

DMAD-1-03P: Introduction to Android Lab

Total Marks: 50
External Marks: 35
Internal Marks: 15
Credits: 2
Pass Percentage: 40%

P1: Hello World App

- **Function:** Displays “Hello, World!” on screen.
- **Main Tools:** TextView
- **XML Sample:**

```
<TextView
    android:text="Hello, World!"
    android:textSize="24sp"
    android:layout_gravity="center"
    android:layout_width="match_parent"
    android:layout_height="match_parent"/>
```

P2: Calculator App

- **Function:** Basic arithmetic: +, −, ×, ÷
- **Main Tools:** EditText, Buttons, TextView
- **Logic:** Use `Double.parseDouble()` and listeners on buttons to calculate.

P3: Tip Calculator App

- **Function:** Inputs: bill + tip %, Outputs: tip amount and total.
- **Main Tools:** SeekBar or EditText for percentage, and EditText for bill.

P4: Temperature Converter

- **Function:** Converts between Celsius ↔ Fahrenheit.
- **Formula:** $C = (F - 32) \times 5/9$ or $F = C \times 9/5 + 32$
- **UI:** Two EditTexts + RadioGroup or Switch.

P5: To-Do List App

- **Function:** Add/Edit/Delete tasks.
- **Tools:** RecyclerView + SQLite or Room for storage.

P6: Image Gallery Viewer

- **Function:** Thumbnail list → full-screen view on click.
- **Tools:** RecyclerView + Glide/Picasso library.

P7: Flashlight App

- **Function:** Toggle flashlight on/off.
- **Permissions:** `android.permission.CAMERA`
- **API:** Use `CameraManager` (API 23+).

P8: Dice Roller App

- **Function:** Simulate roll of 1–6.
- **Tools:** Random generator + ImageView with dice images.

P9: BMI Calculator

- **Function:** $BMI = \text{weight (kg)} / \text{height}^2 \text{ (m}^2\text{)}$
- **UI:** EditText + TextView
- **Feedback:** Underweight/Normal/Overweight based on result.

P10: Quiz App

- **Function:** MCQs with feedback.
- **Tools:** RadioGroup for options, score tracking.

P11: Currency Converter

- **Function:** Uses exchange rates (API like `exchangerate-api.com`)
- **Tools:** Retrofit/Volley + JSON parsing.

P12: Contact Viewer App

- **Function:** Displays contact list + Call button.
- **Permissions:** `android.permission.READ_CONTACTS`, `CALL_PHONE`

P13: Music Player App

- **Function:** Play/Pause/Next for local MP3s.
- **Tools:** `MediaPlayer` class + `ListView`.

P14: GPS Tracker

- **Function:** Show real-time location.
- **Permissions:** `ACCESS_FINE_LOCATION`
- **Tools:** `FusedLocationProviderClient`

P15: Camera App

- **Function:** Capture image and show preview.
- **Permissions:** `CAMERA`
- **Tools:** `Intent (MediaStore.ACTION_IMAGE_CAPTURE)`

P16: Bluetooth Chat App

- **Function:** Send/receive messages via Bluetooth.
- **Tools:** `BluetoothSocket` + `Threads`
- **Permissions:** `BLUETOOTH`, `BLUETOOTH_ADMIN`, `BLUETOOTH_CONNECT`

P17: Alarm Clock

- **Function:** Set time and trigger notification.
- **Tools:** `AlarmManager` + `BroadcastReceiver` + `NotificationManager`.

P18: Sensor Logger App

- **Function:** Logs accelerometer/gyroscope data.
- **Tools:** `SensorManager` + listeners.

P19: Gesture Detector App

- **Function:** Swipe, Pinch, Long Press actions.
- **Tools:** GestureDetector and ScaleGestureDetector.

P20: Weather App

- **Function:** Fetch weather by location.
- **API:** OpenWeatherMap API
- **Tools:** Location → Retrofit + JSON → UI update.