

A. SDLC and Mobile Apps

The Software Development Life Cycle (SDLC) is a systematic approach for every step of the software application process including planning, designing, developing, testing, and deploying. Mobile application development is one of the areas where SDLC is most utilized and thus guarantees an app to be user-friendly, reliable over a variety of devices, and the whole process of app delivery being efficient. The phases of mobile SDLC are generally adjusted to meet the challenges that are specific to the platform such as small screen size, different hardware capabilities, and constant changes in operating systems.

1. Requirements Analysis

The very first phase is the analysis of requirements, where software developers work together with various parties to set the goals of mobile apps. The workflow involves not only specifying functional requirements like user registration, push notifications, GPS access, and offline usage but also non-functional requirements such as performance, security, and battery efficiency. Moreover, the decisions concerning target platforms (Android, iOS, or cross-platform) and the intended audience have also been finalized during this stage. If the requirements are explicitly stated, they will help in darting misunderstandings in the future and will also drive out the scope creep.

2. Design Phase

Then comes the design phase where requirements are made into precise specifications for the design. Special focus is given to UI/UX design to make sure that it is easy to use on small touch-based screens, in the case of mobile apps. Wireframes, navigation flows, and layouts are produced as well as the technical designs dealing with system architecture, databases, APIs, and device integrations. Good implementation of a design ensures better scalability and easier maintenance in the future.

3. Implementation Phase

The phase of implementation requires the development of the application with the appropriate technologies for the corresponding platforms, for instance, getting Android done in Kotlin, iOS in Swift, or using cross-platform frameworks such as Flutter. The feature development goes according to the design and additionally, the features are linked up with the backend services by the use of version control systems.

4. Testing Phase

The application, once created, is subjected to testing that includes a whole range of tests: functional, performance, usability, and security. These tests are done on several different devices at the same time in order to locate bugs and thus assure the reliability of the product.

5. Deployment Phase

Finally, the application goes through the deployment stage where it is first processed and then made accessible to the users through the app stores like Google Play or the App Store. (testdevlab, 2026)

B. Specification and Design

The specification and design phase determines what features the Fitness Tracking App will include and how it will operate, ensuring that user needs, usability principles, and technical practicalities are

taken into account. Then, a clear, user-centric mobile application is created using the most appropriate specification and design methods.

User Requirements Specification

The user requirements, determined with a user-centered approach, targeted fitness app end-users including beginners and regular users.

basic structure such input data requirements

Fitness tracker applications even collect fitness-related input from users during registration. The home page allows users to enter their goals. The activity page and workout page also display relevant inputs and basic information.

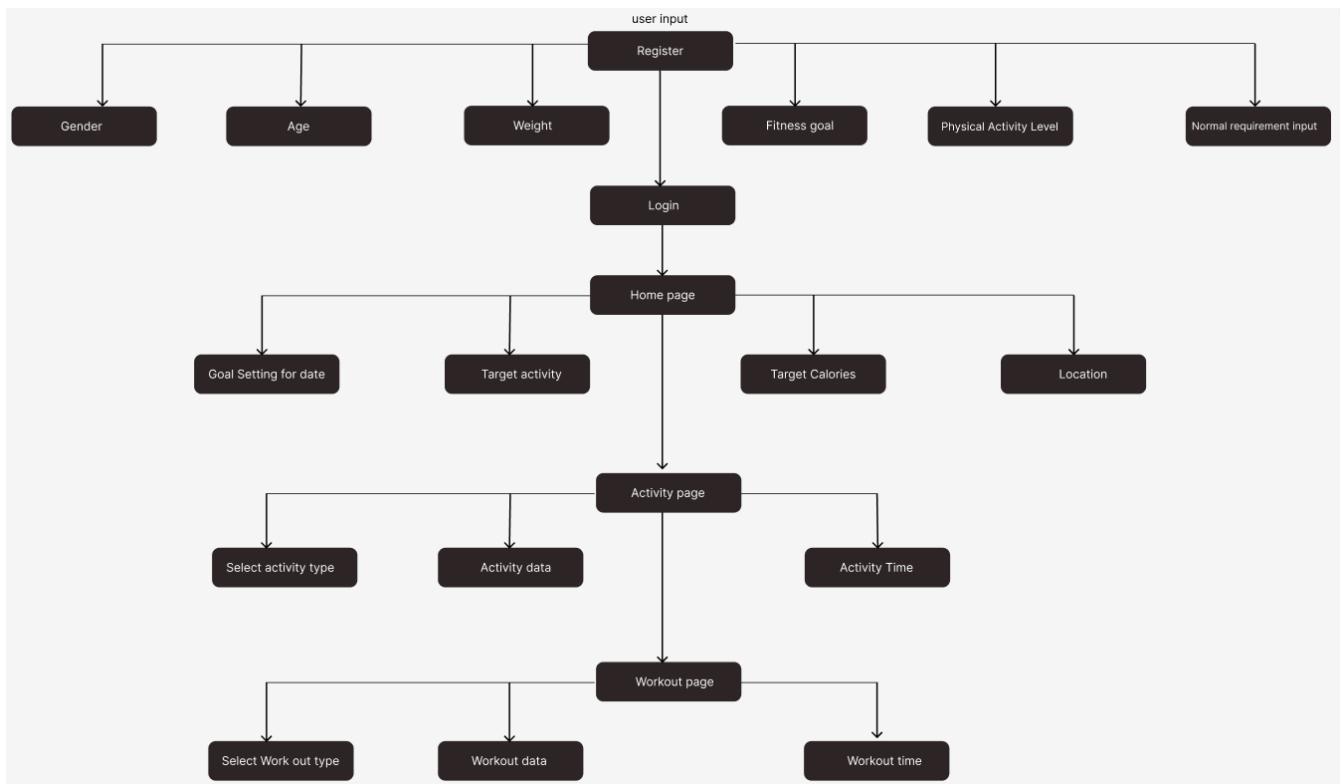


Figure 3.1

system architecture and wireframes

Welcome screen

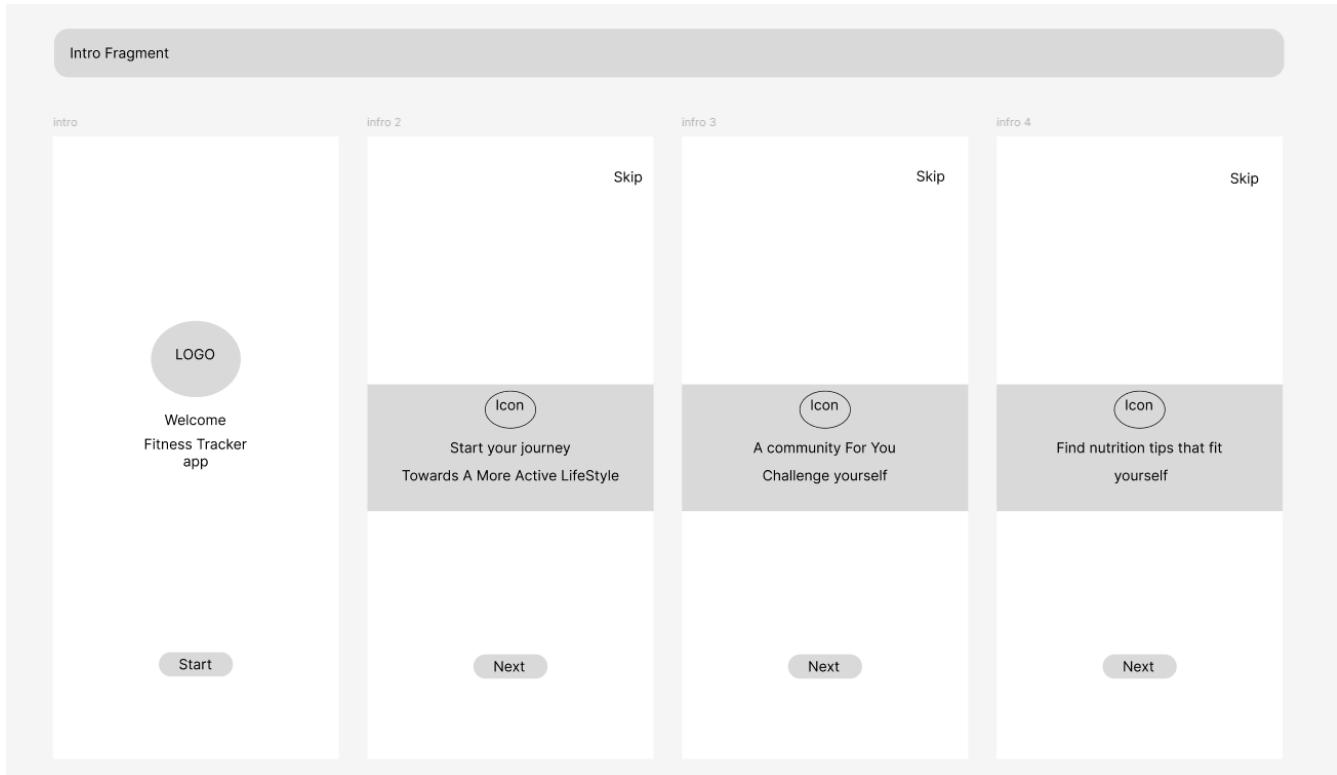


Figure 3.2

Register and login

Figure 3.3

Goal setting, activity and workout screen

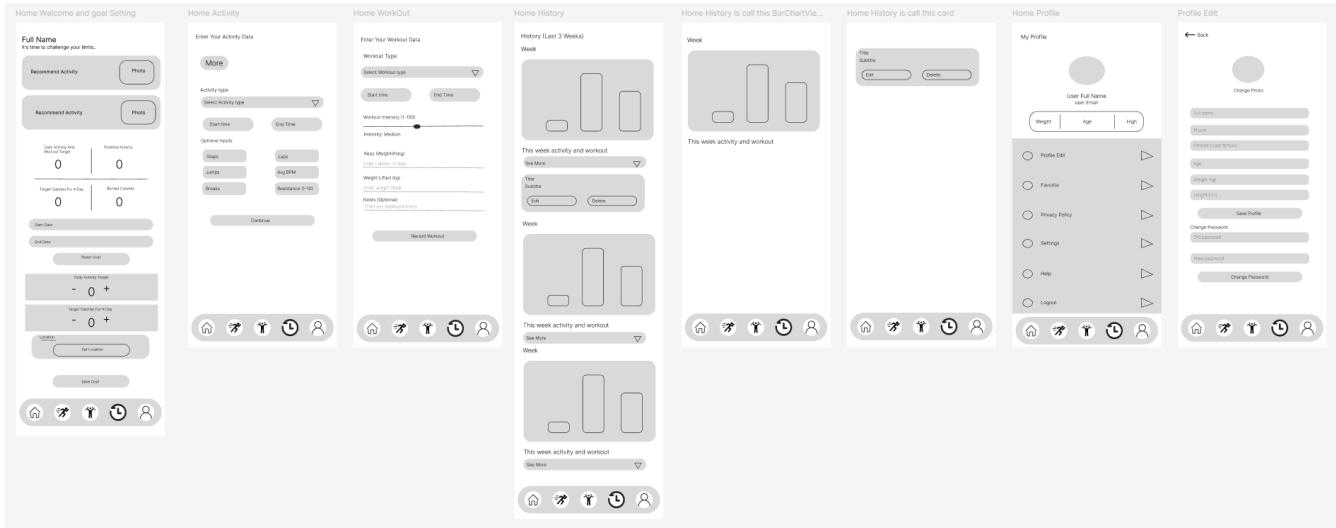
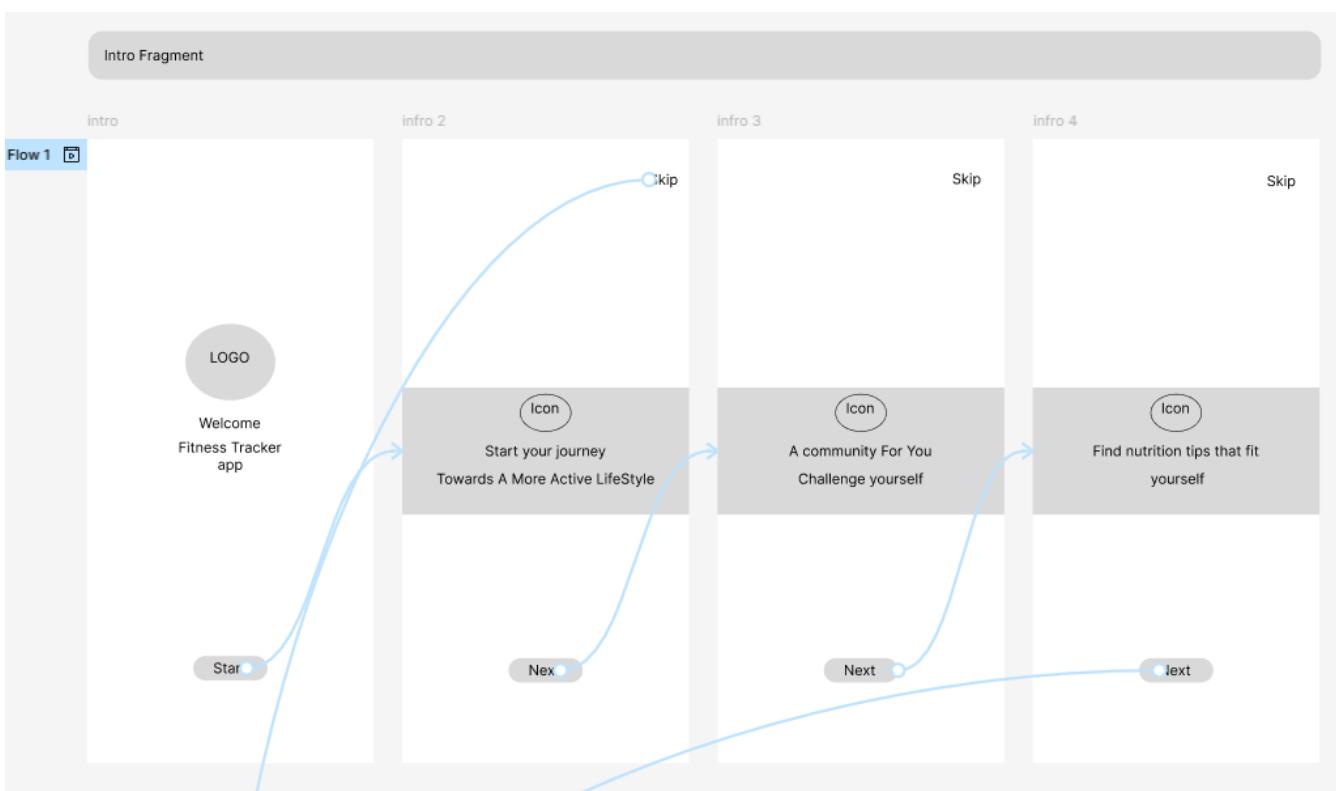
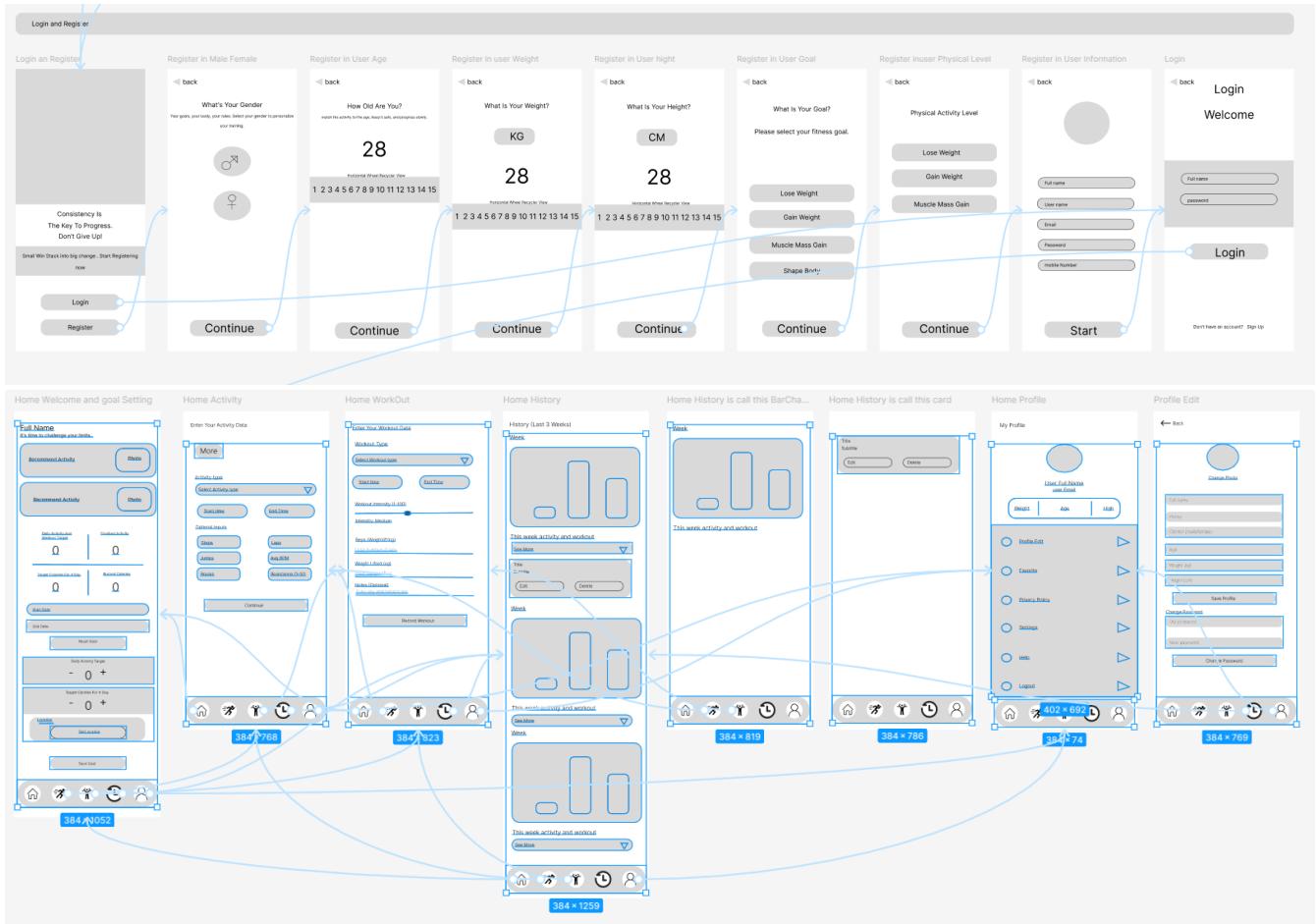


Figure 3.4

Interaction flows





Task 4: Developing Application Functionality

Using Android Studio

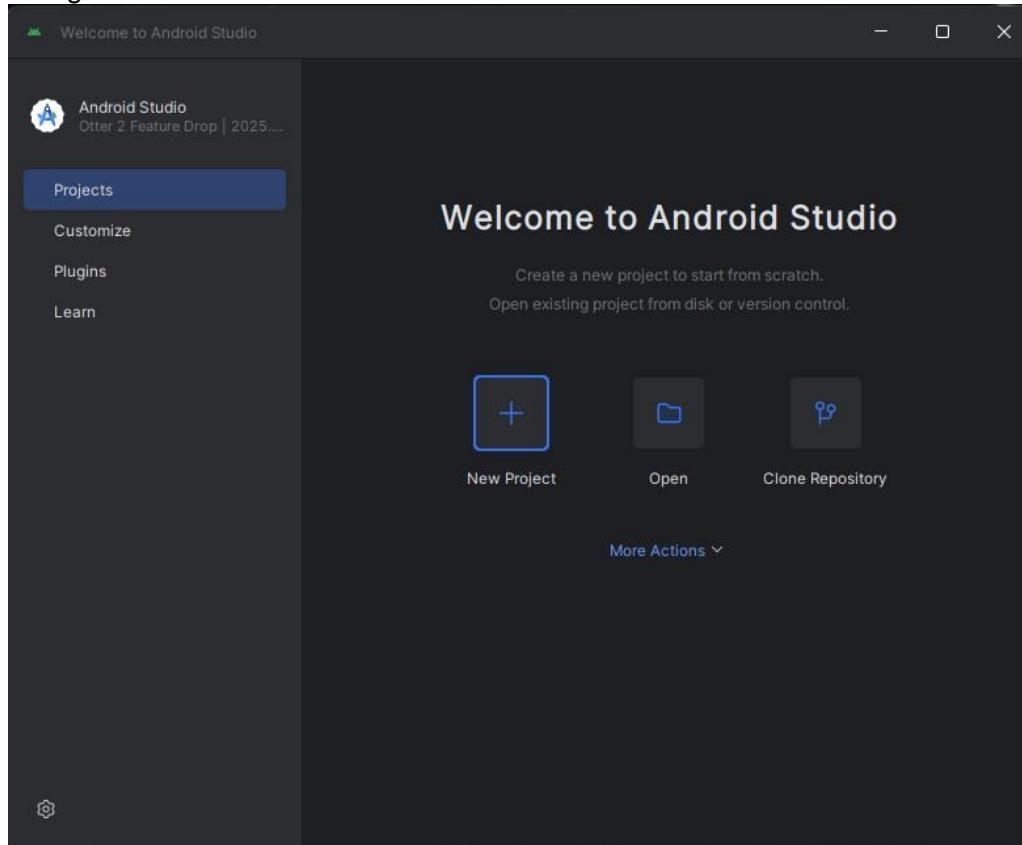


FIGURE-4.1

Use android studio with start project

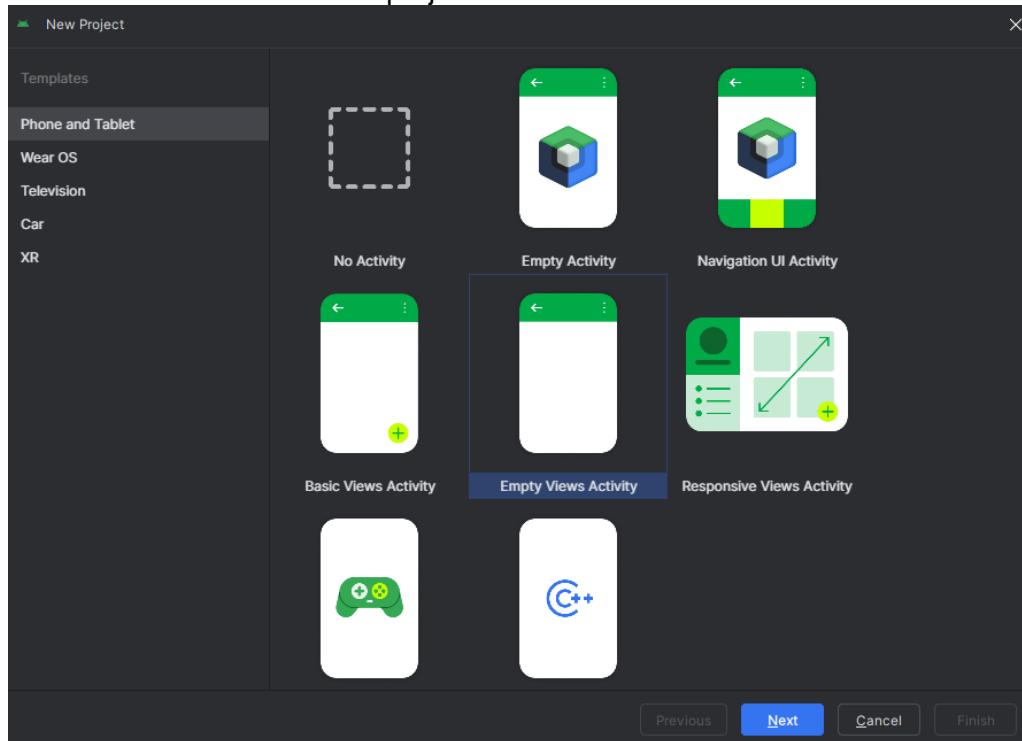


FIGURE-4.2
Empty view activity with new project

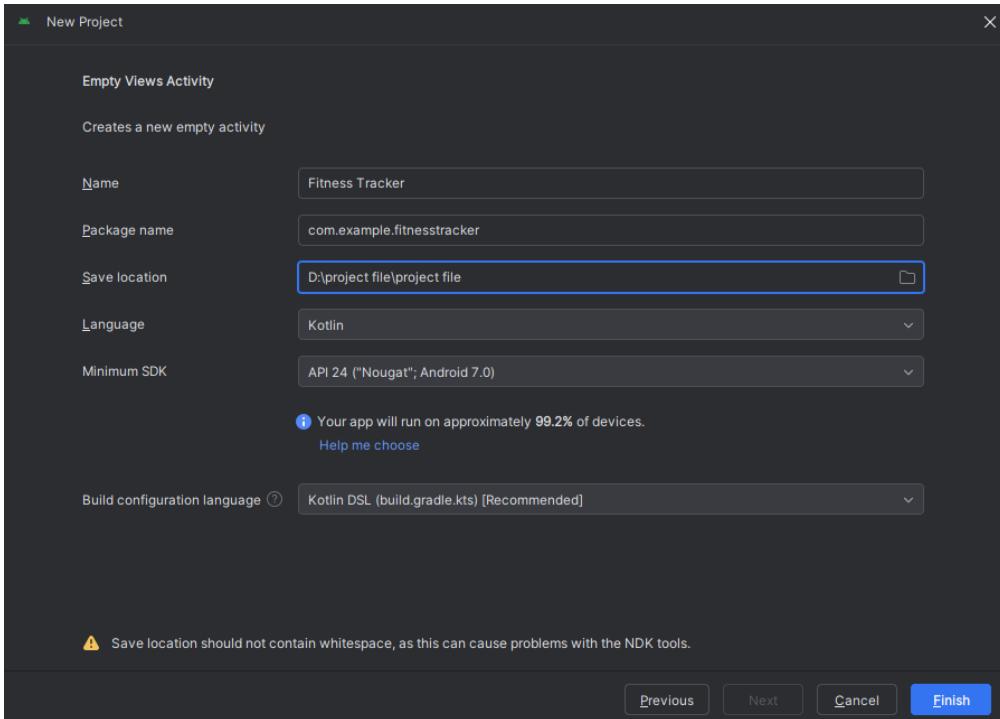


FIGURE-4.3
Fitness Tracker project start

```

package com.example.fitnesstracker
import androidx.fragment.app.Fragment
import android.os.Bundle
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import android.widget.SwipeRefreshLayout
import androidx.recyclerview.widget.LinearLayoutManager
import androidx.recyclerview.widget.RecyclerView
import com.example.fitnesstracker.databinding.HomeHistoryFragmentBinding
import java.util.*

class Home_History_Fragment : Fragment() {
    private var _bindings: FragmentHomeHistoryBinding? = null
    private val binding get() = _bindings!!
    private val BASE_URL = "http://10.0.2.2/fitness_tracker/"
    private val HISTORY_URL = BASE_URL + "get_history_week.php"
    private val DELETE_URL = BASE_URL + "delete_history_item.php"
    private val UPDATE_URL = BASE_URL + "update_history_item.php"
    private lateinit var week1: LayoutWeekSectionBinding
    private lateinit var week2: LayoutWeekSectionBinding
    private lateinit var week3: LayoutWeekSectionBinding
    private val df = SimpleDateFormat(pattern = "yyyy-MM-dd", Locale.US)
    private var userId: Int = -1
    // Keep last ranges so we can refresh after edit/delete
    private var week1Range: Pair = "" to ""
    private var week2Range: Pair = "" to ""
    private var week3Range: Pair = "" to ""

    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?, savedInstanceState: Bundle?): View {
        _bindings = FragmentHomeHistoryBinding.inflate(inflater, container, false)
        return _bindings.root
    }
}

```

FIGURE-4.4
Kotlin Program

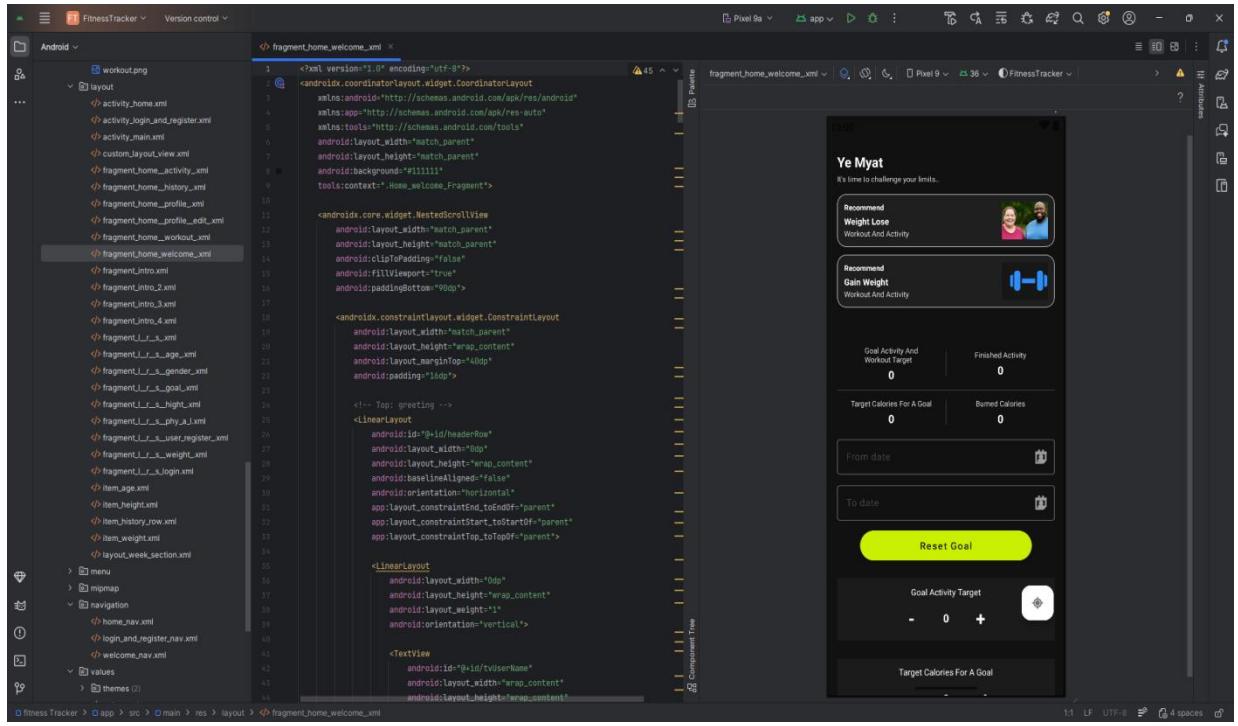


FIGURE-4.5
Home Welcome Layout

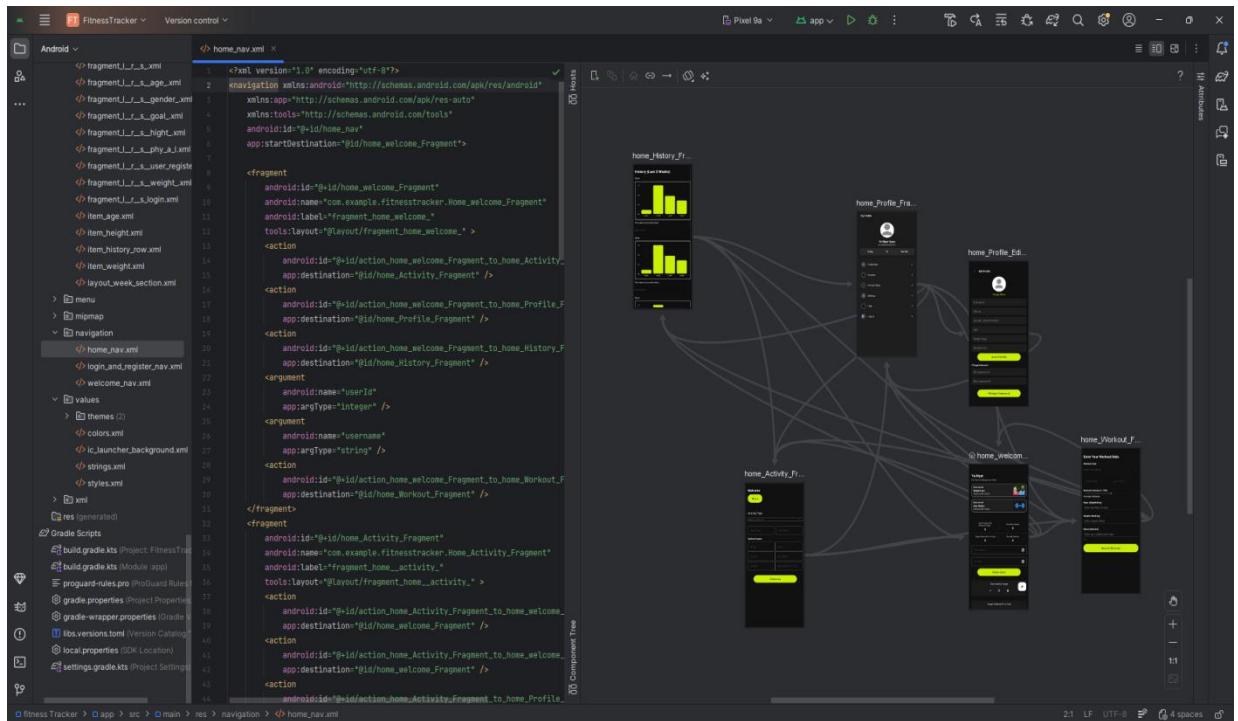


FIGURE-4.6
Home screen Navigation

A. User Interface Elements

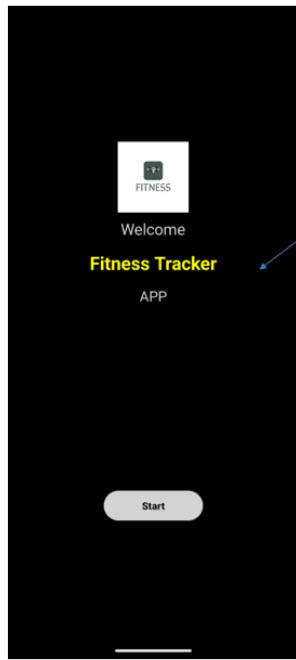


FIGURE-4.7

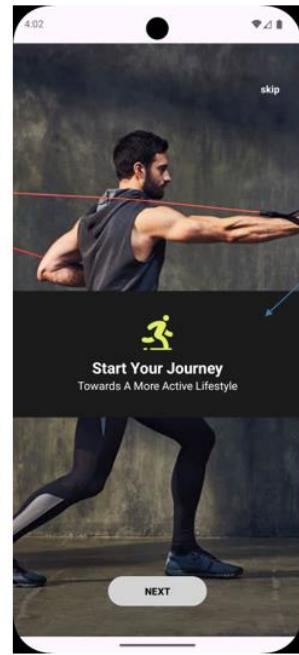


FIGURE-4.8

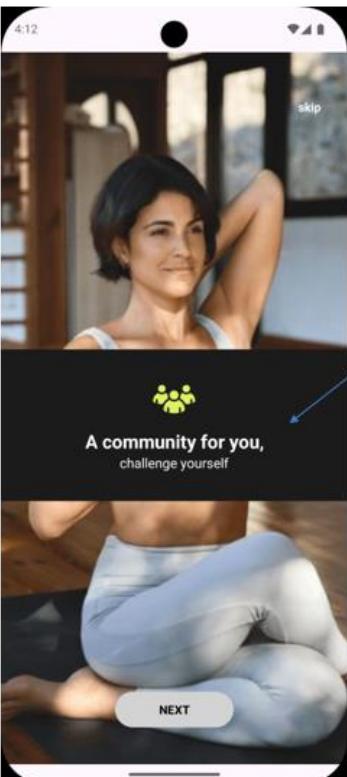


FIGURE-4.9

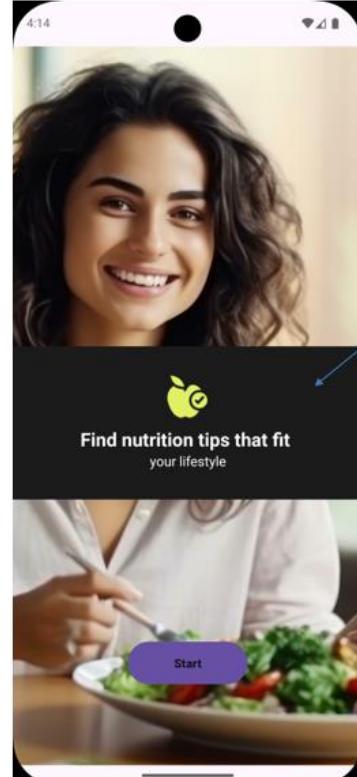


FIGURE-4.10

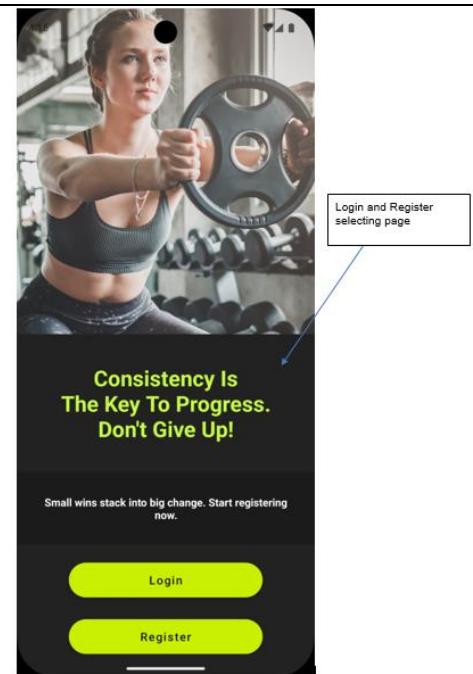


FIGURE-4.11

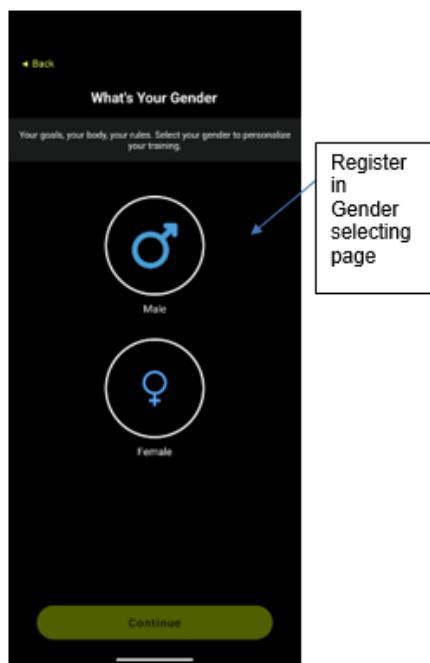


FIGURE-4.12



FIGURE-4.13

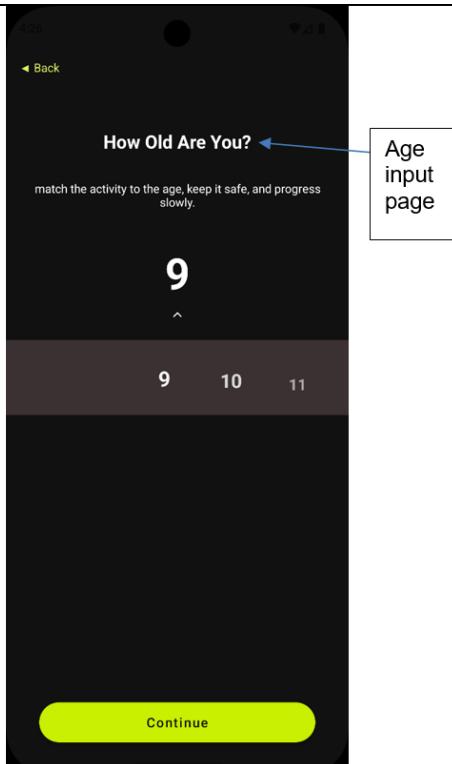
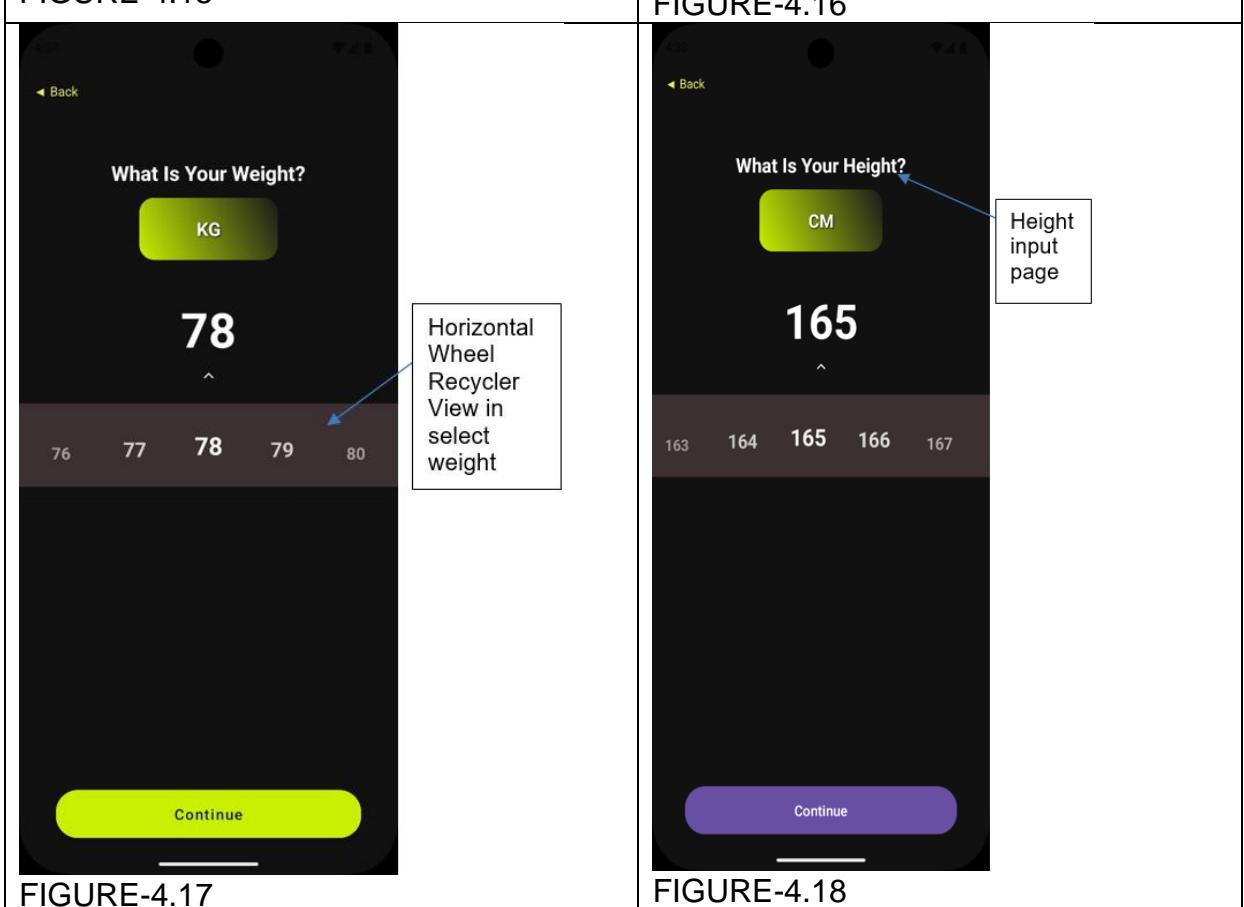
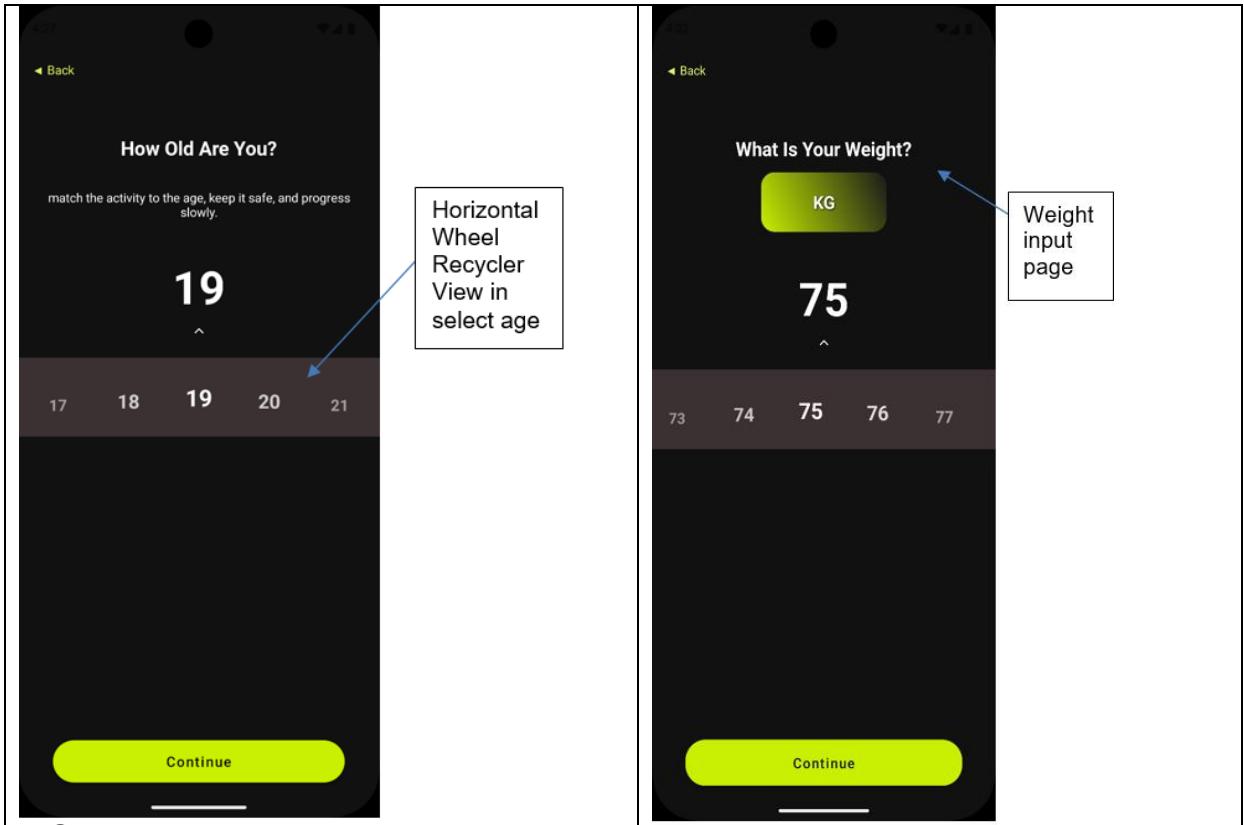


FIGURE-4.14



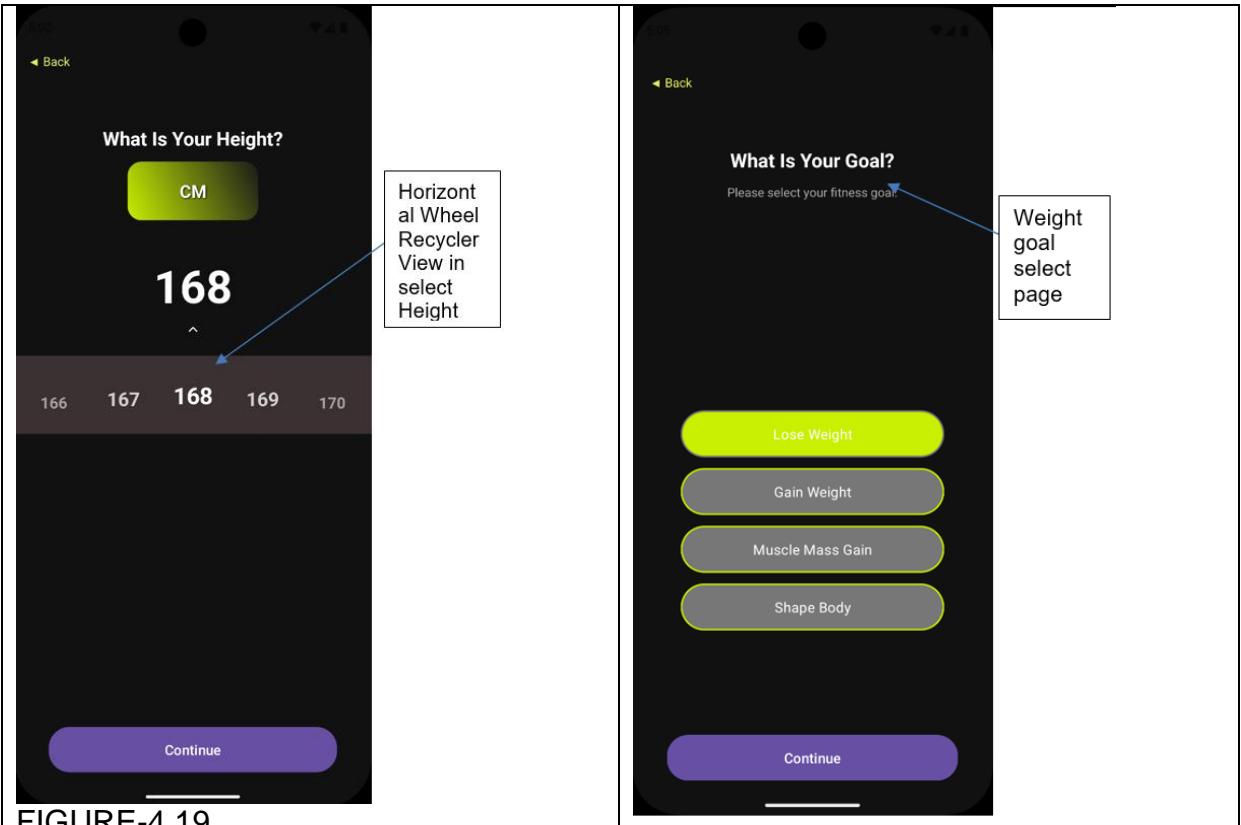


FIGURE-4.19

FIGURE-4.20

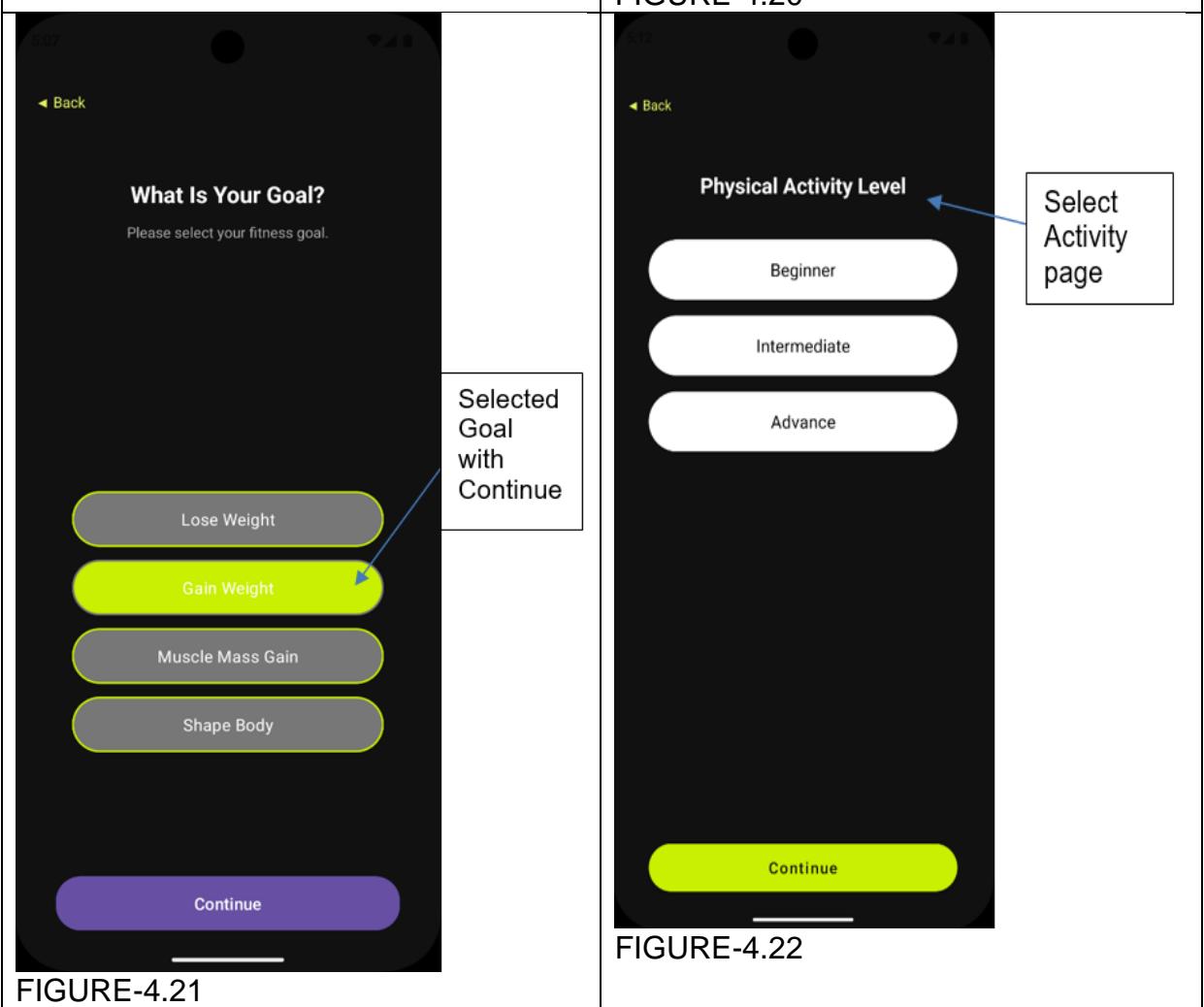


FIGURE-4.21

FIGURE-4.22

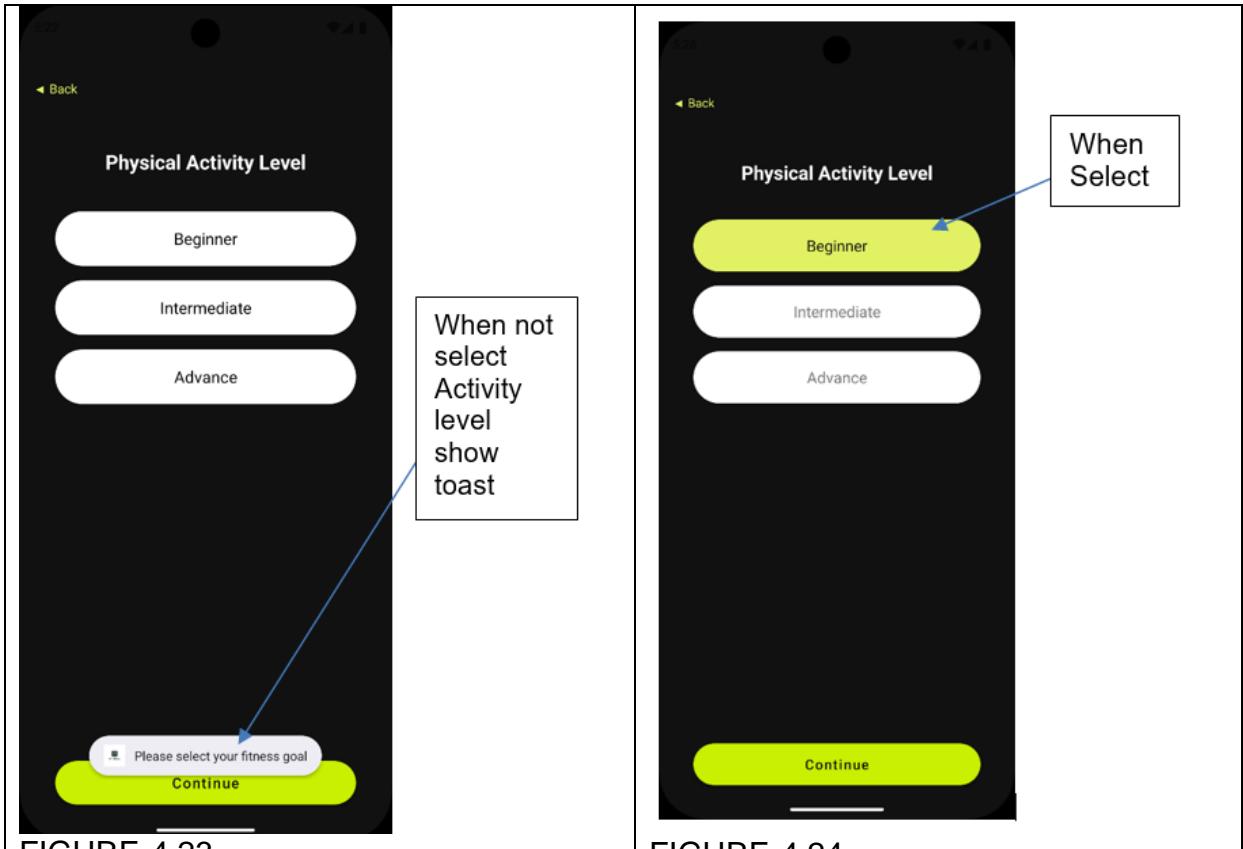


FIGURE-4.23

FIGURE-4.24

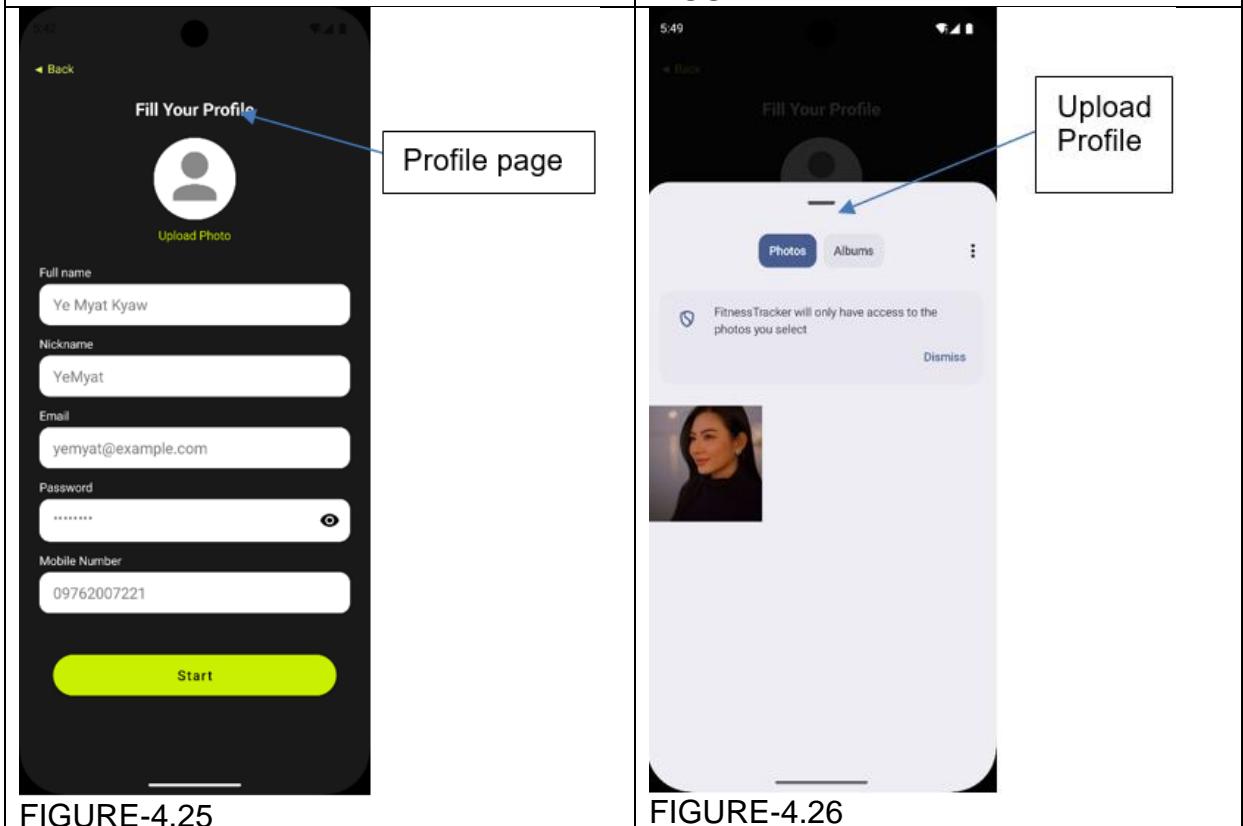


FIGURE-4.25

FIGURE-4.26

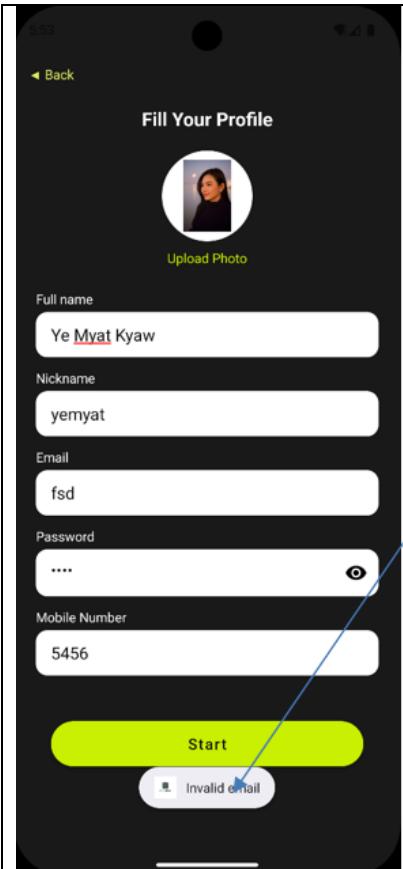


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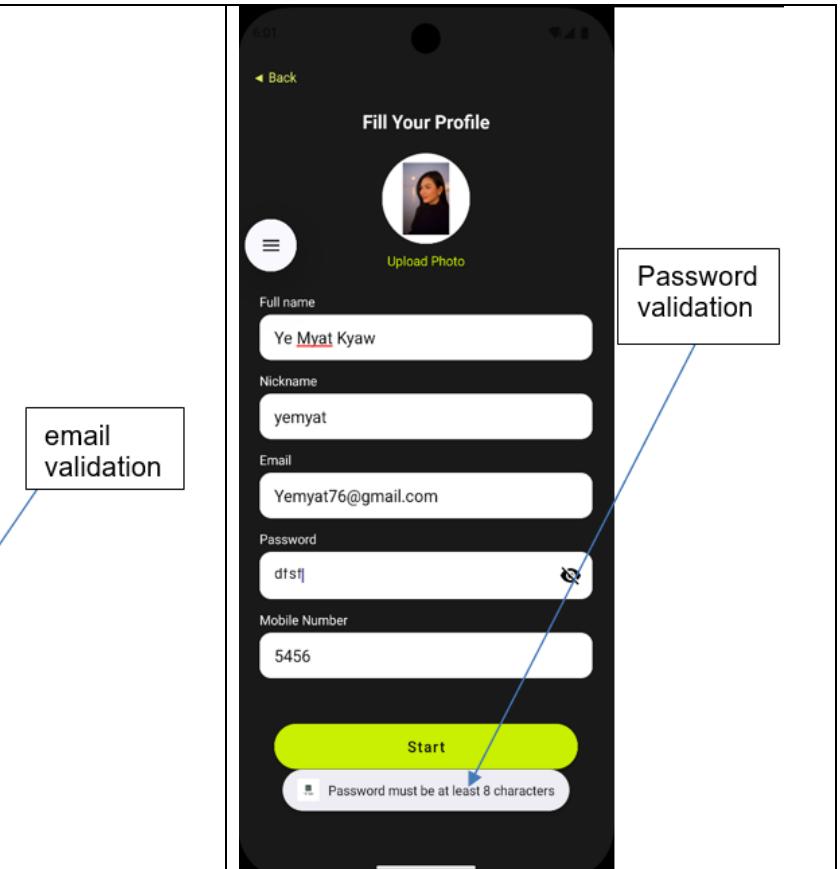


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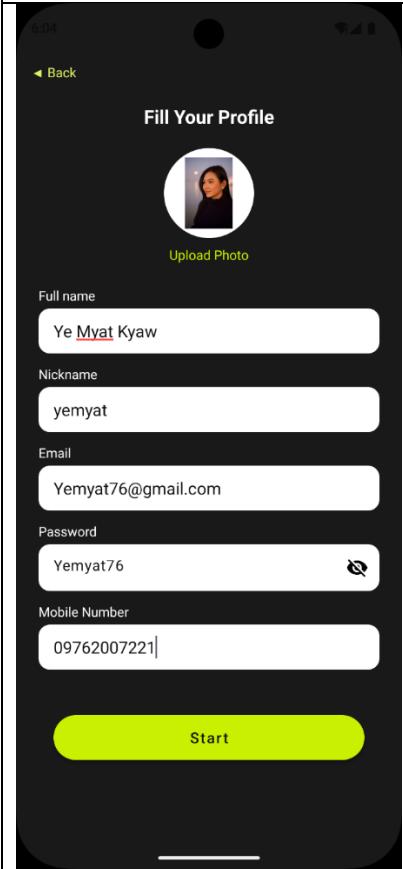


FIGURE-4.29

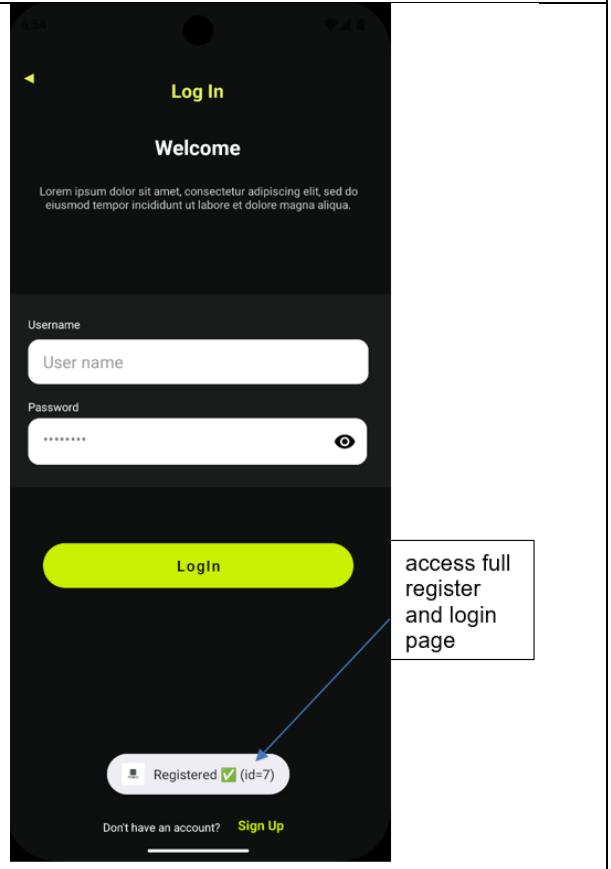
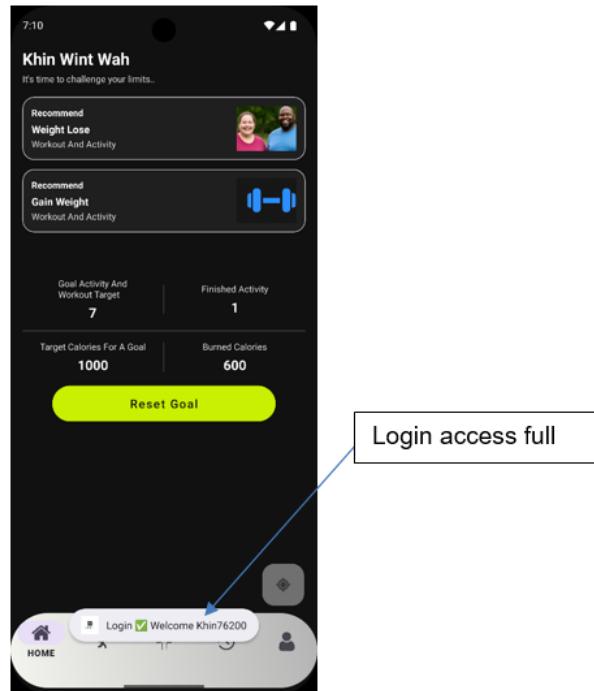
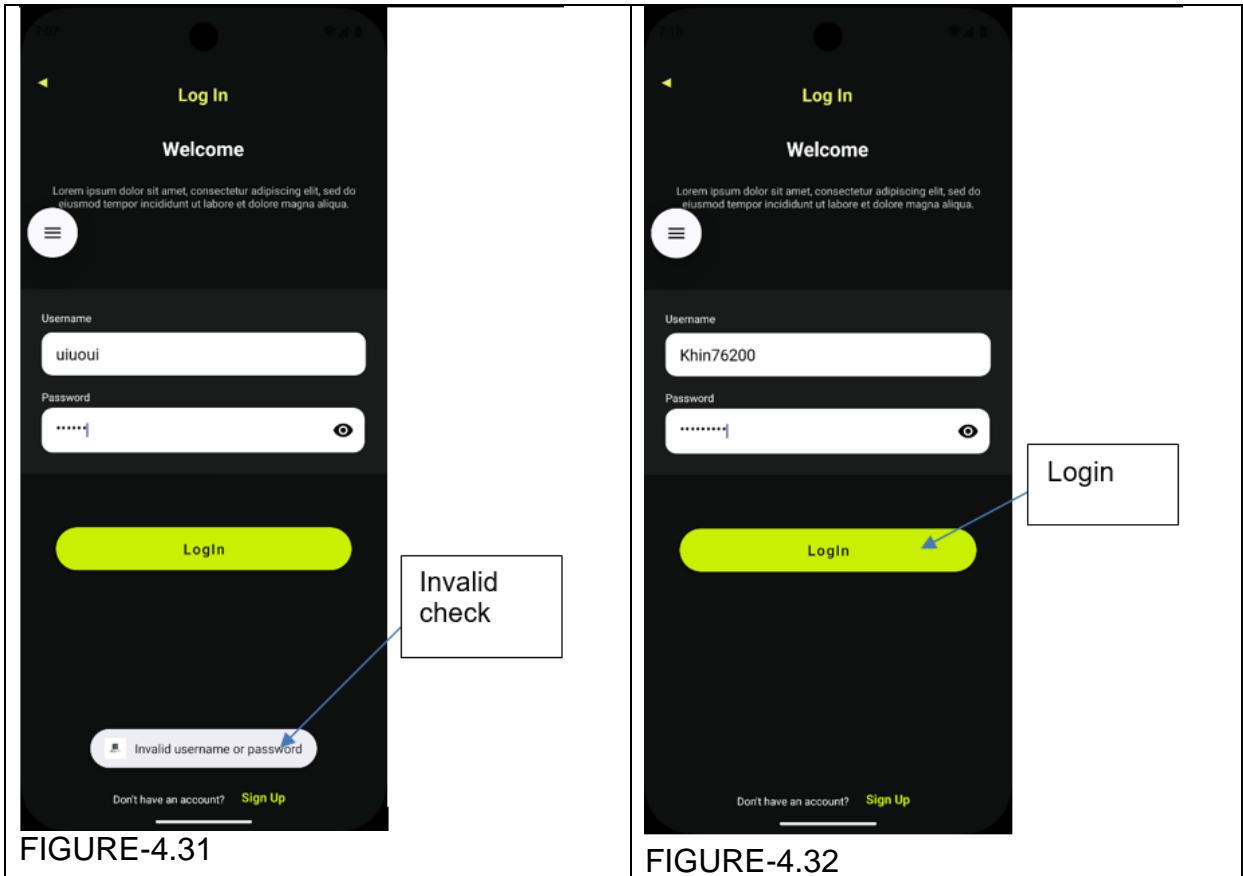


FIGURE-4.30



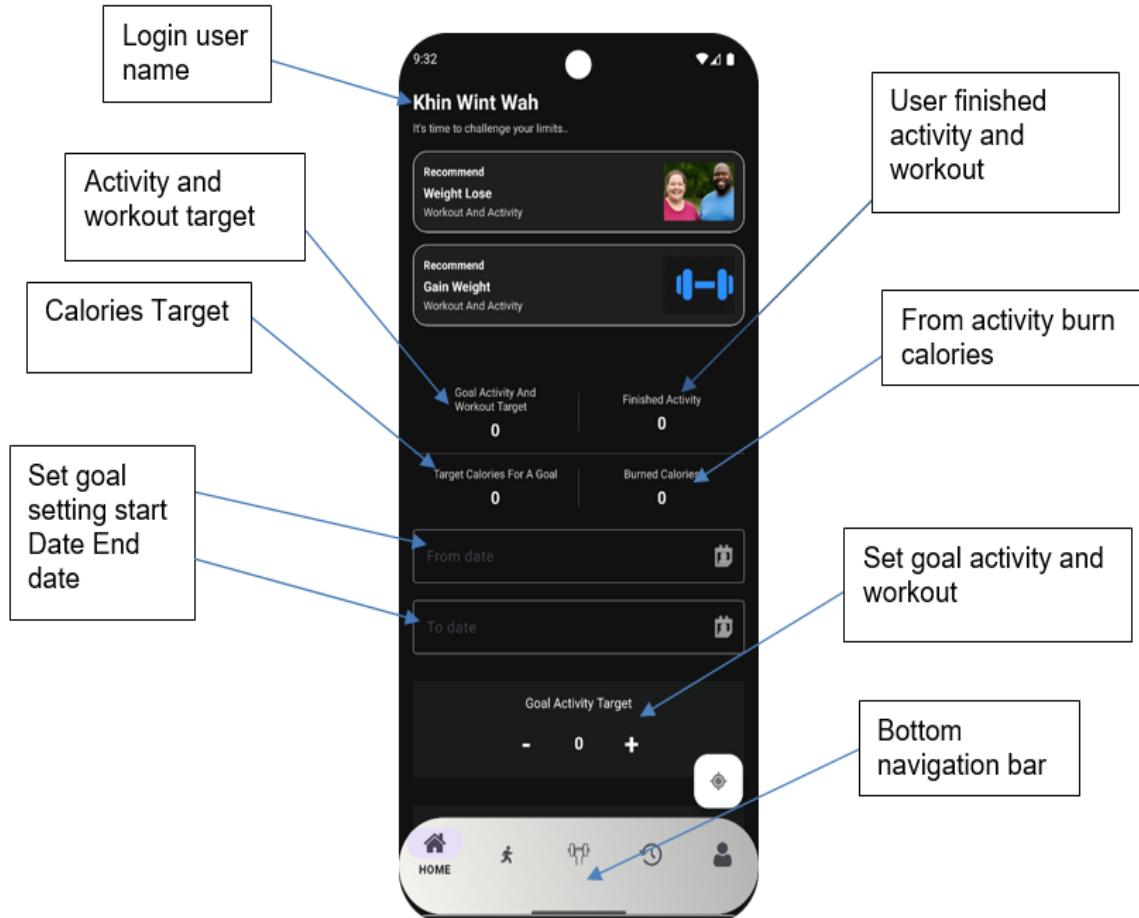


FIGURE-4.34

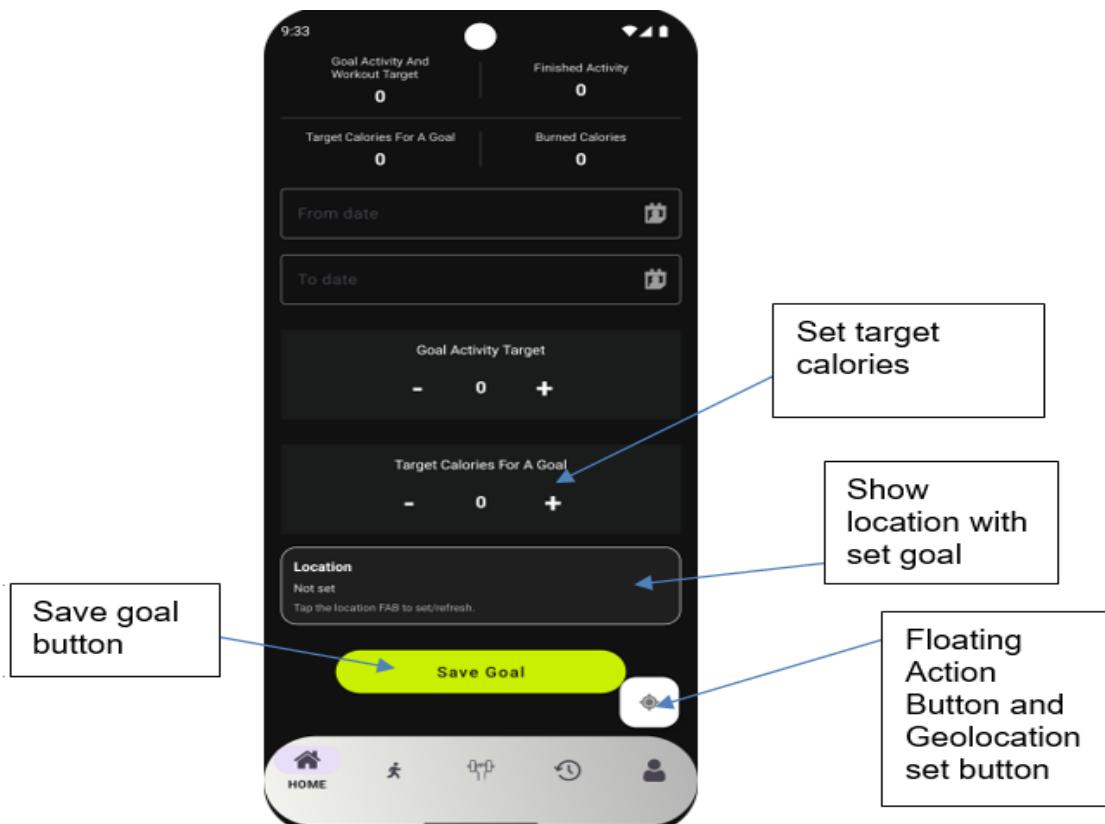


FIGURE-4.35

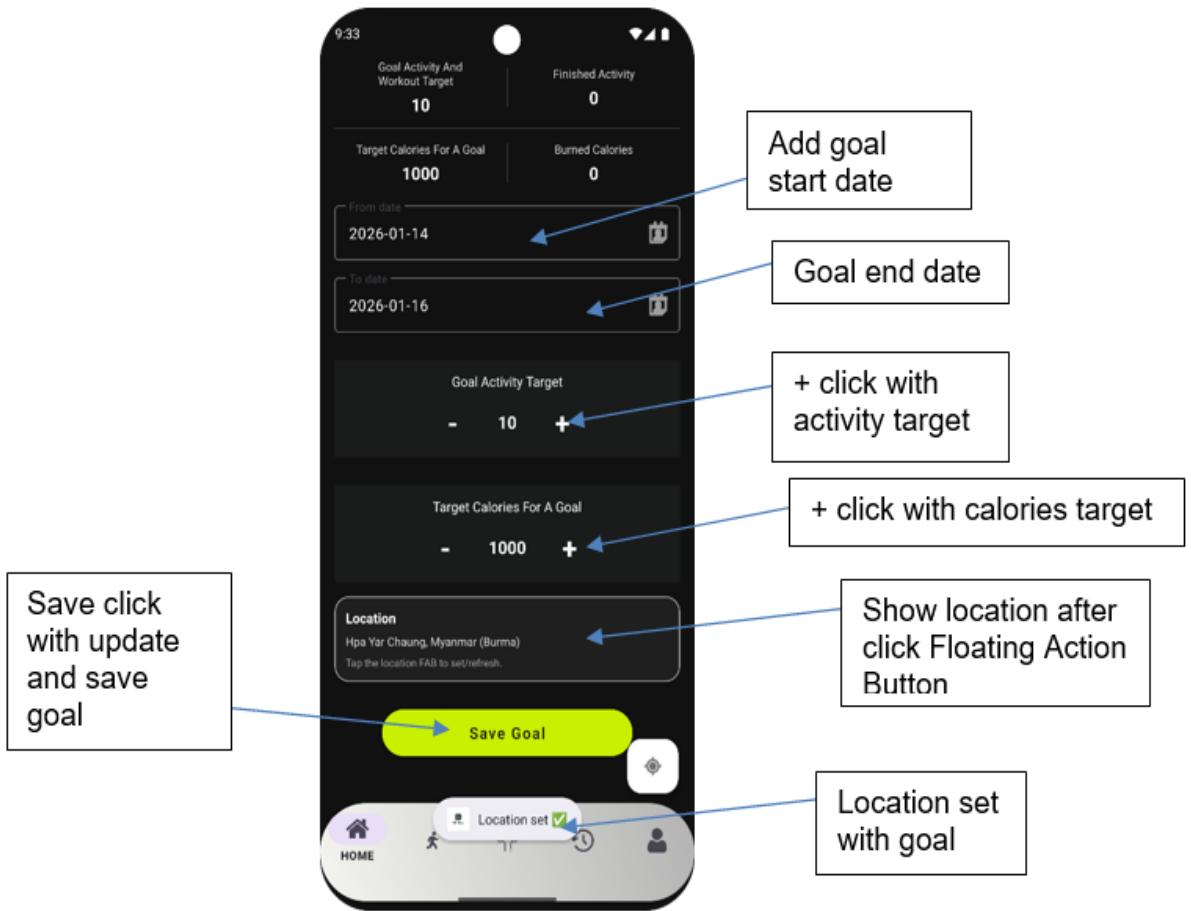


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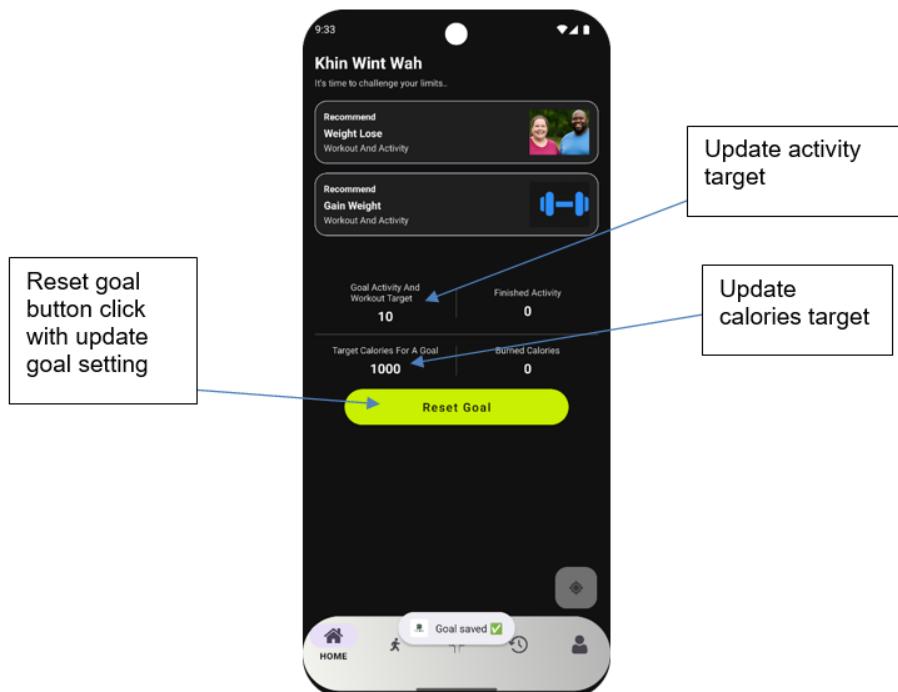


FIGURE-4.37

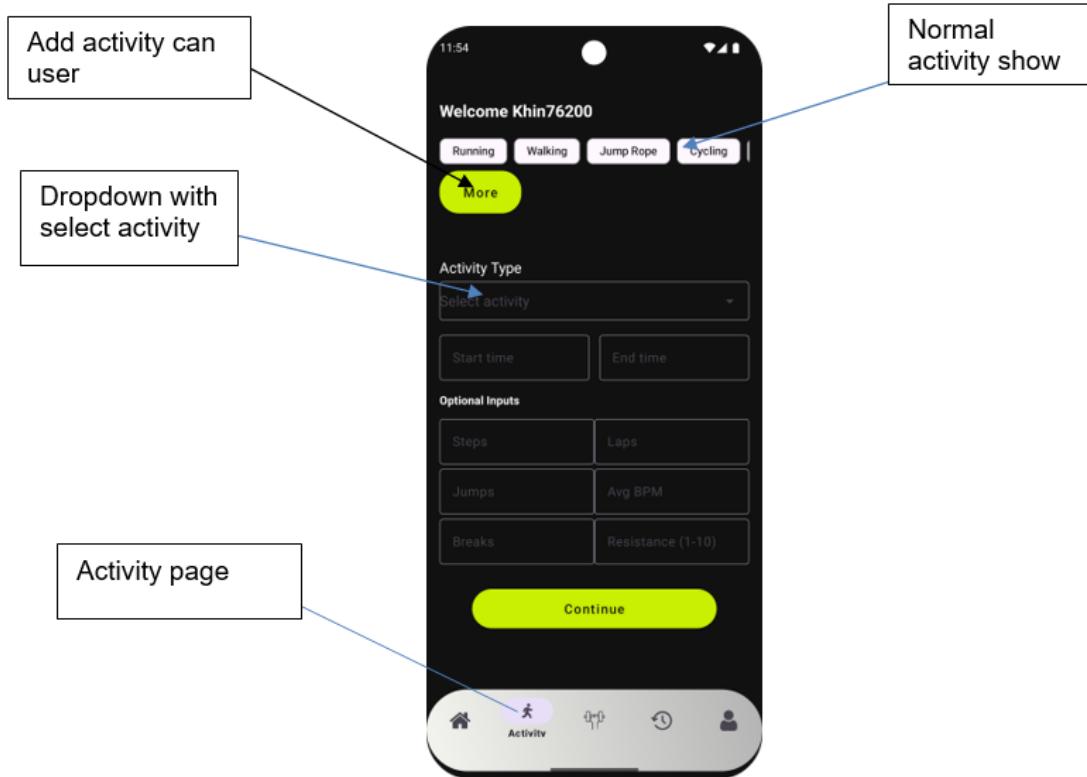


FIGURE-4.38

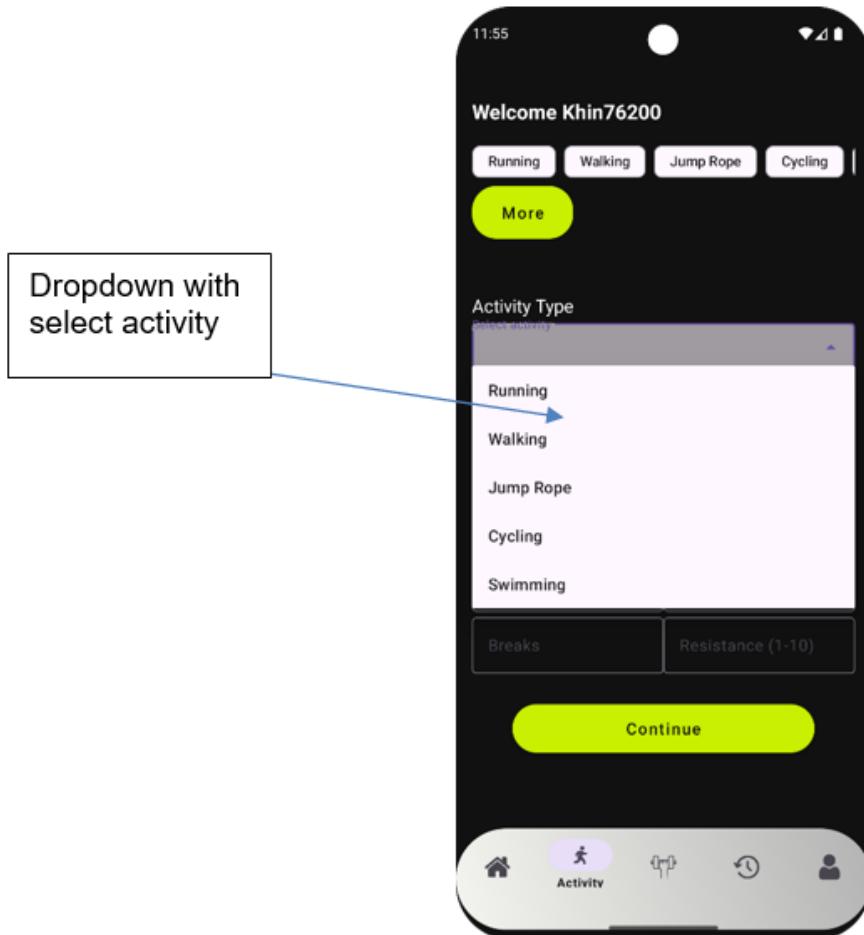


FIGURE-4.39

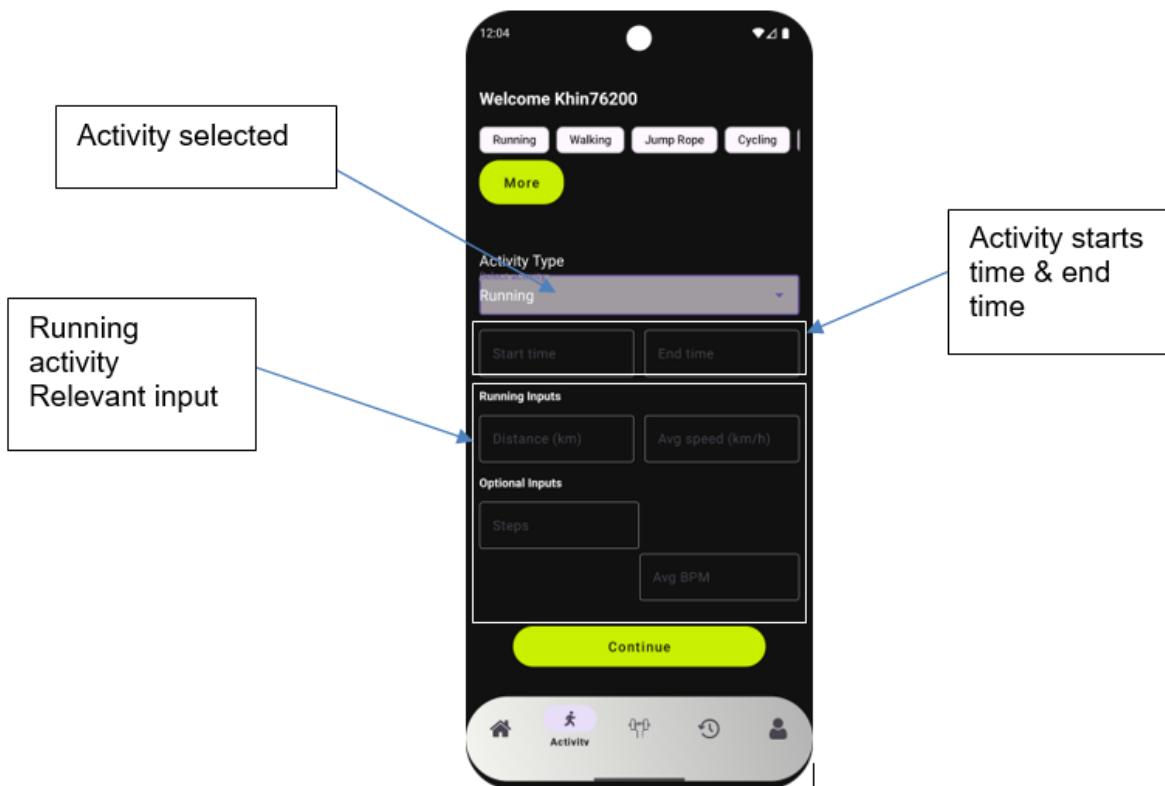


FIGURE-4.40

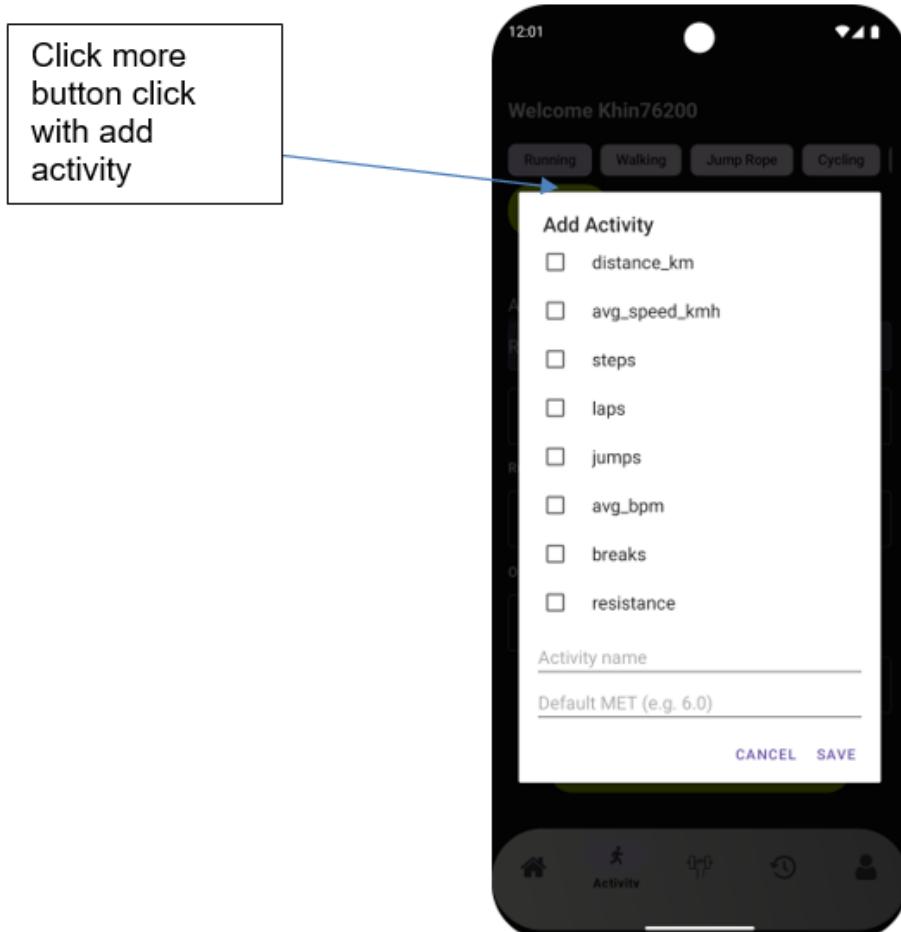


FIGURE-4.41

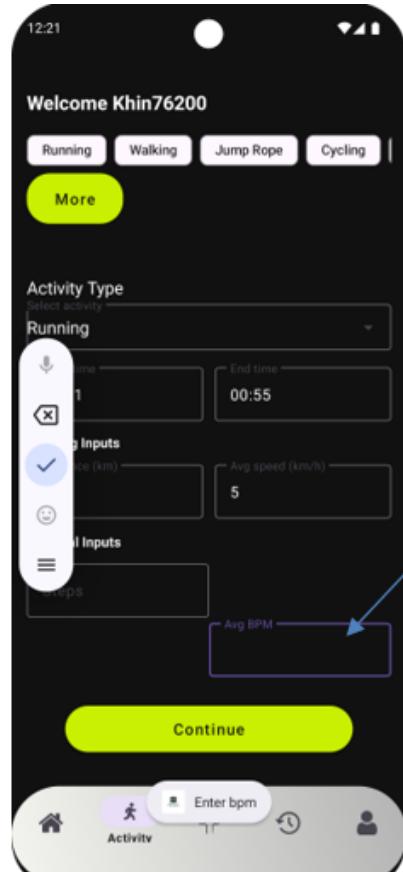


FIGURE-4.42

FIGURE-4.43

FIGURE-4.44

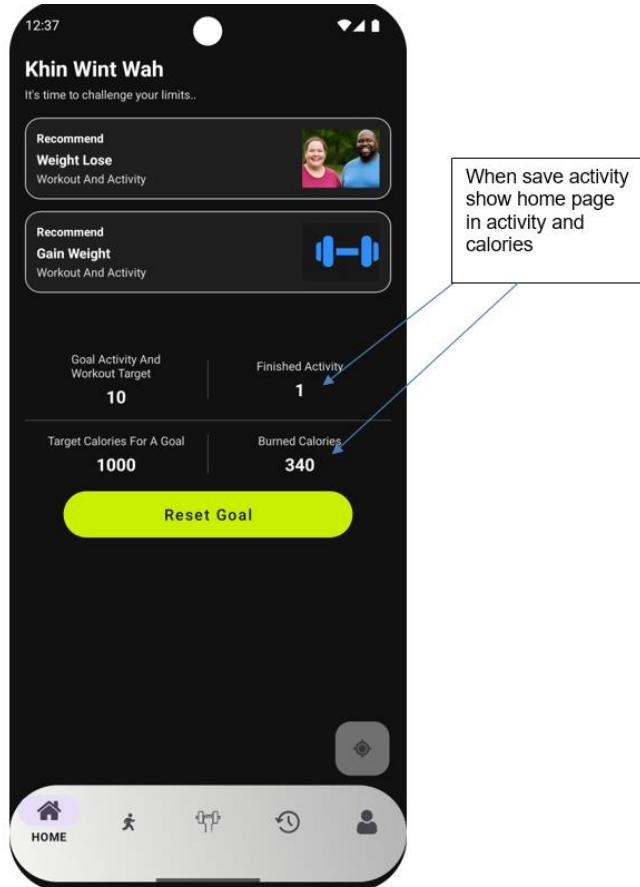


FIGURE-4.45

Dropdown with select workout

Workout start time & end time

workout Relevant input

Workout page

FIGURE-4.46

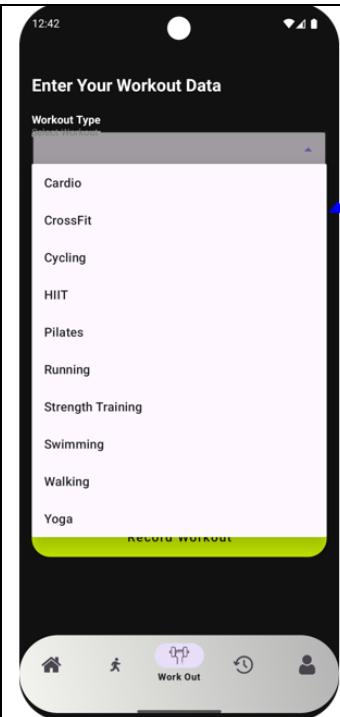


FIGURE-4.47

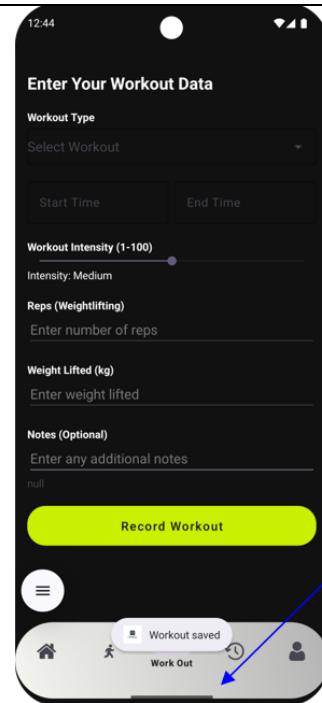


FIGURE-4.48

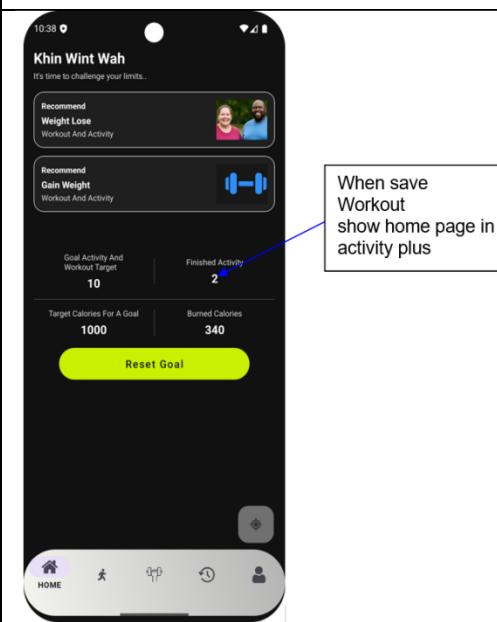


FIGURE-4.49

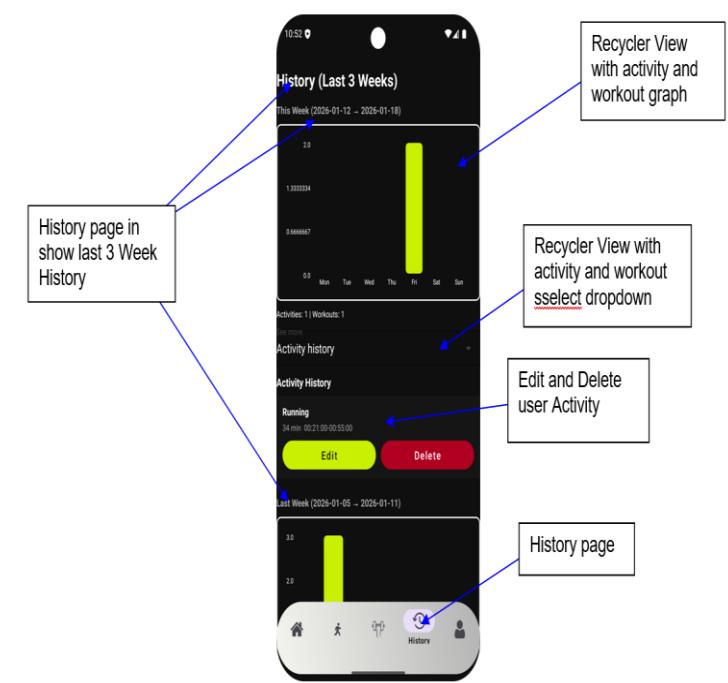
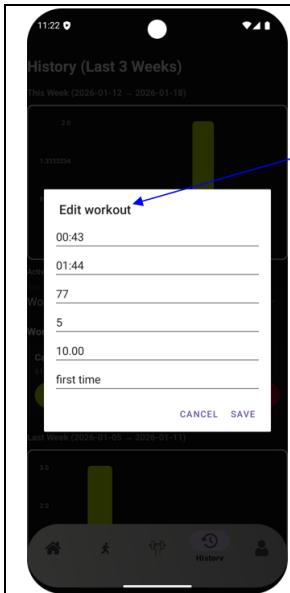
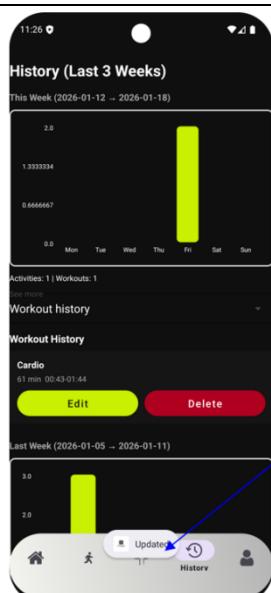


FIGURE-4.50



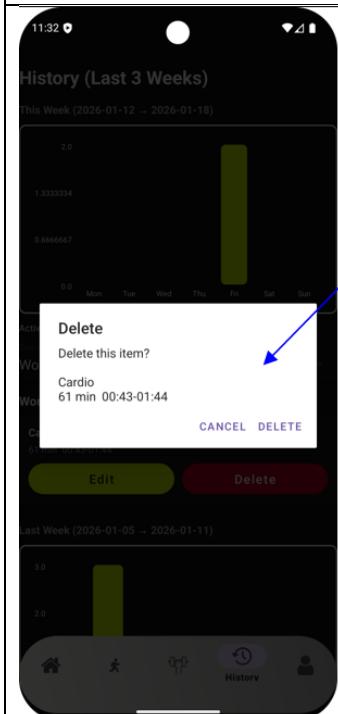
Click edit button
with edit workout
data update



Workout data edit
access

FIGURE-4.51

FIGURE-4.52



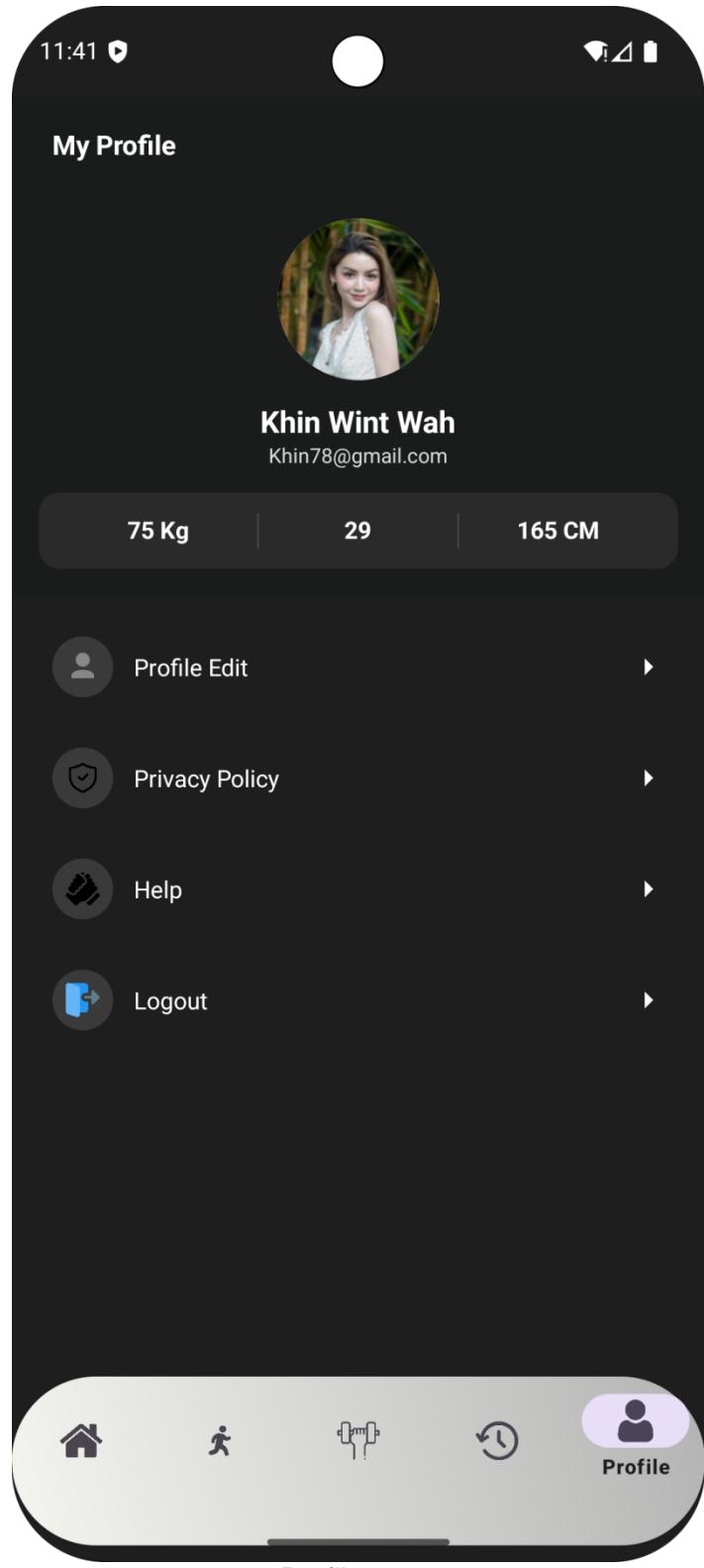
Dialog Box
with show



Delete
access

FIGURE-4.53

FIGURE-4.54



Profile page
FIGURE-4.55

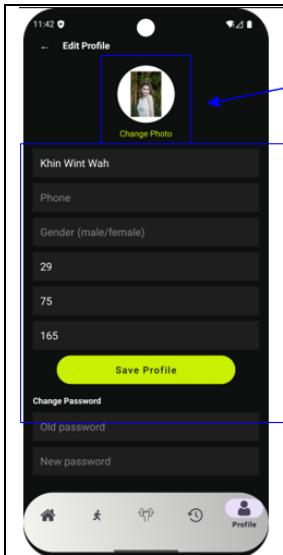


FIGURE-4.56

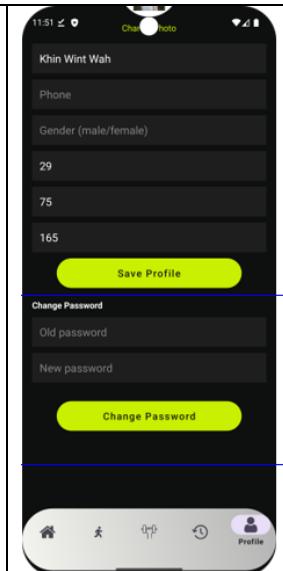


FIGURE-4.57

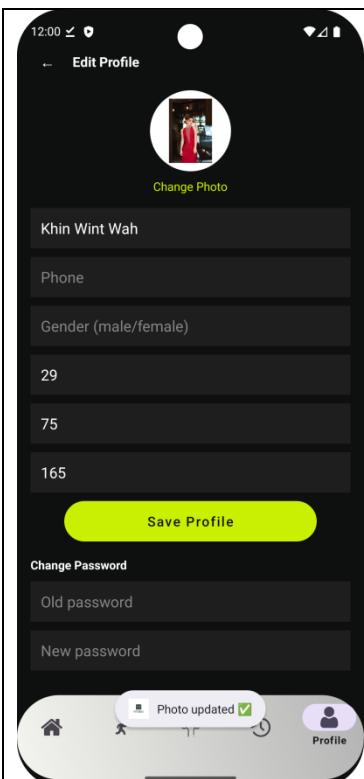


FIGURE-4.58
Photo update

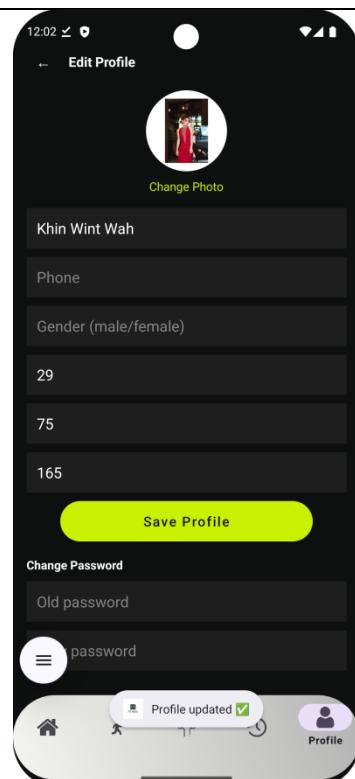


FIGURE-4.59
Profile data update

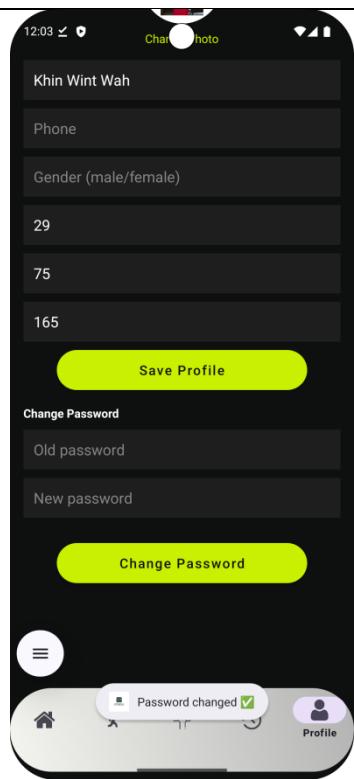


FIGURE-4.60
Password update

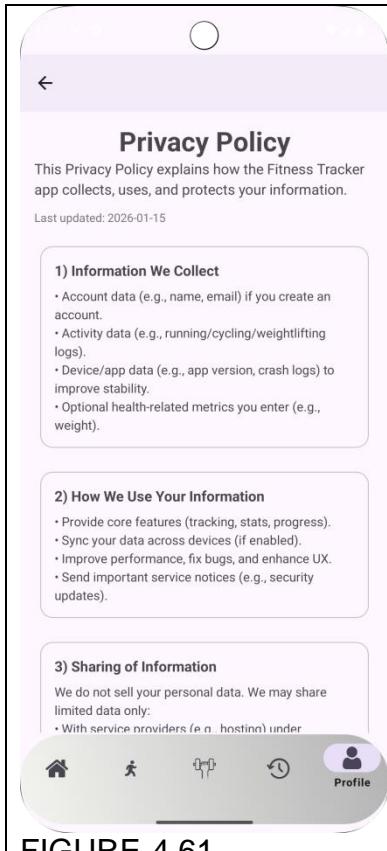


FIGURE-4.61
Privacy policy page

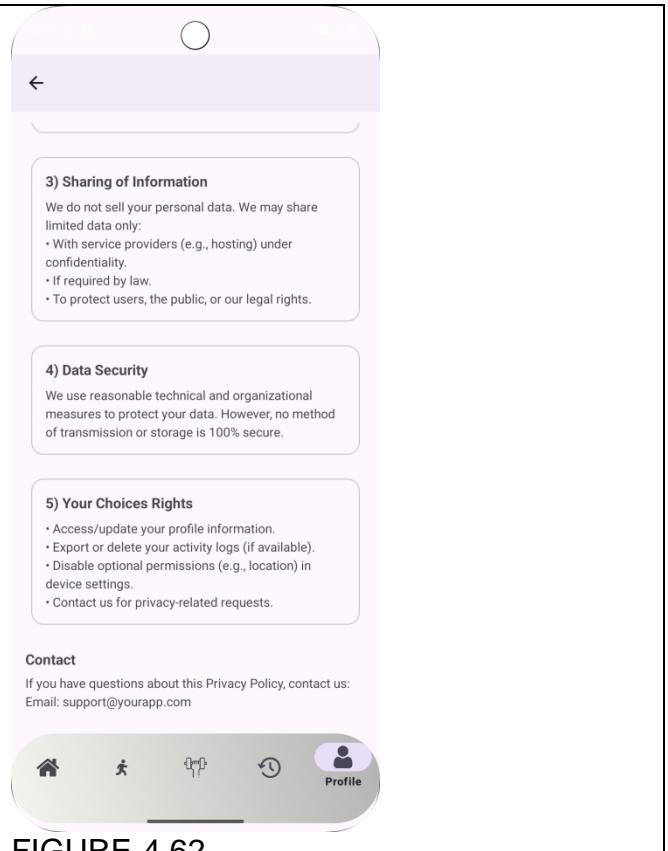


FIGURE-4.62
Privacy policy page

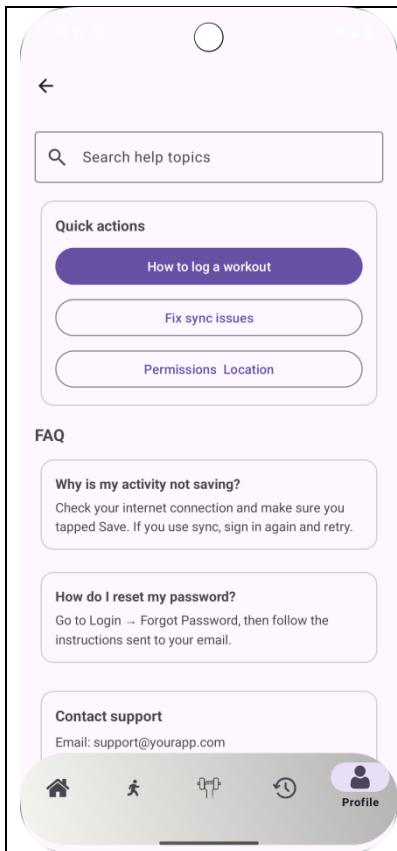


FIGURE-4.63
Help & FAQ page

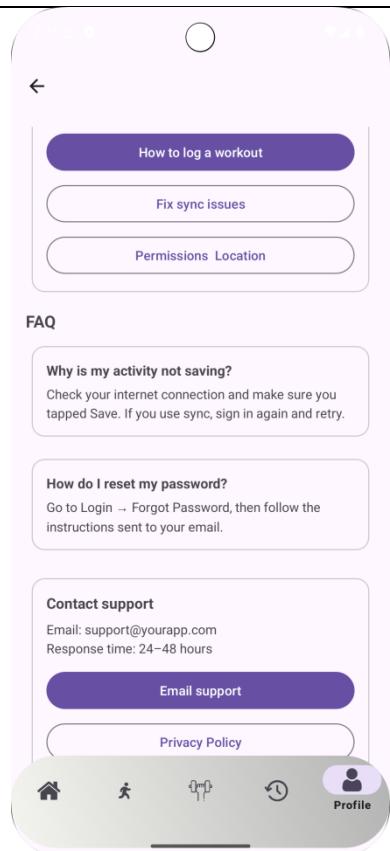


FIGURE-4.64
Help & FAQ page

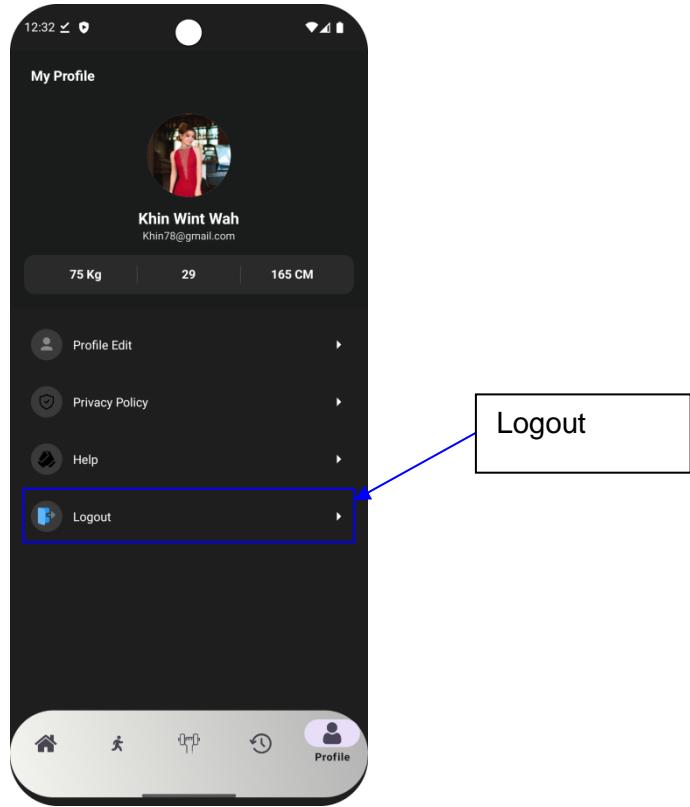


FIGURE-4.65

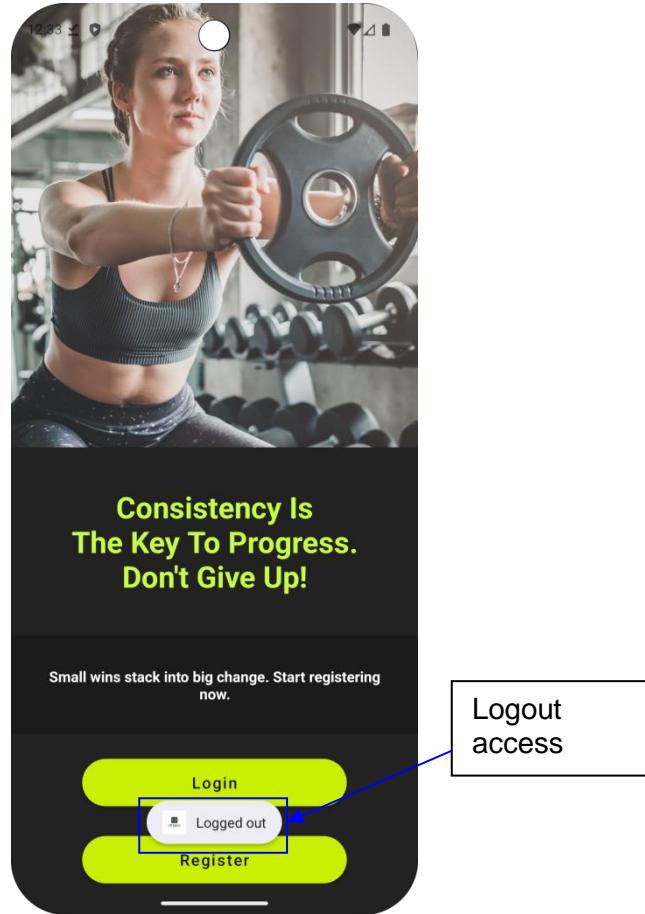
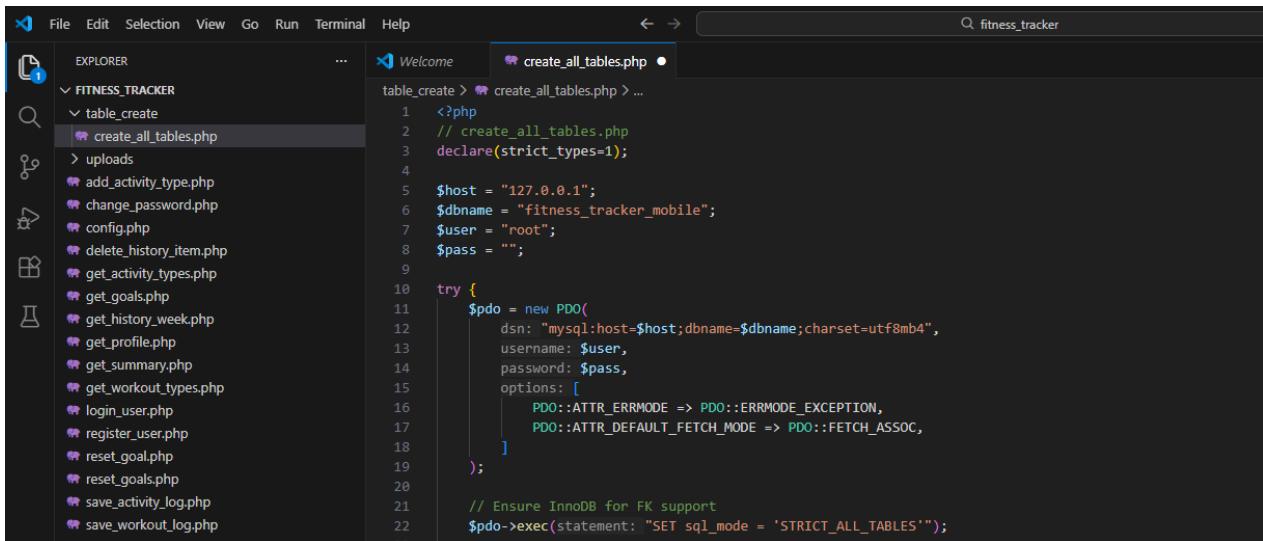


FIGURE-4.66

B. Database



The screenshot shows a code editor interface with a sidebar labeled "EXPLORER" containing a file tree for a "FITNESS_TRACKER" project. The tree includes a "table_create" folder which contains a file named "create_all_tables.php". This file is currently selected and displayed in the main editor area. The code in the editor is as follows:

```
1 <?php
2 // create_all_tables.php ...
3 declare(strict_types=1);
4
5 $host = "127.0.0.1";
6 $dbname = "fitness_tracker_mobile";
7 $user = "root";
8 $pass = "";
9
10 try {
11     $pdo = new PDO(
12         dsn: "mysql:host=$host;dbname=$dbname;charset=utf8mb4",
13         username: $user,
14         password: $pass,
15         options: [
16             PDO::ATTR_ERRMODE => PDO::ERRMODE_EXCEPTION,
17             PDO::ATTR_DEFAULT_FETCH_MODE => PDO::FETCH_ASSOC,
18         ]
19     );
20
21     // Ensure InnoDB for FK support
22     $pdo->exec(statement: "SET sql_mode = 'STRICT_ALL_TABLES'");
23 }
```

FIGURE-4.67

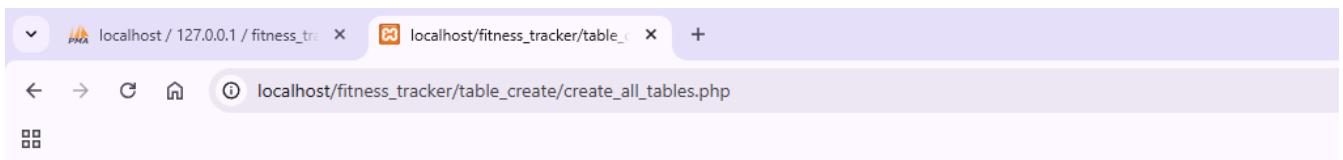


FIGURE-4.68

User table create code

```
// 1) users
$stmt->exec(statement: "
CREATE TABLE IF NOT EXISTS users (
    id INT(11) NOT NULL AUTO_INCREMENT,
    full_name VARCHAR(100) NOT NULL,
    username VARCHAR(50) NOT NULL,
    email VARCHAR(120) NOT NULL,
    password_hash VARCHAR(255) NOT NULL,
    phone VARCHAR(30) NOT NULL,
    gender ENUM('male','female') NULL,
    age INT(11) NULL,
    weight_kg INT(11) NULL,
    height_cm INT(11) NULL,
    goal VARCHAR(50) NULL,
    activity_level VARCHAR(50) NULL,
    created_at TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP,
    profile_image VARCHAR(255) NULL,
    PRIMARY KEY (id),
    UNIQUE KEY uk_users_username (username),
    UNIQUE KEY uk_users_email (email)
) ENGINE=InnoDB
DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;
");
```

FIGURE-4.69

Database user table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	full_name	varchar(100)	utf8mb4_general_ci		No	None		Change Drop More	
3	username	varchar(50)	utf8mb4_general_ci		No	None		Change Drop More	
4	email	varchar(120)	utf8mb4_general_ci		No	None		Change Drop More	
5	password_hash	varchar(255)	utf8mb4_general_ci		No	None		Change Drop More	
6	phone	varchar(30)	utf8mb4_general_ci		No	None		Change Drop More	
7	gender	enum('male','female')	utf8mb4_general_ci		Yes	NULL		Change Drop More	
8	age	int(11)			Yes	NULL		Change Drop More	
9	weight_kg	int(11)			Yes	NULL		Change Drop More	
10	height_cm	int(11)			Yes	NULL		Change Drop More	
11	goal	varchar(50)	utf8mb4_general_ci		Yes	NULL		Change Drop More	
12	activity_level	varchar(50)	utf8mb4_general_ci		Yes	NULL		Change Drop More	
13	created_at	timestamp			No	current_timestamp()		Change Drop More	
14	profile_image	varchar(255)	utf8mb4_general_ci		Yes	NULL		Change Drop More	

FIGURE-4.70

Insert user and password hash

Showing rows 0 - 3 (4 total). Query took 0.0003 seconds.													
SELECT * FROM `users`													
<input type="checkbox"/> Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]													
<input type="checkbox"/> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None													
id	full_name	username	email	password_hash	phone	gender	age	weight_kg	height_cm	goal	activity_level	created_at	profile_image
1	Ye Myat Kyaw	Ye70200	yemyat70@gmail.com	\$2y\$10\$7cP29HXhRYOVl4MfueQFGNH23A9/TNAf4Y5o...	09702007221	male	22	92	143	Lose Weight	Beginner	2020-01-06 02:17:03	uploads/profile/u_1_1767643671_3608.jpg
2	Thin Zar Wint Kyaw	Thin70200	thinzar70@gmail.com	\$2y\$10\$3ZhLjFOMMan04d1pgBhPugZTylKpSIE4f5UWVX...	09702007221	male	29	73	100	Lose Weight	Advance	2020-01-06 02:44:02	uploads/profile/u_2_1767644082_4038.jpg
3	Khin Wint Wah	Khin70200	Khin70200@gmail.com	\$2y\$10\$9.YKBHdtHVCMizMlyWeKKGYWhbPnPn70BBob...	09702007229	female	29	75	165	Lose Weight	Advance	2020-01-06 03:42:39	uploads/profile/u_3_1768541434_8040.jpg
4	May Myint Mo	May70200	May70@gmail.com	\$2y\$10\$AYyb6ChyXyUq7Gw2a.guTgTyMCTZvJ9qjVxctwub...	09702007221	female	28	75	165	Lose Weight	Beginner	2020-01-06 04:10:51	uploads/profile/u_4_1767649426_1905.jpg

FIGURE-4.71

Activity types table create code

```
// 2) activity_types
$stmt->exec("
CREATE TABLE IF NOT EXISTS activity_types (
    id INT(11) NOT NULL AUTO_INCREMENT,
    name VARCHAR(50) NOT NULL,
    is_featured TINYINT(1) NOT NULL DEFAULT 0,
    sort_order INT(11) NOT NULL DEFAULT 0,
    created_by_user_id INT(11) DEFAULT NULL,
    default_met DECIMAL(5,2) DEFAULT NULL,
    field_keys_json TEXT DEFAULT NULL,
    created_at TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP,
    PRIMARY KEY (id),
    KEY idx_activity_types_created_by_user_id (created_by_user_id),
    CONSTRAINT fk_activity_types_user
        FOREIGN KEY (created_by_user_id) REFERENCES users(id)
        ON DELETE SET NULL ON UPDATE CASCADE
) ENGINE=InnoDB
DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;
");
```

FIGURE-4.72

Database Activity types table

The screenshot shows the 'Table structure' view for the 'activity_types' table in MySQL Workbench. The table has 8 columns:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	<code>id</code>	<code>int(11)</code>	<code>utf8mb4_general_ci</code>		No	<code>None</code>		<code>AUTO_INCREMENT</code>	Change Drop More
2	<code>name</code>	<code>varchar(50)</code>	<code>utf8mb4_general_ci</code>		No	<code>None</code>			Change Drop More
3	<code>is_featured</code>	<code>tinyint(1)</code>			No	0			Change Drop More
4	<code>sort_order</code>	<code>int(11)</code>			No	0			Change Drop More
5	<code>created_by_user_id</code>	<code>int(11)</code>			Yes	<code>NULL</code>			Change Drop More
6	<code>default_met</code>	<code>decimal(5,2)</code>			Yes	<code>NULL</code>			Change Drop More
7	<code>field_keys_json</code>	<code>text</code>	<code>utf8mb4_general_ci</code>		Yes	<code>NULL</code>			Change Drop More
8	<code>created_at</code>	<code>timestamp</code>			No	<code>current_timestamp()</code>			Change Drop More

FIGURE-4.73

Insert Activity types table

The screenshot shows the 'Data' tab for the 'activity_types' table in MySQL Workbench. The table contains the following data:

#	<code>id</code>	<code>name</code>	<code>is_featured</code>	<code>sort_order</code>	<code>created_by_user_id</code>	<code>default_met</code>	<code>field_keys_json</code>	<code>created_at</code>
1	1	Running	1	1	NULL	8.00	[{"distance_km": "avg_speed_kmh", "avg_bpm": "steps"}]	2026-01-06 02:14:39
2	2	Walking	1	2	NULL	3.50	[{"distance_km": "steps", "avg_bpm": ""}]	2026-01-06 02:14:39
3	3	Jump Rope	1	3	NULL	12.00	[{"jumps": "avg_bpm"}]	2026-01-06 02:14:39
4	4	Cycling	1	4	NULL	6.80	[{"distance_km": "avg_speed_kmh", "avg_bpm": "resistan..."}]	2026-01-06 02:14:39
5	5	Swimming	1	5	NULL	7.00	[{"distance_km": "laps", "avg_bpm": ""}]	2026-01-06 02:14:39

FIGURE-4.74

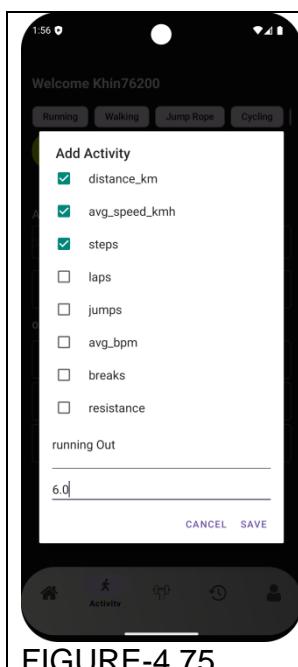


FIGURE-4.75

The screenshot shows the 'Data' tab for the 'activity_types' table in MySQL Workbench. The table contains the following data:

#	<code>id</code>	<code>name</code>	<code>is_featured</code>	<code>sort_order</code>	<code>created_by_user_id</code>	<code>default_met</code>	<code>field_keys_json</code>	<code>created_at</code>
1	1	Running	1	1	NULL	8.00	[{"distance_km": "avg_speed_kmh", "avg_bpm": "steps"}]	2026-01-06 02:14:39
2	2	Walking	1	2	NULL	3.50	[{"distance_km": "steps", "avg_bpm": ""}]	2026-01-06 02:14:39
3	3	Jump Rope	1	3	NULL	12.00	[{"jumps": "avg_bpm"}]	2026-01-06 02:14:39
4	4	Cycling	1	4	NULL	6.80	[{"distance_km": "avg_speed_kmh", "avg_bpm": "resistan..."}]	2026-01-06 02:14:39
5	5	Swimming	1	5	NULL	7.00	[{"distance_km": "laps", "avg_bpm": ""}]	2026-01-06 02:14:39
6	6	running Out	0	0	3	6.00	[{"distance_km": "avg_speed_kmh", "steps": ""}]	2026-01-16 13:56:54

FIGURE-4.76
Activity types table insert

Activity logs table create code

```
// 3) activity_logs
$stmt->exec($statement);
CREATE TABLE IF NOT EXISTS activity_logs (
    id INT(11) NOT NULL AUTO_INCREMENT,
    user_id INT(11) NOT NULL,
    activity_type_id INT(11) NOT NULL,
    log_date DATE NOT NULL DEFAULT (CURDATE()),
    start_time TIME NULL DEFAULT NULL,
    end_time TIME NULL DEFAULT NULL,
    duration_min INT(11) NOT NULL,
    calories_burned DECIMAL(10,2) NOT NULL DEFAULT 0.00,
    details_json LONGTEXT NULL DEFAULT NULL,
    created_at TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP,
    PRIMARY KEY (id),
    KEY idx_activity_logs_user_date (user_id, log_date),
    KEY idx_activity_logs_activity_type (activity_type_id),
    CONSTRAINT fk_activity_logs_user
        FOREIGN KEY (user_id) REFERENCES users(id)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CONSTRAINT fk_activity_logs_activity_type
        FOREIGN KEY (activity_type_id) REFERENCES activity_types(id)
        ON DELETE RESTRICT ON UPDATE CASCADE
) ENGINE=InnoDB
DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;
");
```

FIGURE-4.77

Database Activity logs table

The screenshot shows the 'Table structure' tab for the 'activity_logs' table. The table has 10 columns:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	user_id	int(11)			No	None			Change Drop More
3	activity_type_id	int(11)			No	None			Change Drop More
4	log_date	date			No	curdate()			Change Drop More
5	start_time	time			Yes	NULL			Change Drop More
6	end_time	time			Yes	NULL			Change Drop More
7	duration_min	int(11)			No	None			Change Drop More
8	calories_burned	decimal(10,2)			No	0.00			Change Drop More
9	details_json	longtext	utf8mb4_bin		Yes	NULL			Change Drop More
10	created_at	timestamp			No	current_timestamp()			Change Drop More

FIGURE-4.78

Insert Activity logs table

The screenshot shows the data inserted into the 'activity_logs' table:

		id	user_id	activity_type_id	log_date	start_time	end_time	duration_min	calories_burned	details_json	created_at
		1	1	1	2026-01-06	02:41:00	03:30:00	49	601.07	[{"key": "distance_km", "value": 4, "unit": "km"}, {"key": ...]	2026-01-06 02:42:00
		2	2	1	2026-01-06	02:58:00	03:58:00	60	584.00	[{"key": "distance_km", "value": 10, "unit": "km"}, {"key": ...]	2026-01-06 02:59:07
		3	3	1	2026-01-06	03:57:00	04:30:00	33	330.00	[{"key": "distance_km", "value": 20, "unit": "km"}, {"key": ...]	2026-01-06 03:58:13
		4	4	3	2026-01-06	04:26:00	04:55:00	29	435.00	[{"key": "jumps", "value": 40, "unit": "count"}, {"key": ...]	2026-01-06 04:27:10
		5	3	1	2026-01-06	05:40:00	06:00:00	20	200.00	[{"key": "distance_km", "value": 1, "unit": "km"}, {"key": ...]	2026-01-06 04:40:51
		6	3	1	2026-01-16	00:21:00	00:55:00	34	340.00	[{"key": "distance_km", "value": 6, "unit": "km"}, {"key": ...]	2026-01-16 00:29:53

FIGURE-4.79

Goal table create code

```
// 4) goals
$stmt->exec("
CREATE TABLE IF NOT EXISTS goals (
    id BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
    user_id INT(11) NOT NULL,
    daily_activity_target INT(10) UNSIGNED NOT NULL DEFAULT 0,
    daily_calories_target INT(10) UNSIGNED NOT NULL DEFAULT 0,
    start_date DATE NOT NULL,
    end_date DATE NOT NULL,
    created_at TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP,
    updated_at TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP,
    latitude DOUBLE NULL DEFAULT NULL,
    longitude DOUBLE NULL DEFAULT NULL,
    city VARCHAR(120) NULL DEFAULT NULL,
    country VARCHAR(120) NULL DEFAULT NULL,
    address_line VARCHAR(255) NULL DEFAULT NULL,
    PRIMARY KEY (id),
    KEY idx_goals_user (user_id),
    CONSTRAINT fk_goals_user
        FOREIGN KEY (user_id) REFERENCES users(id)
        ON DELETE CASCADE ON UPDATE CASCADE
) ENGINE=InnoDB
DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;
");
```

FIGURE-4.80

Database goal table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	<code>id</code>	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	<code>user_id</code>	int(11)			No	None			Change Drop More
3	<code>daily_activity_target</code>	int(10)		UNSIGNED	No	0			Change Drop More
4	<code>daily_calories_target</code>	int(10)		UNSIGNED	No	0			Change Drop More
5	<code>start_date</code>	date			No	None			Change Drop More
6	<code>end_date</code>	date			No	None			Change Drop More
7	<code>created_at</code>	timestamp			No	current_timestamp()			Change Drop More
8	<code>updated_at</code>	timestamp			No	current_timestamp()	ON UPDATE CURRENT_TIMESTAMP()		Change Drop More
9	<code>latitude</code>	double			Yes	NULL			Change Drop More
10	<code>longitude</code>	double			Yes	NULL			Change Drop More
11	<code>city</code>	varchar(120)	utf8mb4_general_ci		Yes	NULL			Change Drop More
12	<code>country</code>	varchar(120)	utf8mb4_general_ci		Yes	NULL			Change Drop More
13	<code>address_line</code>	varchar(255)	utf8mb4_general_ci		Yes	NULL			Change Drop More

With selected: Browse Change Drop Primary Unique Index Spatial Fulltext

FIGURE-4.81

Insert goal table

		<code>id</code>	<code>user_id</code>	<code>daily_activity_target</code>	<code>daily_calories_target</code>	<code>start_date</code>	<code>end_date</code>	<code>created_at</code>	<code>updated_at</code>	<code>latitude</code>	<code>longitude</code>	<code>city</code>	<code>country</code>	<code>address_line</code>
		1	1	13	940	2026-01-06	2026-01-08	2026-01-06 02:41:35	2026-01-06 02:41:35	16.810810810811	96.125966508153	Yangon	Myanmar (Burma)	R46G+999, Upper Kyi Myin Daing Rd, Yangon, Myanmar...
		2	2	15	1000	2026-01-06	2026-01-07	2026-01-06 02:58:41	2026-01-06 02:58:41	16.810810810811	96.125966508153	Yangon	Myanmar (Burma)	R46G+999, Upper Kyi Myin Daing Rd, Yangon, Myanmar...
		4	4	10	1600	2026-01-06	2026-01-08	2026-01-06 04:26:45	2026-01-06 04:26:45	16.728395	94.7319133	Pathein	Myanmar (Burma)	Hpa Yar Chaung, Myanmar (Burma)
		6	3	10	1000	2026-01-14	2026-01-16	2026-01-14 09:33:45	2026-01-14 09:33:45	16.728395	94.7319133	Pathein	Myanmar (Burma)	Hpa Yar Chaung, Myanmar (Burma)

FIGURE-4.82

Workout type table create code

```
// 5) workout_types
$pdo->exec(statement: "
    CREATE TABLE IF NOT EXISTS workout_types (
        id INT(11) NOT NULL AUTO_INCREMENT,
        name VARCHAR(255) NOT NULL,
        PRIMARY KEY (id),
        UNIQUE KEY uq_workout_types_name (name)
    ) ENGINE=InnoDB
    DEFAULT CHARSET=utf8mb4
    COLLATE=utf8mb4_general_ci;
");
```

FIGURE-4.83

Workout type table

Table structure									
#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	
2	name	varchar(255)	utf8mb4_general_ci		No	None			
<input type="checkbox"/> <input checked="" type="checkbox"/> Check all With selected: <input type="button" value="Browse"/> Primary Index Fulltext									

FIGURE-4.84

Insert workout type table

		id	name
<input type="checkbox"/>		1	Cardio
<input type="checkbox"/>		2	Strength Training
<input type="checkbox"/>		3	Yoga
<input type="checkbox"/>		4	Pilates
<input type="checkbox"/>		5	HIIT
<input type="checkbox"/>		6	Cycling
<input type="checkbox"/>		7	Swimming
<input type="checkbox"/>		8	CrossFit
<input type="checkbox"/>		9	Running
<input type="checkbox"/>		10	Walking

FIGURE-4.85

Workout data table create code

```
// 6) workout_data
$pdo->exec(statement: "
CREATE TABLE IF NOT EXISTS workout_data (
    id INT(11) NOT NULL AUTO_INCREMENT,
    user_id INT(11) NOT NULL,
    workout_type_id INT(11) NOT NULL,
    start_time VARCHAR(5) NULL DEFAULT NULL,
    end_time VARCHAR(5) NULL DEFAULT NULL,
    duration_minutes INT(11) NULL DEFAULT NULL,
    intensity INT(11) NULL DEFAULT NULL,
    reps INT(11) NULL DEFAULT NULL,
    weight_lifted DECIMAL(10,2) NULL DEFAULT NULL,
    notes TEXT NULL DEFAULT NULL,
    created_at TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP,
    PRIMARY KEY (id),
    KEY idx_workout_data_user (user_id),
    KEY idx_workout_data_type (workout_type_id),
    CONSTRAINT fk_workout_data_user
        FOREIGN KEY (user_id) REFERENCES users(id)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CONSTRAINT fk_workout_data_workout_type
        FOREIGN KEY (workout_type_id) REFERENCES workout_types(id)
        ON DELETE RESTRICT ON UPDATE CASCADE
) ENGINE=InnoDB
DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;
");

echo "All tables created successfully: users, activity_types, activity_logs, goals, workout_types, workout_data";

} catch (PDOException $e) {
    http_response_code(response_code: 500);
    echo "Error creating tables: " . $e->getMessage();
}
}
```

FIGURE-4.86

Workout data table

The screenshot shows the MySQL Workbench interface with the 'Table structure' tab selected for the 'workout_data' table. The table has 11 columns:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	user_id	int(11)			No	None			Change Drop More
3	workout_type_id	int(11)			No	None			Change Drop More
4	start_time	varchar(5)	utf8mb4_general_ci		Yes	NULL			Change Drop More
5	end_time	varchar(5)	utf8mb4_general_ci		Yes	NULL			Change Drop More
6	duration_minutes	int(11)			Yes	NULL			Change Drop More
7	intensity	int(11)			Yes	NULL			Change Drop More
8	reps	int(11)			Yes	NULL			Change Drop More
9	weight_lifted	decimal(10,2)			Yes	NULL			Change Drop More
10	notes	text	utf8mb4_general_ci		Yes	NULL			Change Drop More
11	created_at	timestamp			No	current_timestamp()			Change Drop More

At the bottom, there are buttons for 'Check all', 'With selected:', 'Edit', 'Copy', 'Delete', 'Primary', 'Unique', 'Index', 'Spatial', and 'Fulltext'.

FIGURE-4.87

Insert workout data table

The screenshot shows the MySQL Workbench interface with the 'Insert' tab selected for the 'workout_data' table. The table has 13 columns:

	id	user_id	workout_type_id	start_time	end_time	duration_minutes	intensity	reps	weight_lifted	notes	created_at
	1	1	4	02:42	03:00		18	100	5	5.00	2026-01-06 02:42:33
	2	2	3	02:59	03:59		60	21	0	10.00	2026-01-06 02:59:43
	3	3	8	03:58	04:20		22	59	4	10.00	2026-01-06 03:58:36
	4	4	5	04:27	05:27		60	50	2	20.00	2026-01-06 04:27:30

At the bottom, there are buttons for 'Check all', 'With selected:', 'Edit', 'Copy', 'Delete', and 'Export'.

FIGURE-4.88