VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A Mini-Project Report on

"MEDICINE REMINDER"

Submitted in partial fulfillment for the Mobile Application Development (18CSMP68) course of Sixth Semester of Bachelor of Engineering in Computer Science & Engineering during the academic year 2022-23.

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2022-23

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~~ CERTIFICATE ~~

*Certified that the mini-project work entitled "**MEDICINE REMAINDER**" is a bonafide work carried out by **Dhyan Medappa B (4MH20CS027)** & **Mohammad Huzaifa Baig (4MH20CS062)** for the Mobile Application Development (18CSMP68) of Sixth Semester in Computer Science & Engineering under Visvesvaraya Technological University, Belgavi during academic year 2022- 23.*

It is certified that all corrections/suggestions indicated for Internal Assignment have been incorporated in the report. The report has been approved as it satisfies the course requirements.

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1)……

2) ……

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Dhyan Medappa B

Mohammad Huzaifa Baig

~~~ ABSTRACT ~~~

This is an Android-based application in which an automatic alarm ringing system

is implemented. It focuses on doctor and patient interaction. Patients need not

remember their medicine dosage timings as they can set an alarm on their dosage

timings. The alarm can be set for multiple medicines and timings including date, time

and medicine description. A notification will be sent to them through email or

message inside the system preferably chosen by the patients. They can search doctor

disease wise. The patients will get the contact details of doctors as per their availability. Also the users can see different articles related to medical fields and

health care tips. The system focuses on easy navigation and good user interface.

Many such Medical Reminder Systems have been developed where a new hardware

is required but in our work we have made an attempt to develop a system which is

economical, time-saving and supports medication adherence.

~~~~~ CONTENTS ~~~~~

CHAPTER - 1 INTRODUCTION

1.1 Aim

The aim of a Medicine Reminder app is to enhance medication adherence by sending timely reminders to individuals, ensuring they take their medications as prescribed. It helps users manage their medication schedule, including dosage, frequency, and specific times. The app provides customization options to cater to individual needs and offers flexibility in setting reminders. Users can track their medication usage and create a history that aids in monitoring adherence over time. The app includes refill reminders to prevent medication shortages and treatment interruptions. It provides educational resources and information about medications, including drug interactions and side effects. Medicine Reminder apps can support caregivers by allowing remote monitoring and assistance for their loved ones' medication adherence. Ultimately, the app's aim is to promote better health outcomes by ensuring consistent and timely medication intake, empowering individuals to take an active role in their healthcare.

1.2 Overview

The medicine reminder app is designed to provide users with a comprehensive solution for managing their medication schedule and improving medication adherence. Here is an overview of the key features and functionalities of your app:

User-friendly Interface: The app boasts an intuitive and user-friendly interface that makes it easy for individuals to navigate and utilize its features effectively.

Medication Schedule Management: Users can input their medication schedule, including dosage, frequency, and specific times, allowing the app to generate reminders based on this information.

Customization Options: The app offers customization options, allowing users to set personalized reminders according to their preferred timing and dosage instructions. They can also adjust reminders to accommodate changes in their schedule or specific circumstances.

Reminders and Notifications: The app sends timely reminders and notifications to individuals, ensuring they never miss a dose. These reminders can be in the form of alarms, push notifications, or SMS alerts, providing flexibility to cater to user preferences.

Medication Tracking and History: The app includes a tracking feature that allows users to record when they have taken their medications. This feature creates a comprehensive medication history, enabling users to monitor their adherence over time.

Refill Reminders and Prescription Management: Users can track their medication supply and receive reminders when it's time to refill prescriptions. This feature ensures continuity of treatment and prevents medication shortages.

Medication Information and Education: The app provides users with valuable information about their medications, including details about drug interactions, potential side effects, and proper usage instructions. It serves as an educational resource, empowering users to make informed decisions about their health.

Caregiver Support: The app offers support for caregivers by allowing them to remotely monitor and assist their loved ones' medication adherence. Caregivers can receive alerts if a dose is missed, enabling them to provide timely reminders or intervene as needed.

Syncing and Cloud Backup: The app may include syncing capabilities across devices, ensuring that users can access their medication schedule and history from multiple platforms. Cloud backup functionality safeguards users' data and prevents loss of important information.

User Analytics and Reports: The app may provide analytics and reports on medication adherence, allowing users to track their progress and share this information with healthcare providers if desired.

With these features, your medicine reminder app aims to simplify medication management, improve adherence, and promote better health outcomes for users.

1.3 Outcome

- Improved Medication Adherence: The app helps individuals remember to take their medications as prescribed, leading to improved adherence and consistent medication intake.
- Reduced Missed Doses: By sending timely reminders and notifications, the app helps to minimize the occurrence of missed doses and erratic medication schedules.
- Enhanced Treatment Effectiveness: Consistent and timely medication intake, facilitated by the app, increases the effectiveness of treatments for various medical conditions.
- Prevention of Treatment Interruptions: The app's refill reminders and medication tracking features help individuals avoid running out of their medications, reducing the risk of treatment interruptions.
- Empowerment and Engagement: The app empowers individuals to take an active role in managing their health by providing educational resources, information about medications, and personalized reminders, leading to greater engagement in their healthcare.
- Peace of Mind for Caregivers: The app's caregiver support features offer peace of mind to caregivers by allowing them to remotely monitor and support their loved ones' medication adherence, ensuring their wellbeing and safety.

CHAPTER – 2 DESIGN AND IMPLEMENTATION

2.1 Functional Requirements

The functional requirements are the statement of services the system should provide, how the system reacts to particular inputs and how the system should behave in particular situations. It describes the functionality that the system provides.

Our app requires:

- The user should have the appropriate version of windows.
- The application should be installed on the system.
- Active internet connection

2.2 Hardware Requirements

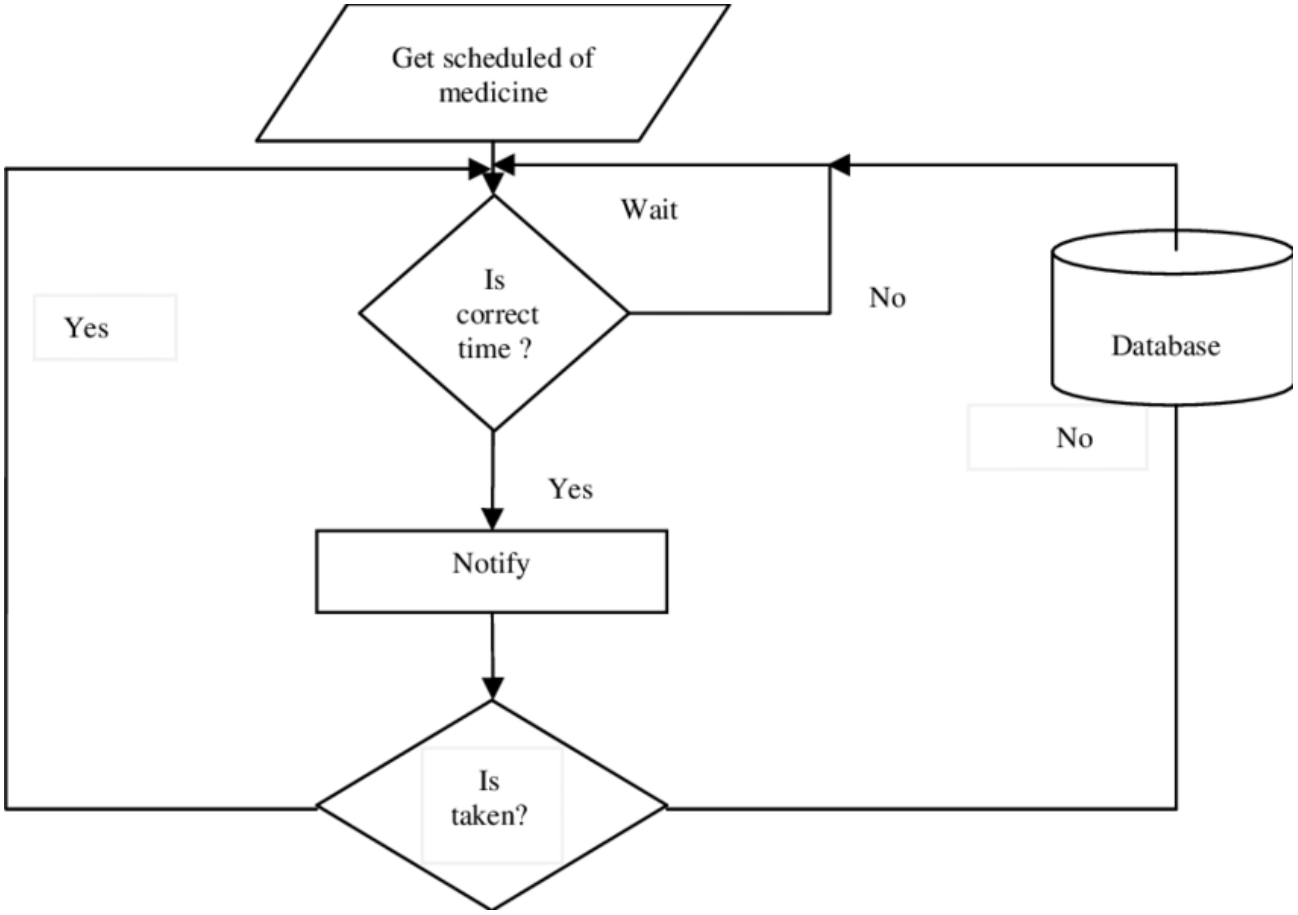
For Android Studio	
OS	64-bit Windows 8/10
Memory	8 GB+ RAM
Storage	12 GB of available disk space minimum (IDE + Android SDK + Android Emulator)
Processor	x86_64 CPU architecture; intel processor i3 or more

2.3 Software Requirements

Programming Language	Java, XML
SDK version	Android 12 Bumblebee (API Level 32)
Database	SQL

2.4 Flow Chart

A flowchart is a picture of the separate steps of a process in sequential order. It is a generic tool that can be adapted for a wide variety of purposes, and can be used to describe various processes, such as a manufacturing process, an administrative or service process, or a project plan.



2.5 Source Code

```
?<xml version="1.0"
encoding=utf-8"?>
<manifest
xmlns:android="http://schem
as.android.com/apk/
res/android"
package="com.gautam.medi
cinetime.mock"
android:versionCode="1"
```

```
android:versionName="1.0"
>
<uses-sdk
android:minSdkVersion="16
"
android:targetSdkVersion="2
9"/>
<uses-permission
android:name="android.per
mission.VIBRATE'/>
<application
android.allowBackup="true"
android:appComponentFacto
ry="android.core.app.coreco
m ponentFactory"
android:debuggable="true"
android:icon="@mipmap/ic_
launcher"
android:label="@string/app_
name"
android:roundlcon="@mipm
ap/ic_launcher_round"
android:supportsRtl="true"
android:theme="@style/App
Theme.NoActionBar">
<activity
android:name="com.gautam.
medicinetime.medicine.medi
cine Activity">
<intent-filter>
<action
android:name="android.inte
nt.action.MAIN"/ >
<category
android:name="android.inte
nt.category.LAUNCHER"/>
</intent-filter>
</activity>
<!--<activity
android:name=".MainActivit
y"/>-->
<activity
android.name="com.gautam.
medicinetime.addmedicine.
AddMedicineActivity"/>
<activity
```

```
android:name="com.gautam.
medicinetime.alarm.Remain
derActivity"/>
android:name="com.gautam.
medicinetime.report.Monthl
yReportActivity"/>
</application>
</manifest>
package
com.gautam.medicinetime.m
edicine;
import
android.content.Intent;
import android.os.Bundle;
import
com.google.android.material
.appbar.AppBarLayout;
import
com.google.android.material
.appbar.CollapsingToolbarLa
yout; import
androidx.coordinatorlayout.
widget.CoordinatorLayout;
import
com.google.android.material
.floatingactionbutton.Floatin
gActionButton;
import
androidx.core.view.ViewCo
mpat;
import androidx.appcompat.app.AppCompatActivity;
import
androidx.appcompat.widget.
Toolbar;
import android.view.Menu;
import
android.view.MenuItem;
import
android.widget.FrameLayout
;
import
android.widget.ImageView;
import
android.widget.RelativeLayo
ut;
import
```

```
android.widget.TextView;
import
com.gautam.medicinetime.In
jection;
import
com.gautam.medicinetime.R
;
import
com.gautam.medicinetime.re
port.MonthlyReportActivity;
import
com.gautam.medicinetime.ut
ils.ActivityUtils;
import
com.github.sundeepk.compa
ctcalendarview.CompactCale
ndarView;
import
java.text.SimpleDateFormat;
import java.util.Calendar;
import java.util.Date;
import java.util.Locale;
import java.util.TimeZone;
import
butterknife.BindView;
import
butterknife.ButterKnife;
import butterknife.OnClick;
public class
MedicineActivity extends
AppCompatActivity {
@BindView(R.id.compactca
lendar_view)
CompactCalendarView
mCompactCalendarView;
@BindView(R.id.date_picke
r_text_view)
TextView
datePickerTextView;
@BindView(R.id.date_picke
r_button)
RelativeLayout
datePickerButton;
@BindView(R.id.toolbar)
Toolbar toolbar;
@BindView(R.id.collapsing
```

```
ToolbarLayout)
CollapsingToolbarLayout
collapsingToolbarLayout;
@BindView(R.id.app_bar_la
yout)
AppBarLayout
appBarLayout;
@BindView(R.id.contentFra
me)
FrameLayout contentFrame;
@BindView(R.id.fab_add_ta
sk)
FloatingActionButton
fabAddTask;
@BindView(R.id.coordinato
rLayout)
CoordinatorLayout
coordinatorLayout;
@BindView(R.id.date_picke
r_arrow)
ImageView arrow;
private MedicinePresenter
presenter;
private SimpleDateFormat
dateFormat = new
SimpleDateFormat("MMM
dd", /Locale.getDefault()/
Locale.ENGLISH);
private boolean isExpanded
= false;
@Override
protected void
onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanc
eState);
setContentView(R.layout.act
ivity_medicine);
ButterKnife.bind(this);
setSupportActionBar(toolbar
);
mCompactCalendarView.set
Locale(TimeZone.getDefault
(), /Locale.getDefault()/
Locale.ENGLISH);
mCompactCalendarView.set
```

```
ShouldDrawDaysHeader(tru
e);
mCompactCalendarView.set
Listener(new
CompactCalendarView.Com
pactCalendarViewListener()
{
@Override
public void
onDayClick(Date
dateClicked) {
setSubtitle(dateFormat.form
at(dateClicked));
Calendar calendar =
Calendar.getInstance();
calendar.setTime(dateClicke
d);
int day =
calendar.get(Calendar.DAY_
OF_WEEK);
if (isExpanded) {
ViewCompat.animate(arrow)
.rotation(0).start();
} else {
ViewCompat.animate(arrow)
.rotation(180).start();
}
isExpanded = !isExpanded;
appBarLayout.setExpanded(i
sExpanded, true);
presenter.reload(day);
}
@Override
public void
onMonthScroll(Date
firstDayOfNewMonth) {
setSubtitle(dateFormat.form
at(firstDayOfNewMonth));
}
});
setCurrentDate(new Date());
MedicineFragment
medicineFragment =
(MedicineFragment)
getSupportFragmentManage
r().findFragmentById(R.id.c
```

```
ontentFrame);
if (medicineFragment == null) {
medicineFragment = MedicineFragment.newInstance();
ActivityUtils.addFragmentToActivity(getSupportFragmentManager(), medicineFragment, R.id.contentFrame);
}
//Create MedicinePresenter
presenter = new MedicinePresenter(Injection.provideMedicineRepository(MedicineActivity.this), medicineFragment);
}
@Override
public boolean onCreateOptionsMenu(Menu menu) {
getMenuInflater().inflate(R.menu.medicine_menu, menu);
return true;
}
@Override
public boolean onOptionsItemSelected(MenuItem item) {
if (item.getItemId() == R.id.menu_stats) {
Intent intent = new Intent(this, MonthlyReportActivity.class);
startActivity(intent);
}
return super.onOptionsItemSelected(item);
}
public void setCurrentDate(Date date) {
```

```
setSubtitle(dateFormat.form
at(date));
mCompactCalendarView.set
CurrentDate(date);
}
public void
setSubtitle(String subtitle) {
datePickerTextView.setText(
subtitle);
}
@OnClick(R.id.date_picker
_button)
void
onDatePickerButtonClicked(
) {
if (isExpanded) {
ViewCompat.animate(arrow)
.rotation(0).start();
} else {
ViewCompat.animate(arrow)
.rotation(180).start();
}
isExpanded = !isExpanded;
appBarLayout.setExpanded(i
sExpanded, true);
}
}
```

3.2 Discussion

Medication Schedule: This section displays the daily medication schedule for the user, including the names of the medications, dosages, and specific times for each dose. It provides a clear overview of the medication regimen.

Reminders and Notifications: This section allows users to set personalized reminders for each medication. Users can specify the timing, frequency, and dosage instructions for each reminder. The app sends notifications or alarms at the scheduled times to remind users to take their medications.

Medication Tracking: This section enables users to track their medication usage and adherence. Users can mark each dose as taken or missed, creating a log or history of their medication intake. The app may also provide visual representations or progress reports to show adherence patterns over time.

Medication Information: This section provides detailed information about each medication, including its purpose, dosage instructions, potential side effects, and interactions with other drugs or food. Users can access comprehensive drug profiles to make informed decisions about their medications.

CHAPTER – 4

CONCLUSION AND FUTURE WORK

4.1 Conclusion

In conclusion, a Medicine Reminder app is a valuable tool for individuals to effectively manage their medication schedule and improve adherence. With features such as personalized reminders, medication tracking, refill alerts, and access to medication information, the app empowers users to stay on track with their medications. It provides convenience, customization, and educational resources, promoting better medication management and ultimately leading to improved health outcomes. By facilitating timely reminders, tracking medication usage, and offering essential information, the Medicine Reminder app aims to enhance adherence and ensure individuals take their medications as prescribed, thus supporting their overall well-being.

4.2 Future Enhancement

Integration with Wearable Devices: Integrating the app with wearable devices such as smartwatches or fitness trackers would allow users to receive medication reminders directly on their wrists. This would provide even more convenience and accessibility, particularly for individuals who may not always have their smartphones readily available.

Medication Interaction Alerts: Enhancing the app to include a feature that detects potential drug interactions based on the user's medication profile. The app could provide alerts or warnings when a new medication is added that may interact with existing medications, helping users avoid potentially harmful combinations.

Gamification Elements: Introducing gamification elements to make medication adherence more engaging and rewarding. For example, users could earn points or badges for consistently taking their medications on time, and these achievements could be tracked and shared with friends or healthcare providers.

Medication History and Insights: Expanding the medication tracking feature to provide more detailed insights and trends on medication adherence. This could include visual representations of adherence patterns over time, reminders for missed doses, and personalized suggestions for improving adherence based on the user's history.

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