It is the opposite of a big collection of interwoven mandatory components, Scrum is not a methodology, Scrum implements the scientific method of empiricism, Scrum replaces a programmed algorithmic approach with a heuristic one, with respect for people and self-organization to deal with unpredictability and solving complex problems.

The below graphic represents Scrum in Action as described by Ken Schwarber and Jeff Sutherland in their book Software in 30 Days taking us from planning through software delivery.




Scrum.org
COURAGE
Scrum Team members have courage to do the right thing and work on tough problems
FOCUS
Everyone focuses on the work of the Sprint and the goals of the Scrum Team
COMMITMENT
People personally commit to achieving the goals of the Scrum Team
RESPECT
Scrum Team members respect each other to be capable, independent people
OPENNESS
The Scrum Team and its stakeholders agree to be open about all the work and the challenges with performing the work
SCRUM VALUES

The Scrum Team:

The fundamental unit of Scrum is a small team of people, a Scrum Team, The Scrum Team consists of one Scrum Master, one Product Owner, and Developers.

Within a Scrum Team, there are no sub-teams or hierarchies, It is a cohesive unit of professionals focused on one objective at a time, the Product Goal.

Chapter 4

System Design

System Architecture and Program Flow:

Our system architecture is divided into specific parts:

- User: the application user will use the GUI and get all application features.
  And we had made the GUI simple and easy for using and we had made it for all kind of people to be able to use it easily.

- Application Server: it will host the application files and software with global access depends on the roles we define by user that may seek for use the application.
  And this server will serve all application missions.

- Database Server: that holds the database for application, will store the data of checking in and out, store user personal information, show him his attendance history and others database.

Major Modules:

The system has major modules like:

- User Module:
  This module is handling users and their relations describing the user activities, attributes, roles, and contributions.

- Checking Module:

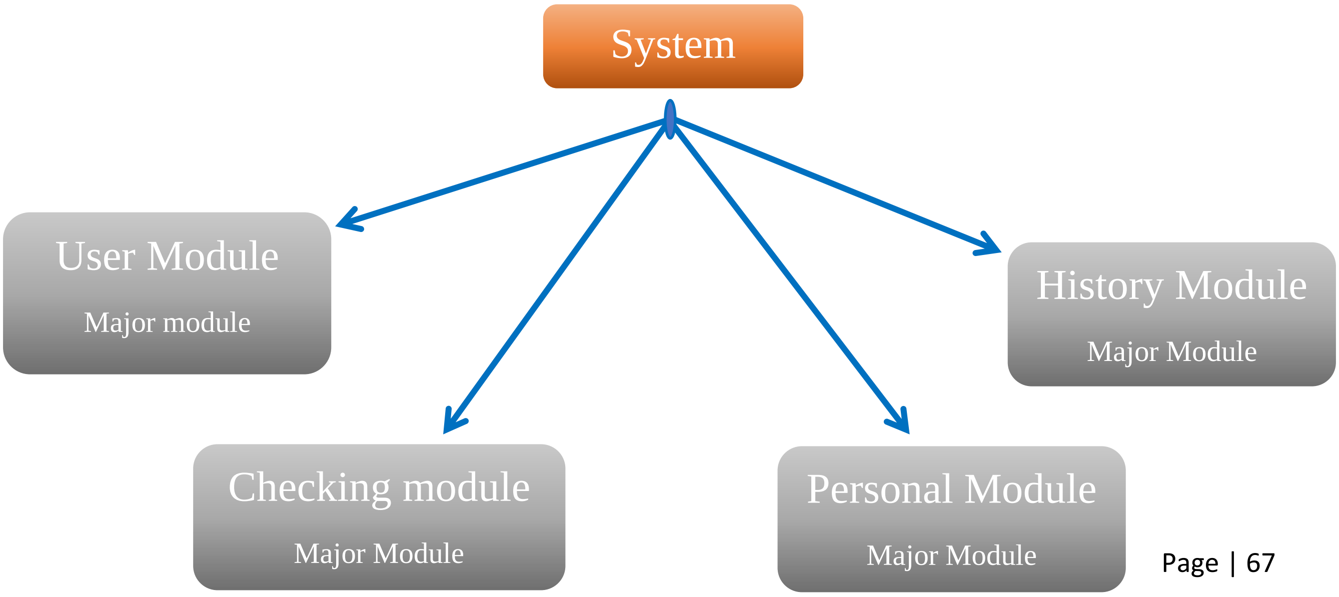
  This is considered the main module of the system, this module is designed to describe the user attendance, from checking in or out, that is dependent on his time and location, and this module to show its activities and its relationship between it and the users, and its attributes like time and location.

- Personal Information Module:

  This part of the modulation for description the user personal info and user activities to achieve this mission.

- History Module:

  This part of the history to get user be able to show his stored database of his attendance, and it has some features to help him to benefit from it like all information about the day and time and location, and option to choose the month if user want to change it.



Sub-Modules:

Sure, there is sub-modules from the major module, and we will show them now:

- User Module:
  - Login to the application to use its content.
  - Go to home screen and use side-to-act button to check in and out to attend himself.
  - Or he can use scanning part by clicking on camera area.
  - Ha can go to personal information screen to enter his personal information.
  - He can go to history screen to show all his attendance days at any time that he had attended before.

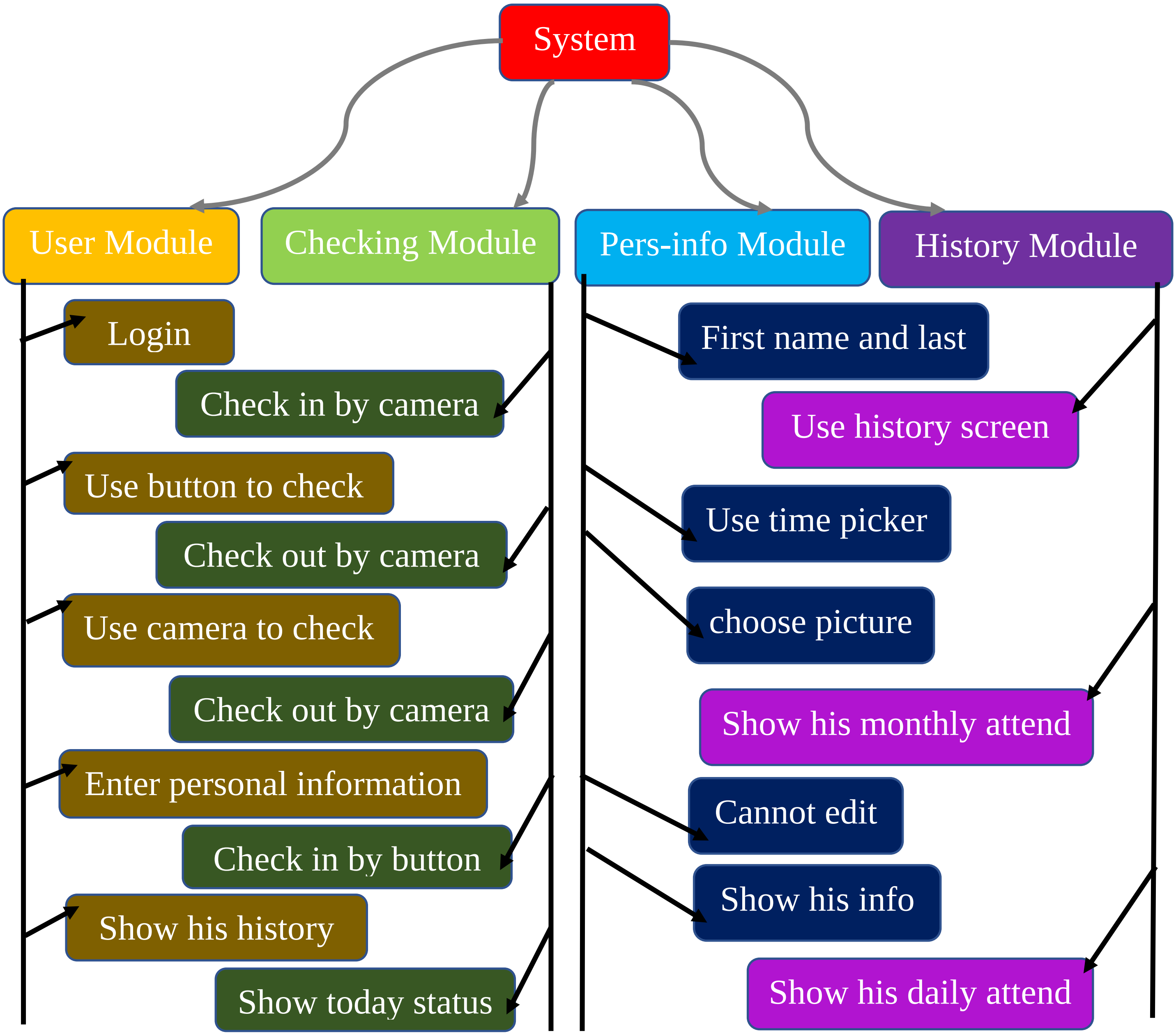
- Checking Module:
  - Can checking in himself at any time.
  - Can checking out himself at any time also.
  - Can use button to check himself.
  - Can use camera to check.
  - Can show his attendance time and location.

- Personal Information Module:
  - He can enter his first name and last name.
  - He can choose his birthday by time picker.

- Can enter and choose his personal picture.
- And he cannot edit his information after saving operation.
- He can only show his personal information.

➢ History Module:

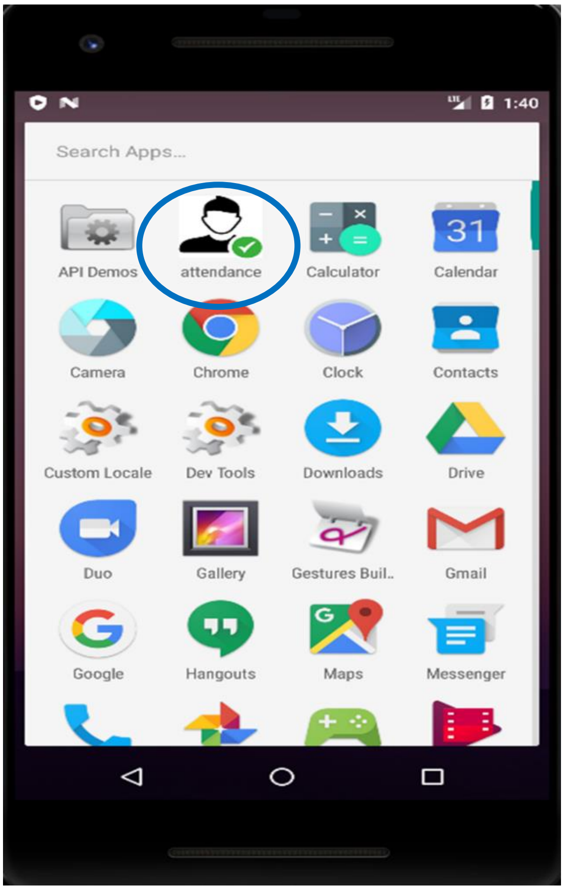
- User can show his daily attendance.
- Can show his monthly attendance.
- Can show his attendance at a specific previous day or month.



How is our application work?

❖ App Icon:

It is tool to tell user about the application instead of names.



It is the best solution for get user be interactive with the App.

❖ Splash Screen:

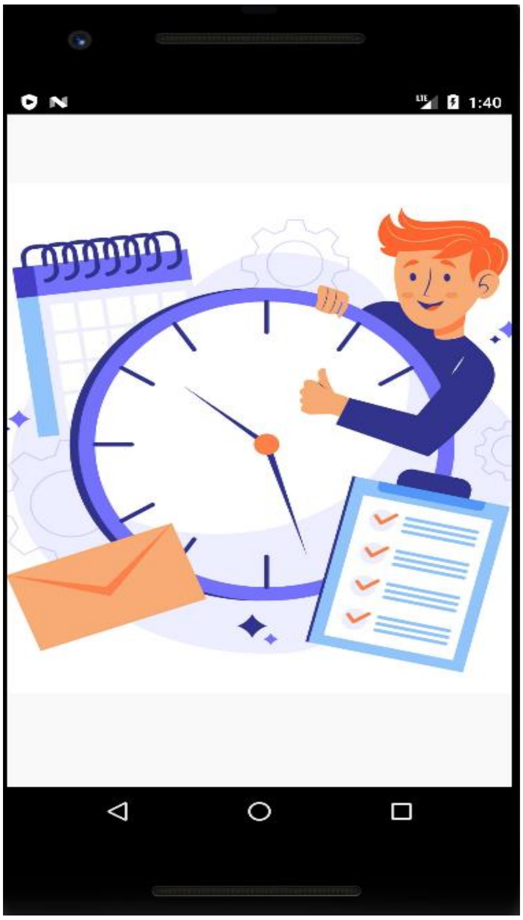
is a graphical control element consisting of a window containing an image, a logo, and the current version of the software?

A splash screen can appear while a game or program is launching. A splash page is an introduction page on a website.

A splash screen may cover the entire screen or web page; or may simply be a rectangle near the center of the screen or page.

The splash screens of operating systems and some applications that expect to be run in full screen usually cover the entire screen.

Purpose Splash screens are typically used by particularly large applications to notify the user that the program is in the process of loading. They provide feedback that a lengthy process is underway.



Occasionally, a progress bar within the splash screen indicates the loading progress.

A splash screen disappears when the application's main window appears. Splash screens may be added for a period and then replaced anew.

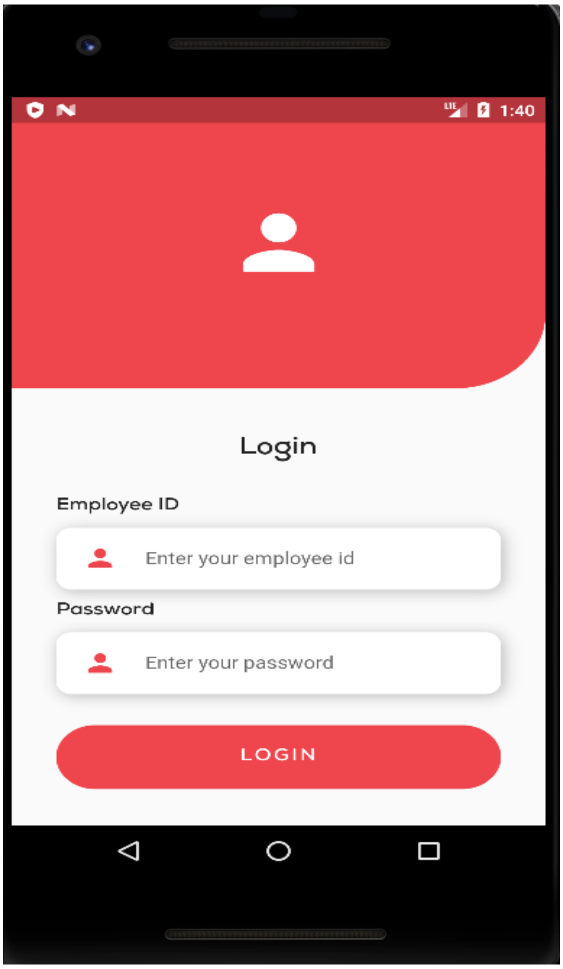
Splash screens typically serve to enhance the look and feel of an application or web site, hence they are often visually appealing. They may also have animations, graphics, and sound.

- Login Screen:

  It is the authenticity of all application, and users must use it carefully.

  the process by which an individual gains access to a computer system by identifying and authenticating themselves.

The user credentials are typically some forms of username and a matching password, and these credentials themselves are sometimes referred to as a login (or logon, sign-in, sign-on).



1:40

Login

Employee ID

Enter your employee id

Password

Enter your password

LOGIN

In practice, modern secure systems often require a second factor such as email or SMS confirmation for extra security.

Social login allows a user to use existing user credentials from a social networking service to sign in to or create an account on a new website.

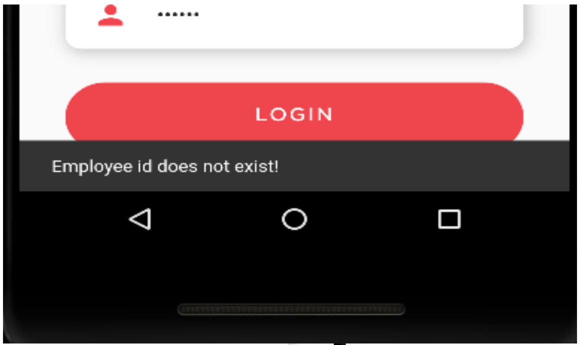
Logging in is usually used to enter a specific page, website, or application, which trespassers cannot see.

Once the user is logged in, the login token may be used to track what actions the user has taken while connected to the site.

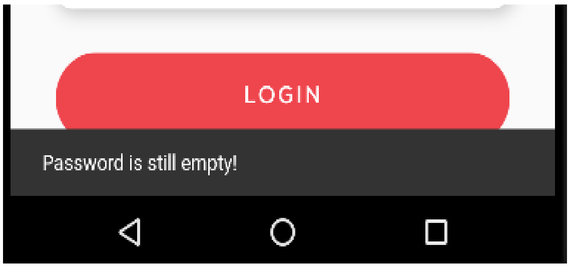
Logging out may be performed explicitly by the user taking some actions, such as entering the appropriate command or clicking a website link label as such.

It can also be done implicitly, such as by the user powering off his or her workstation, closing a web browser window, leaving a website, or not refreshing a website within a defined period.

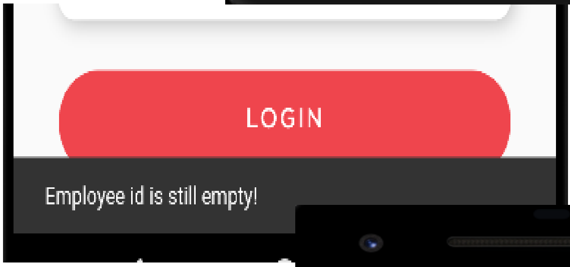
- So, in this app we do not permit users to register themselves, but we register them by the admin of compony.
- So, after using app by users they must receive their information from company like id and password.
- Adding... we absolutely help users so we put errors messages to help them at logging in.



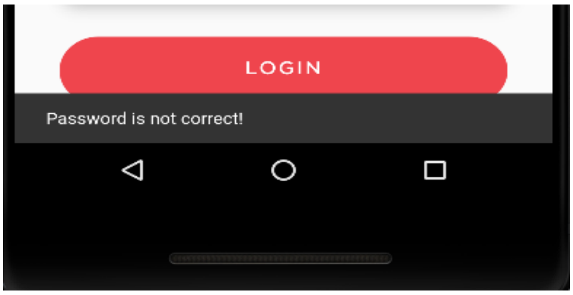
Employee id does not exist!



Password is still empty!

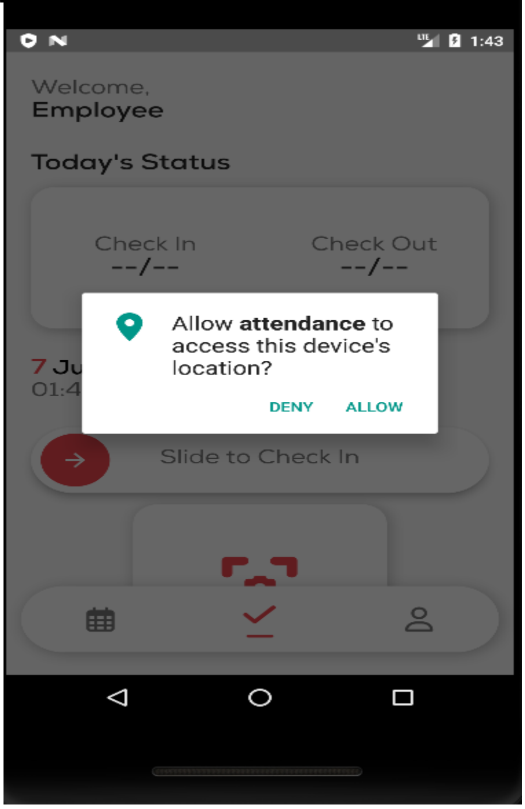


Employee id is still empty!



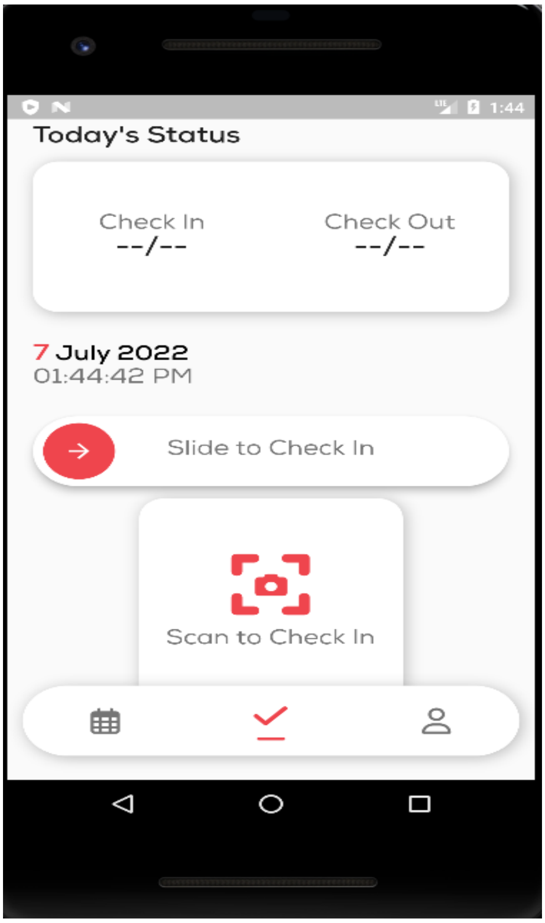
Password is not correct!

- After that user must allow application to use mobile location service to use it to store user location.



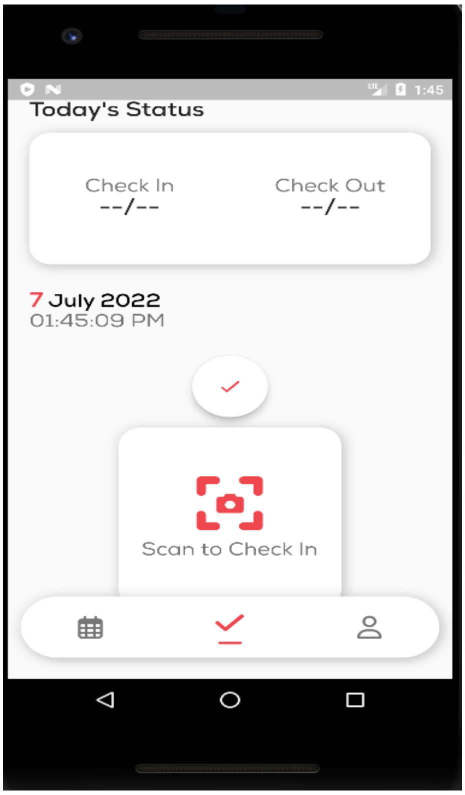
Allow **attendance** to access this device's location?

❖ Home Screen:



- start screen is the main screen on a device or computer program. Home screens are not identical because users rearrange icons as they please, and home screens often differ across mobile operating systems.
- Almost every smartphone has some form of home screen, which typically displays links to applications, settings, and notifications.
- In our application get home screen as following: part for user today status to tell him about what he will do or what is he did.
- Then part of the checking in and checking out.
- Then side-to-act button to help users to check in and out easily.
- Then location part it is still unactive until user checking in or out.
- Then camera for scanning QR code instead of use button.

Checking in interaction:



1:45

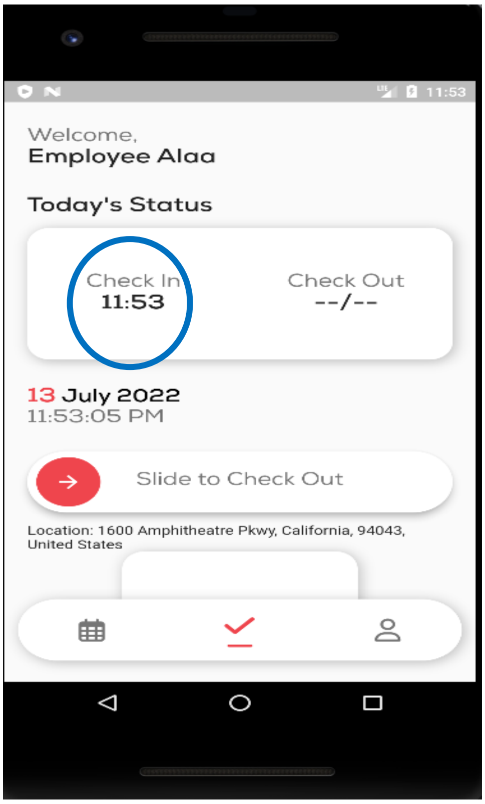
Today's Status

Check In
--/--

Check Out
--/--

7 July 2022
01:45:09 PM

Scan to Check In



11:53

Welcome,
Employee Alaa

Today's Status

Check In
11:53

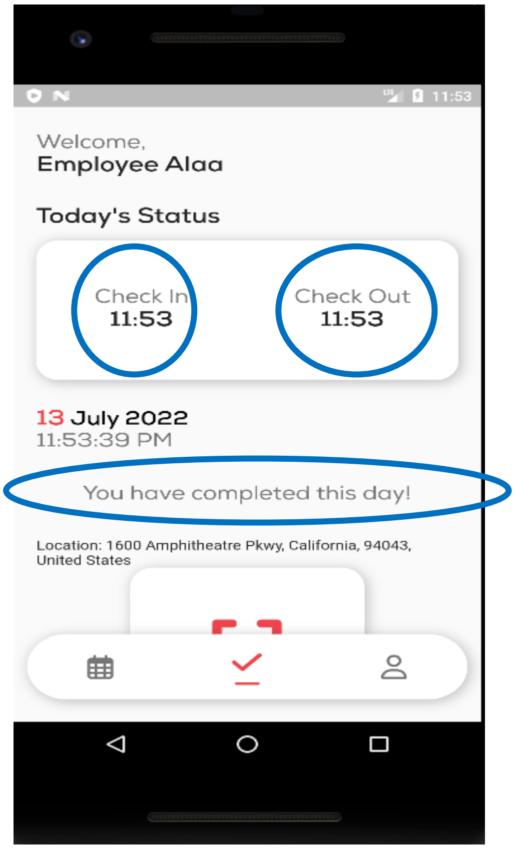
Check Out
--/--

13 July 2022
11:53:05 PM

Slide to Check Out

Location: 1600 Amphitheatre Pkwy, California, 94043, United States

Checking out interaction:



11:53

Welcome,
Employee Alaa

Today's Status

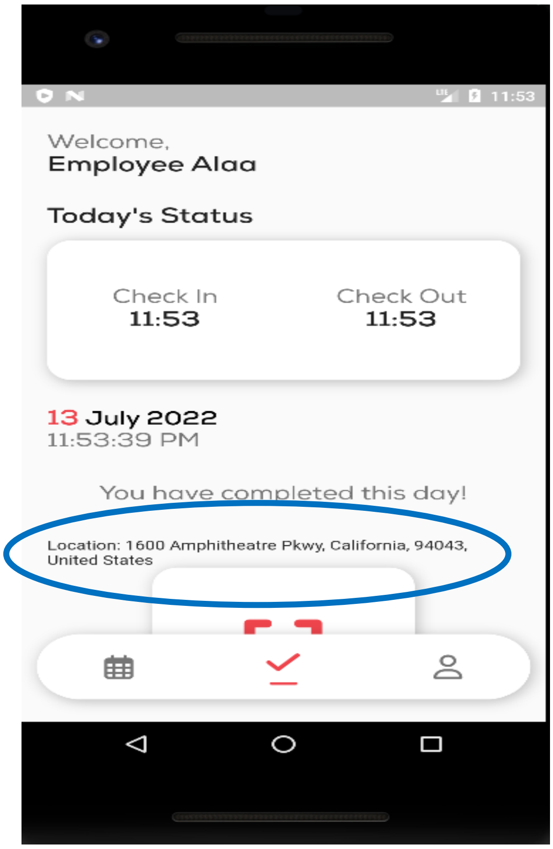
Check In
11:53

Check Out
11:53

13 July 2022
11:53:39 PM

You have completed this day!

Location: 1600 Amphitheatre Pkwy, California, 94043, United States



11:53

Welcome,
Employee Alaa

Today's Status

Check In
11:53

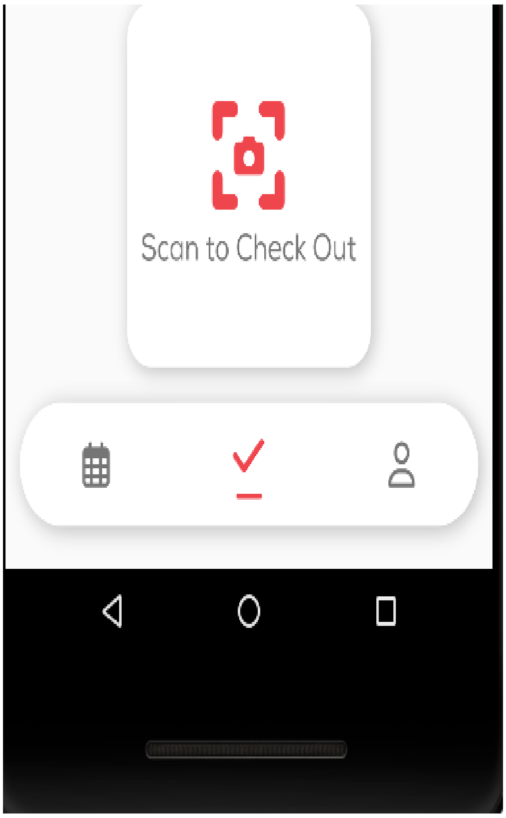
Check Out
11:53

13 July 2022
11:53:39 PM

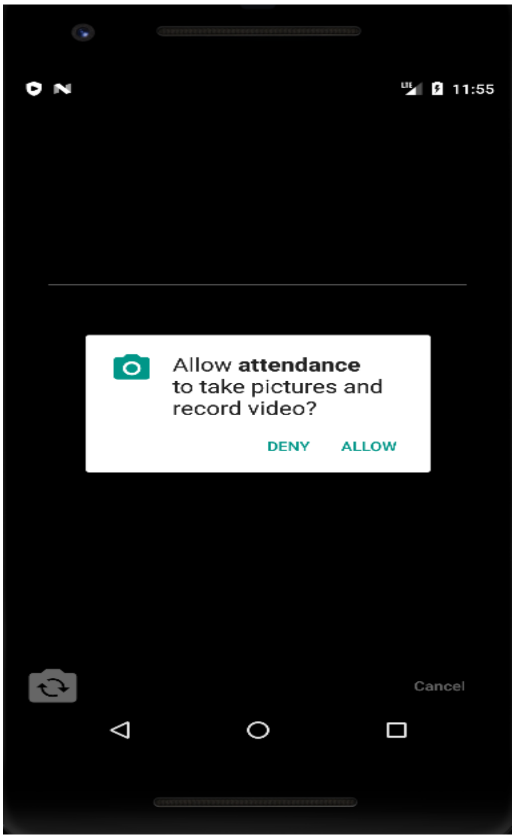
You have completed this day!

Location: 1600 Amphitheatre Pkwy, California, 94043, United States

Using camera to scan user must permit to use camera.

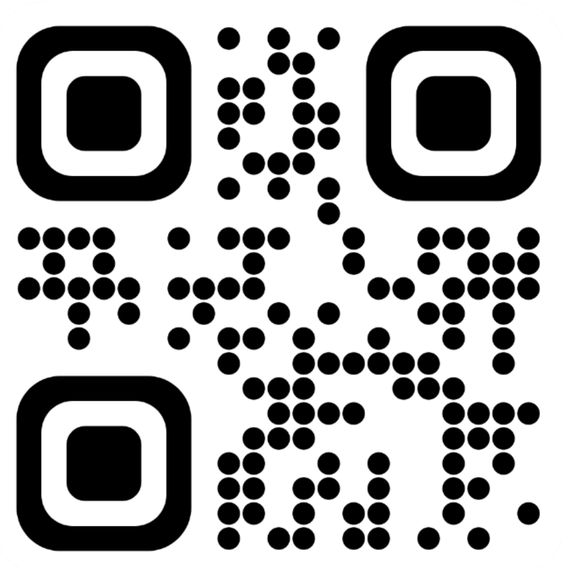


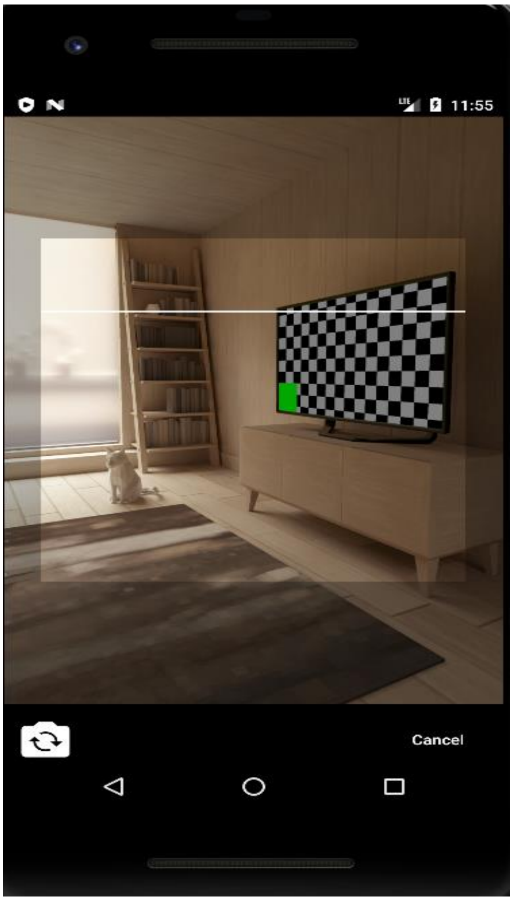
Scan to Check Out



Allow **attendance** to take pictures and record video?

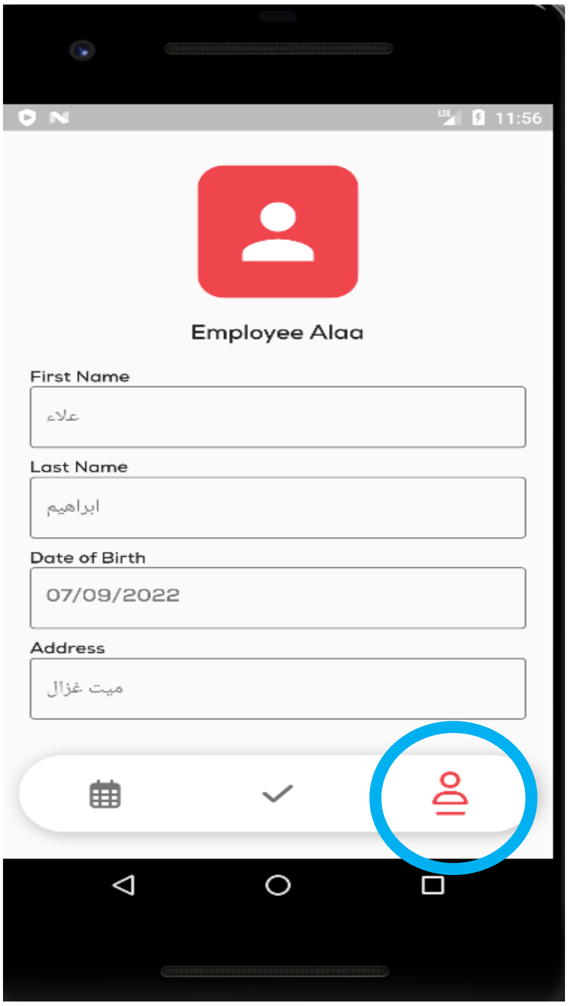
The QR code is stored before that in the database, all need to be matching with database to get user checked.





❖ Personal Information Screen:

- In our application personal information is leaved empty for user to fill it by his personal information.
- User can fill it as its content like first name, last name, date of birth by time picker button, his address and finally his personal picture.
- User can enter his information for one time, and if there are errors must he call admin of company.
- But all users have ability to show their information.



Employee Alaa

First Name: علاء

Last Name: ابراهيم

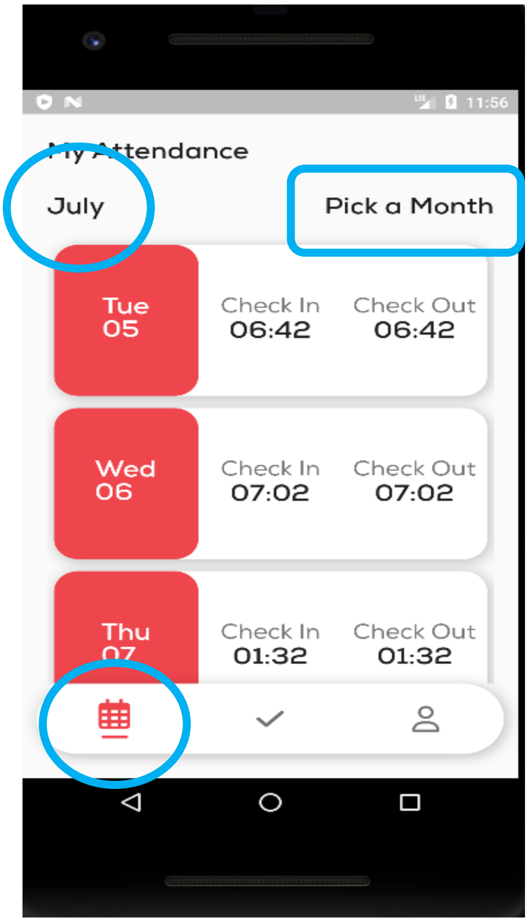
Date of Birth: 07/09/2022

Address: ميت غزال

❖ History Screen:

- By the way we need to provide users their history to get him show it without any permissions.
- So, we make history screen for them to use it by their ways.

- in this screen each day will take a one row at this screen, each day consists of the day formed in number and string, and has time of check in and out, but not has the location.
- Only place that will has location database will be database itself.
- And there are also all month days, and user has ability to change month by using time picker button.
- This is some images for his features:


11:56

My Attendance

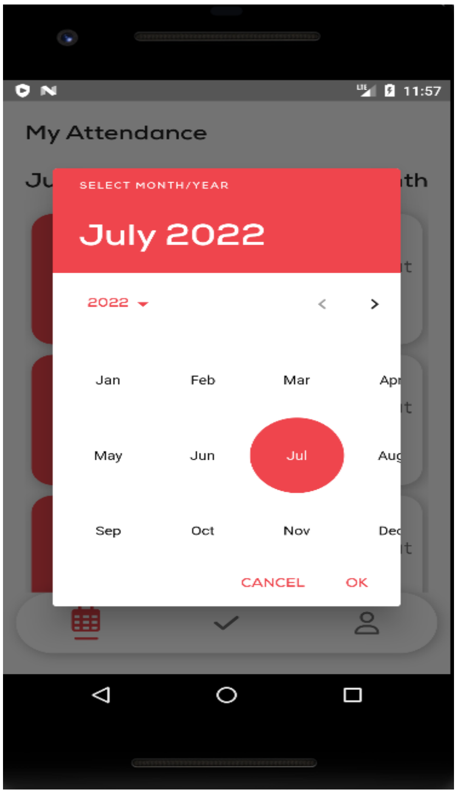
July

Pick a Month

Tue 05 | Check In 06:42 | Check Out 06:42

Wed 06 | Check In 07:02 | Check Out 07:02

Thu 07 | Check In 01:32 | Check Out 01:32


11:57

My Attendance

SELECT MONTH/YEAR

July 2022

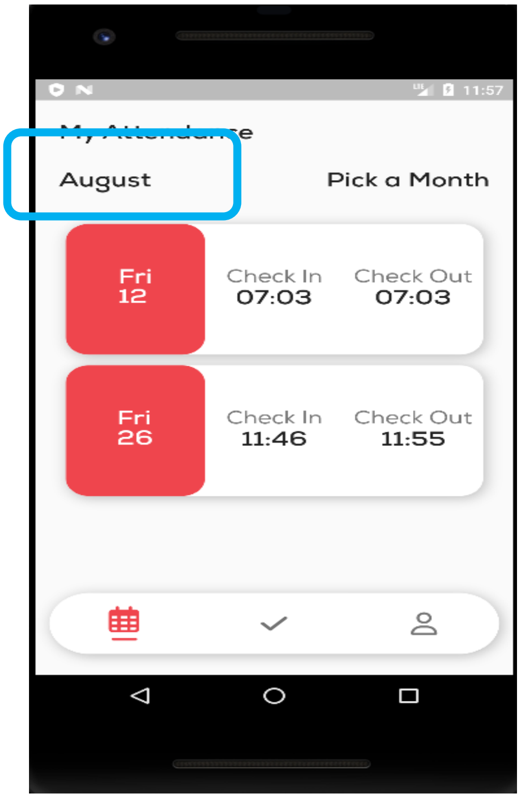
2022

Jan Feb Mar Apr

May Jun Jul Aug

Sep Oct Nov Dec

CANCEL OK


11:57

My Attendance

August

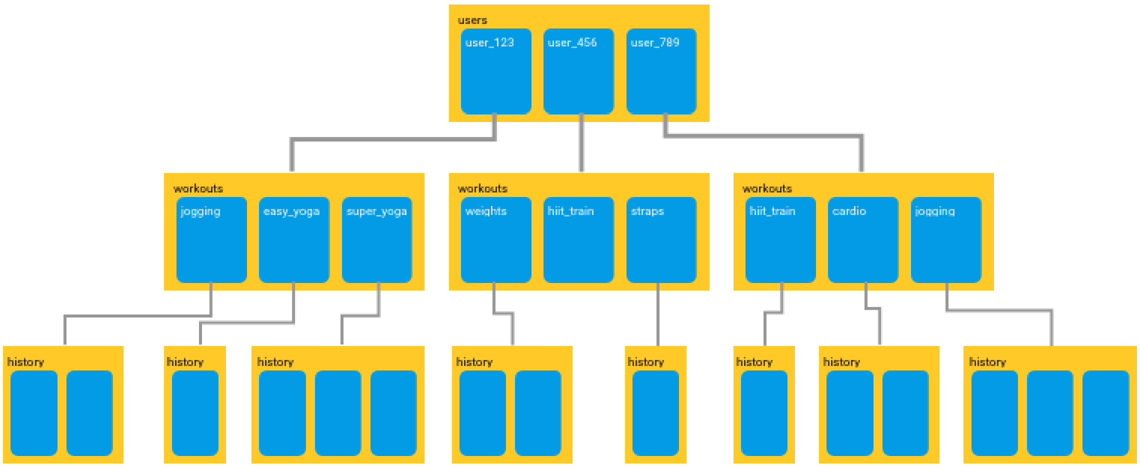
Pick a Month

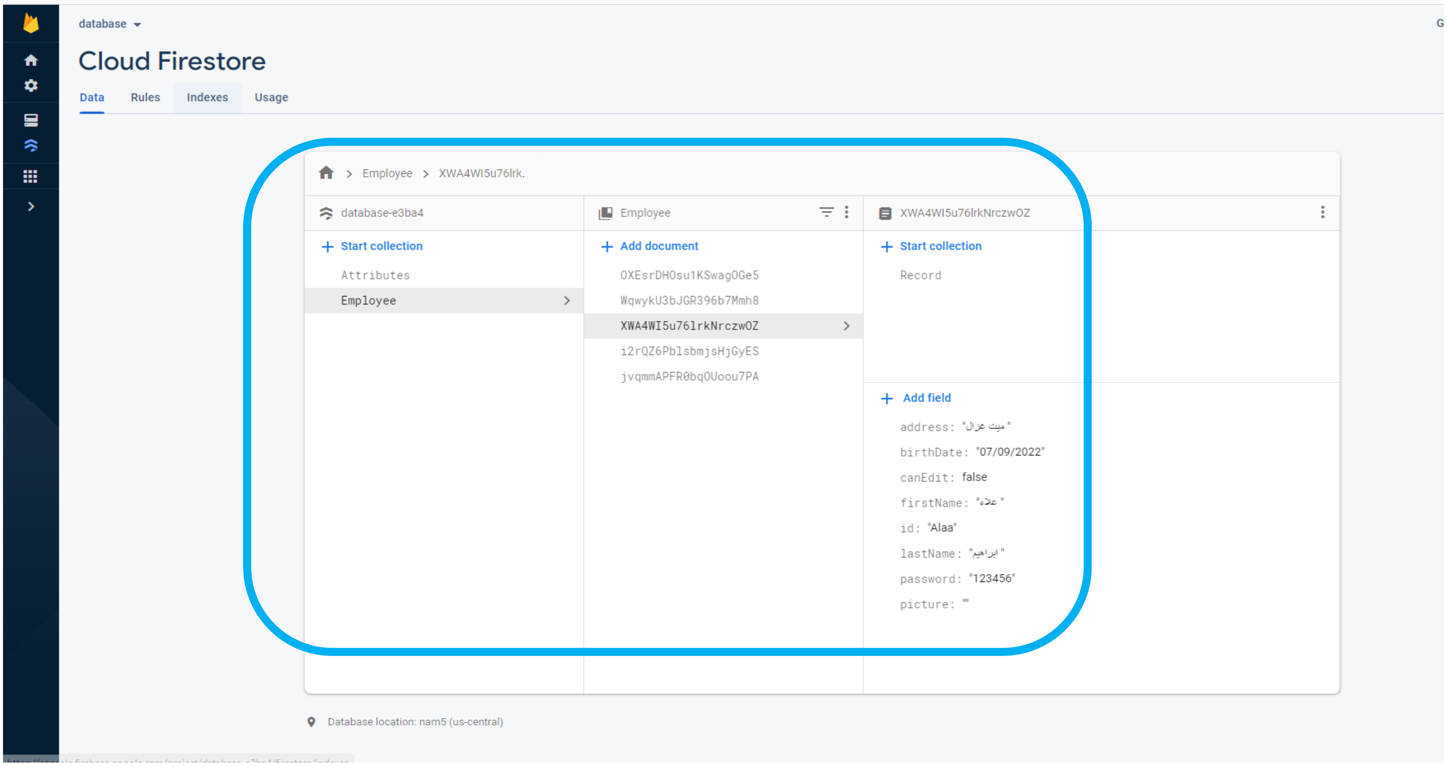
Fri 12 | Check In 07:03 | Check Out 07:03

Fri 26 | Check In 11:46 | Check Out 11:55

❖ Database:

- The import part for any project his database and powerful server to serve it.
- So, in our project we have database using firebase and from known that it stores their database in a document.
- But not one document no, it uses group of them like this:





Attributes
Employee

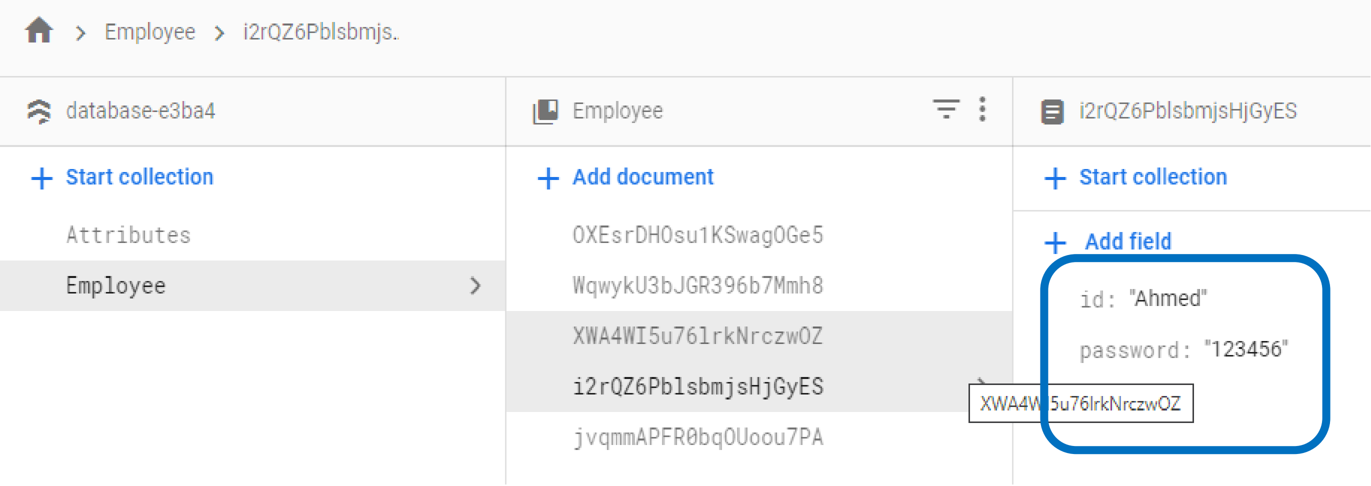
0XEsrDH0su1KSwag0Ge5
WqwykU3bJGR396b7Mmh8
XWA4WI5u76lrkNrczwOZ
i2rQZ6PblsbmjsHjGyES
jvqmmAPFR0bq0Uoou7PA

Record

address: "ميت عزال "
birthDate: "07/09/2022"
canEdit: false
firstName: "علاء "
id: "Alaa"
lastName: "ابراهيم "
password: "123456"
picture: ""

Database picture of our project:

- ❖ Users Credentials:



Attributes

Employee

0XEsrDH0su1KSwag0Ge5

WqwykU3bJGR396b7Mmh8

XWA4WI5u76lrkNrczw0Z

i2rQZ6PblsbmjsHjGyES

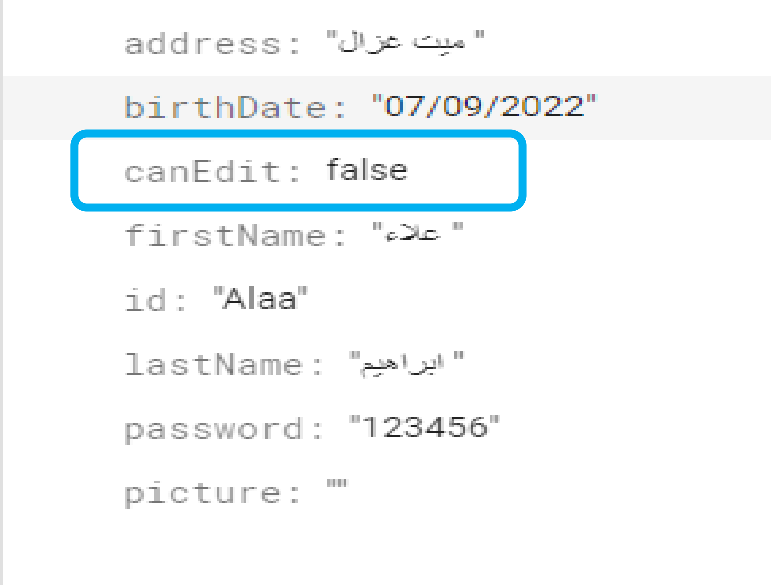
jvqmmAPFR0bq0Uoou7PA

id: "Ahmed"

password: "123456"

XWA4WI5u76lrkNrczwOZ

- ❖ Personal Information:



address: "ميت غزال "

birthDate: "07/09/2022"

canEdit: false

firstName: "علاء "

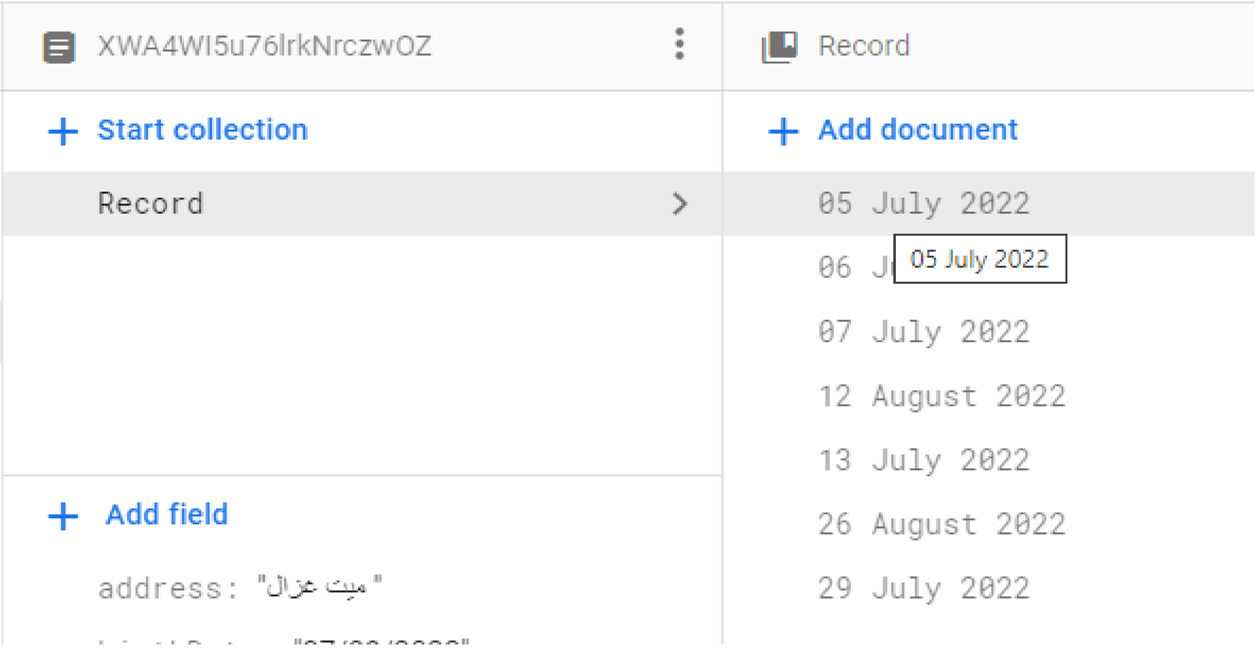
id: "Alaa"

lastName: "ابراهيم "

password: "123456"

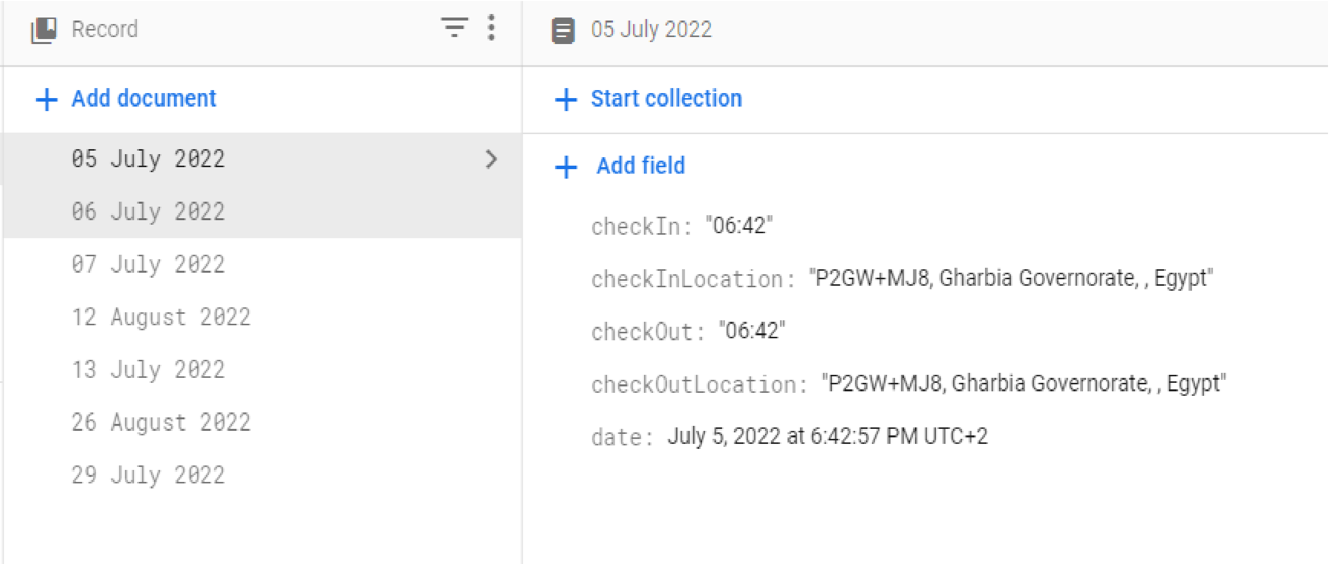
picture: ""

❖ Attendance Records:



address: "ميت غزال"

❖ One Day Attendance Details:



checkIn: "06:42"

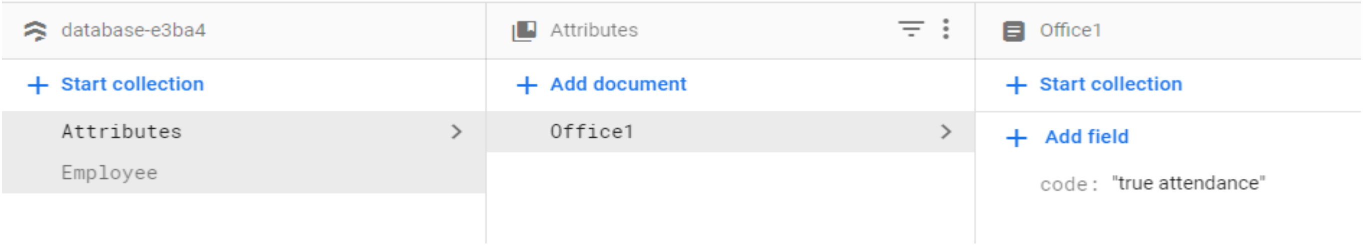
checkInLocation: "P2GW+MJ8, Gharbia Governorate, , Egypt"

checkOut: "06:42"

checkOutLocation: "P2GW+MJ8, Gharbia Governorate, , Egypt"

date: July 5, 2022 at 6:42:57 PM UTC+2

❖ QR code:



code: "true attendance"

FUTURE
DEVELOPMENT

❖ Localization:

Most of the time, we develop applications that target users across the world.

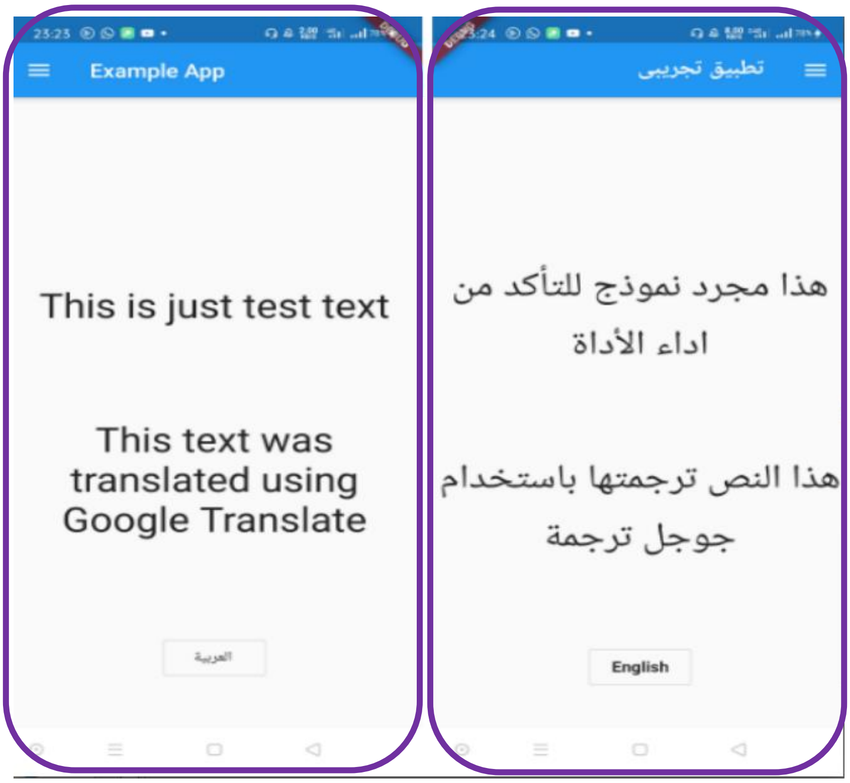
However, we all know that people use different languages.

Therefore, to make the application user-friendly, every person needs to access it in their local language. This is where localization comes into play.

What is Localization?

App localization is where a developer adds multiple languages to an application to cater to users speaking different languages.

Using the Flutter Localization Package, you will need to know how to create an application that supports multiple languages.



Example App

This is just test text

This text was translated using Google Translate

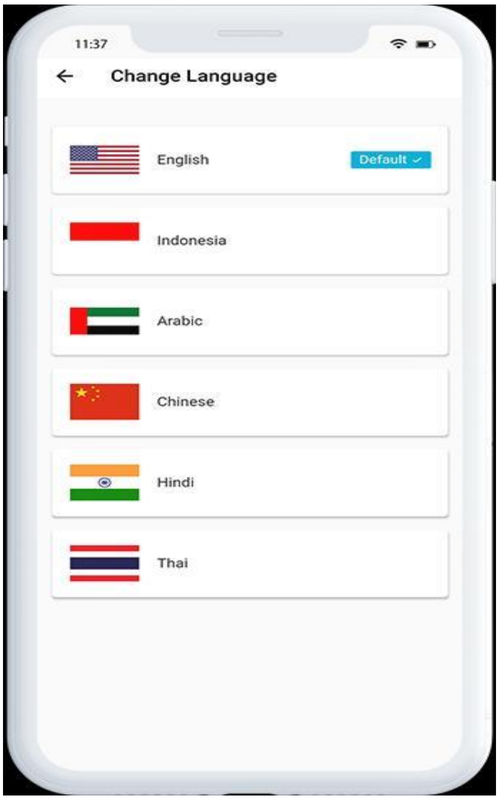
العربية

تطبيق تجريبي

هذا مجرد نموذج للتأكد من اداء الأداة

هذا النص ترجمتها باستخدام جوجل ترجمة

English



11:37

Change Language

English Default ✓

Indonesia

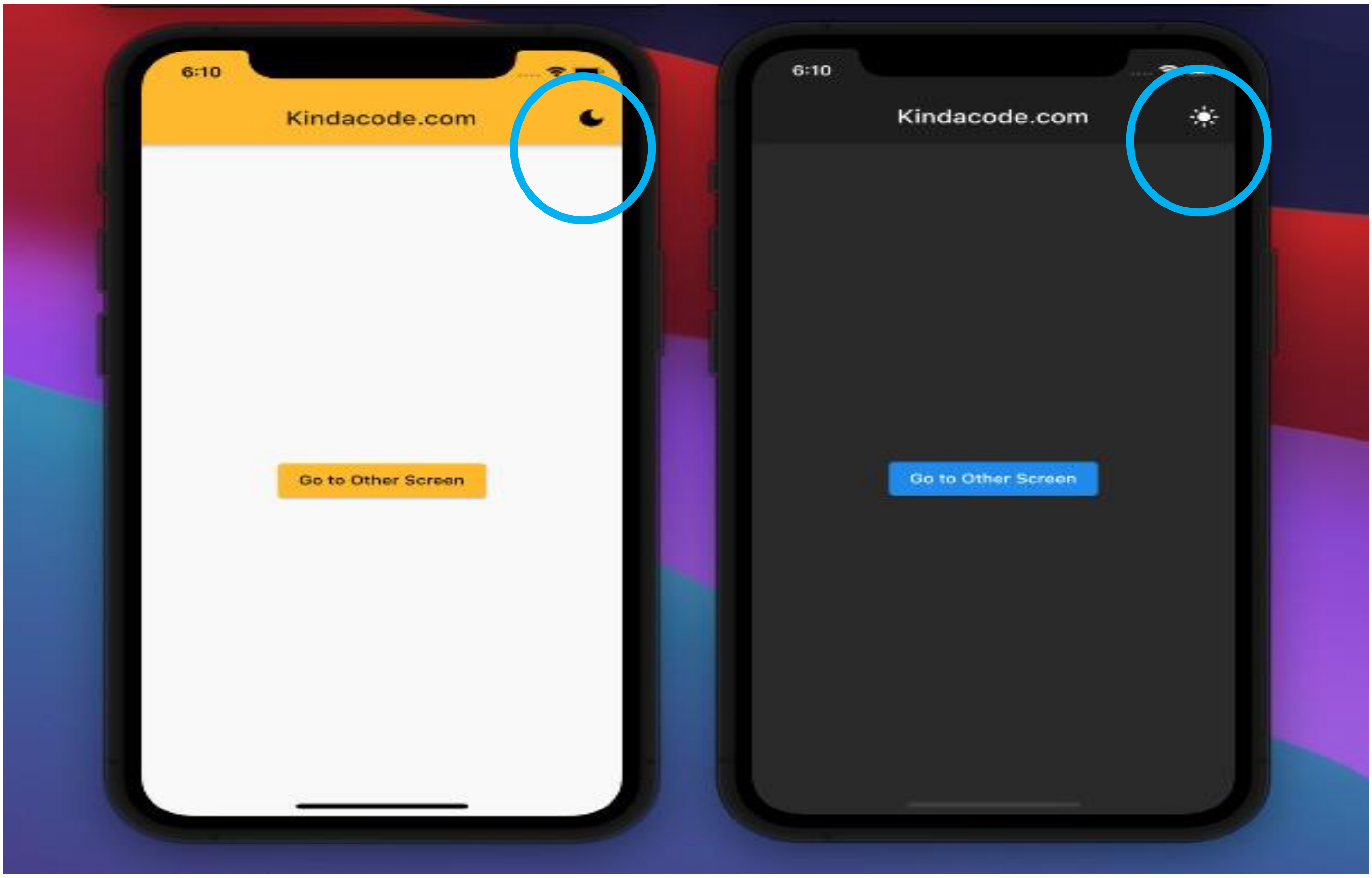
Arabic

Chinese

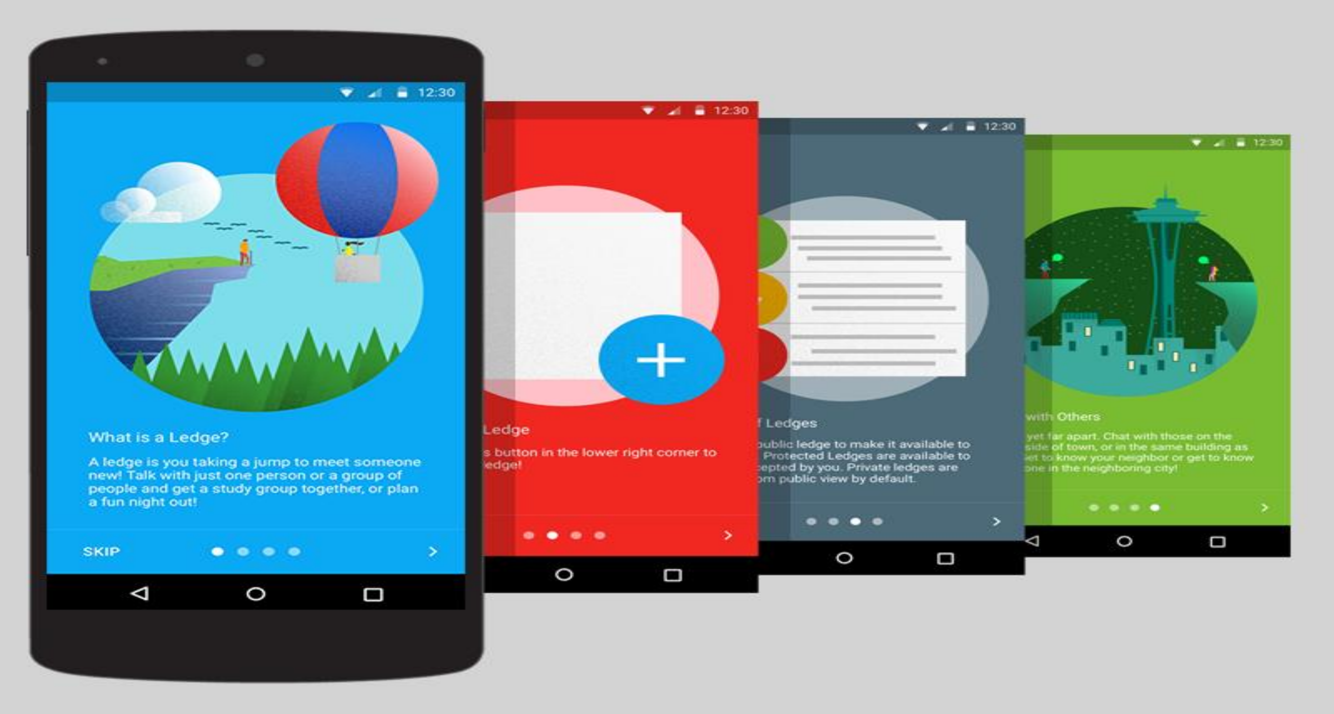
Hindi

Thai

❖ Dark Mode:



❖ Guide Screen:



What is a Ledge?

A ledge is you taking a jump to meet someone new! Talk with just one person or a group of people and get a study group together, or plan a fun night out!

Ledge

s button in the lower right corner to edge!

f Ledges

public ledge to make it available to Protected Ledges are available to cepted by you. Private ledges are om public view by default.

with Others

yet far apart. Chat with those on the side of town, or in the same building as et to know your neighbor or get to know one in the neighboring city!

- ❖ Anther Application for Admin:
  - To help him to manage his responsibilities far from web pages.
  - To help him to manage users’ credentials and their personal information.
  - And, to show their attendance and its details.

- ❖ Anther Application to generate QR code:
  - Every specific time will generate QR code difference about each other to make user attendance more specific.
  - Sure, we will store them systematically at database of them.

Conclusion:

Finally, in our work we wish to present a good work or work with professional level, so we worked by all our energy to develop this project and use it in the real life.

Our ambition to give this work to all needed people for it and it will help them in their business.

Users will rest by using it, because they will achieve a tired work for them easily, and them will monitoring their database all time without permissions from administration.

And administrators will rest will it.

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