Dr. Divyanshu Health App - Deployment Guide

Quick Start

This guide will help you build and deploy the **Dr. Divyanshu – 5D Integrative Health** mobile application.

Prerequisites Checklist

Required Software

- [ ] **Flutter SDK** (3.5.4+) - Download
- [ ] **Android Studio** - Download
- [ ] **Java JDK** (11+) - Download
- [ ] **Git** - Download

System Requirements

- **OS**: Windows 10+, macOS 10.14+, or Linux
- **RAM**: 8GB minimum, 16GB recommended
- **Storage**: 10GB free space
- **Internet**: Required for initial setup

Step-by-Step Setup

1. Install Flutter

```
# Download Flutter SDK
git clone https://github.com/flutter/flutter.git -b stable
export PATH="$PATH:`pwd`/flutter/bin"

# Verify installation
flutter doctor
```

2. Setup Android Development

```
# Install Android Studio
# During installation, ensure these components are selected:
# - Android SDK
# - Android SDK Platform-Tools
# - Android SDK Build-Tools
# - Android SDK Command-line Tools

# Accept Android licenses
flutter doctor --android-licenses
```

3. Clone and Setup Project

```
# Clone the project
git clone <project-repository>
cd dr_divyanshu_health_app

# Install dependencies
flutter pub get

# Verify setup
flutter doctor
```

Building the Application

Debug Build (for Testing)

```
# Build debug APK
flutter build apk --debug

# Install on connected device
flutter install
```

Release Build (for Distribution)

```
# Build release APK
flutter build apk --release

# Build optimized APKs for different architectures
flutter build apk --split-per-abi --release
```

App Bundle (for Google Play Store)

```
# Build App Bundle
flutter build appbundle --release
```

Output Files

After successful build, you'll find:

APK Files

```
build/app/outputs/flutter-apk/
├── app-release.apk (Universal APK - ~50MB)
├── app-arm64-v8a-release.apk (64-bit ARM - ~25MB)
├── app-armeabi-v7a-release.apk (32-bit ARM - ~23MB)
└── app-x86_64-release.apk (64-bit Intel - ~27MB)
```

App Bundle

```
build/app/outputs/bundle/release/
└── app-release.aab (For Google Play Store)
```

Distribution Methods

Method 1: Direct APK Installation

Best for: Beta testing, internal distribution

1. **Share APK File**
2. Use `app-release.apk` for universal compatibility

3. Or use specific architecture APKs for smaller file size

4. **Installation Instructions for Users**
   ```

5. Download the APK file
6. Go to Settings > Security > Unknown Sources
7. Enable "Install from Unknown Sources"
8. Open the APK file and install ```
   ```

Method 2: Google Play Store

Best for: Public distribution

1. **Prepare App Bundle**
2. Use `app-release.aab` file
3. File size: ~15-20MB (optimized by Google Play)
4. **Google Play Console Setup**
5. Create developer account ($25 one-time fee)
6. Upload app bundle
7. Complete store listing
8. Submit for review
9. **Store Listing Requirements**
10. App icon (512x512 PNG)
11. Screenshots (phone and tablet)
12. Feature graphic (1024x500)
13. App description
14. Privacy policy URL

Method 3: Alternative App Stores

Options: Amazon Appstore, Samsung Galaxy Store, Huawei AppGallery

Backend Deployment

Local Backend Setup

```
 cd dr_divyanshu_backend
source venv/bin/activate
pip install -r requirements.txt
python src/main.py
```

Cloud Deployment Options

Option 1: Heroku (Free Tier Available)

```
# Install Heroku CLI
# Create Procfile in backend directory
echo "web: python src/main.py" > Procfile

# Deploy
heroku create dr-divyanshu-backend
git push heroku main
```

Option 2: Google Cloud Platform

```
# Create app.yaml for App Engine
gcloud app deploy
```

Option 3: AWS EC2

```
# Use AWS EC2 instance with Ubuntu
# Install Python, pip, and dependencies
# Run with gunicorn for production
```

Google Sheets Integration

Setup Steps

1. **Create Google Cloud Project**
2. Go to Google Cloud Console
3. Create new project: "Dr Divyanshu Health App"
4. **Enable APIs**
5. Enable Google Sheets API
6. Enable Google Drive API
7. **Create Service Account**
8. Go to IAM & Admin > Service Accounts
9. Create service account: "health-app-service"

10. Download JSON key file

11. **Setup Google Sheet**

12. Create new Google Sheet: "Consultation Data"
13. Share with service account email

14. Copy sheet ID from URL

15. **Configure Backend**

16. Place JSON key file in backend directory
17. Update `google_sheets_service.py` with credentials
18. Update sheet ID in configuration

Security Configuration

App Signing (for Release)

```
# Generate keystore
keytool -genkey -v -keystore dr-divyanshu-key.jks -keyalg RSA -keysize 2048 -validity 10000 -alias dr-divyanshu

# Configure in android/app/build.gradle
```

API Security

- Use HTTPS for all API calls
- Implement API key authentication
- Enable CORS for web access
- Use environment variables for secrets

Testing Checklist

Pre-Release Testing

- [ ] App installs successfully
- [ ] All 10 modules load correctly
- [ ] Consultation form submits data
- [ ] WhatsApp integration works
- [ ] E-books download properly
- [ ] Dark mode displays correctly

- [ ] Navigation between screens works
- [ ] Backend API responds correctly

Device Testing

- [ ] Android 8.0+ compatibility
- [ ] Different screen sizes (phone/tablet)
- [ ] Various Android manufacturers
- [ ] Network connectivity issues
- [ ] Offline functionality

Troubleshooting

Common Build Issues

"Android SDK not found"

```
export ANDROID_HOME=/path/to/android-sdk
export PATH=$PATH:$ANDROID_HOME/cmdline-tools/latest/bin
flutter doctor
```

"Gradle build failed"

```
cd android
./gradlew clean
cd ..
flutter clean
flutter pub get
flutter build apk
```

"Java version incompatible"

```
# Install Java 11
sudo apt install openjdk-11-jdk
export JAVA_HOME=/usr/lib/jvm/java-11-openjdk-amd64
```

Runtime Issues

"Network error"

- Check internet connection

- Verify backend URL in app configuration
- Ensure CORS is enabled on backend

"WhatsApp not opening"

- Verify WhatsApp is installed
- Check phone number format
- Test URL format: `https://wa.me/919695570344`

Performance Optimization

APK Size Reduction

```
# Enable R8 obfuscation
flutter build apk --release --obfuscate --split-debug-info=debug-info/

# Use split APKs
flutter build apk --split-per-abi --release
```

App Performance

- Enable tree shaking for unused code
- Optimize images and assets
- Use lazy loading for modules
- Implement caching for API responses

Support & Maintenance

Monitoring

- Set up crash reporting (Firebase Crashlytics)
- Monitor API performance
- Track user engagement
- Monitor app store reviews

Updates

- Regular security updates
- Feature enhancements based on user feedback
- Bug fixes and performance improvements
- Medical content updates

Launch Strategy

Soft Launch

1. **Internal Testing** (1 week)
2. Team members and close contacts
3. Test all features thoroughly
4. Fix critical bugs
5. **Beta Testing** (2 weeks)
6. Limited user group (50-100 users)
7. Gather feedback and analytics
8. Optimize based on usage patterns
9. **Public Launch**
10. Google Play Store submission
11. Marketing and promotion
12. User support setup

Marketing Materials

- App store screenshots
- Feature highlight videos
- Social media content
- Press release for health community

Final Checklist

Before going live, ensure:
- [ ] All features tested and working
- [ ] Backend deployed and stable
- [ ] Google Sheets integration configured
- [ ] App signed with release key
- [ ] Store listing completed
- [ ] Privacy policy published
- [ ] Support channels established
- [ ] Analytics and monitoring setup
- [ ] Backup and recovery plan ready

Congratulations! Your Dr. Divyanshu Health App is ready for deployment!

For technical support during deployment, refer to the main README.md or contact the development team.