FitFlow Production Deployment Guide

⬜ Pre-Production Changes Completed

Security Enhancements

- ⬜ **Signup Disabled**: Public registration blocked at backend (returns 403)
- ⬜ **Admin Auto-Creation**: Admin user automatically created on server startup
- ⬜ **Database Cleaned**: All test data removed, only admin user remains
- ⬜ **Auth UI Updated**: Login-only page (signup form removed)
- ⬜ **/diet Page Removed**: Cleaned up unused route
- ⬜ **Build Verified**: All 21 routes compile successfully

Automatic Plan Generation ⬜

- ⬜ **Daily Diet Generation**: Auto-generates diet plans at 2 AM daily for all active users
- ⬜ **Workout Plan Renewal**: Auto-checks expired plans at 3 AM and generates new cycles
- ⬜ **Progress-Based Adaptation**: Uses previous day's progress to adjust meal plans
- ⬜ **Admin Manual Triggers**: Test/trigger generation via API endpoints

> ⬜ **See AUTOMATIC_PLAN_GENERATION.md for detailed documentation**

Default Admin Credentials

```
Email: admin@fitflow.com
Password: ChangeMe123!
```

⚠ **IMPORTANT**: Change these credentials immediately after first login in production!

⬜ Deployment Steps

1. Push to GitHub Repository

```
cd /workspaces/gym_thon-front
git add .
git commit -m "Production ready: Disable signup, add admin auto-creation,
clean database"
git push origin main
```

2. Deploy Backend (Render or Railway)

Option A: Deploy to Render

1. Go to render.com and sign in

2. Click **New → Web Service**

3. Connect your GitHub repository

4. Configure:

   - **Name**: fitflow-api
   - **Root Directory**: `fitflow-api`
   - **Environment**: Node
   - **Build Command**: `npm install && npm run build`
   - **Start Command**: `npm start`
   - **Instance Type**: Free (or higher for production)

5. Add Environment Variables:

```
MONGODB_URI=mongodb+srv://thapanaresh8412_db_user:7ICWa95tey5Fxvn3@cluster
0.ptxfoed.mongodb.net/?retryWrites=true&w=majority&appName=Cluster0
JWT_SECRET=fitflow_jwt_secret_key_min_32_characters_long_2025
JWT_REFRESH_SECRET=fitflow_refresh_secret_key_min_32_chars_long_2025
CORS_ORIGIN=https://your-vercel-app.vercel.app
ADMIN_EMAIL=admin@fitflow.com
ADMIN_PASSWORD=ChangeMe123!
ADMIN_NAME=Administrator
OPENROUTER_API_KEY=sk-or-v1-
46ef8f1b838dc19f796a715c6475a5e4546671826e9d8dde3ab54981dba039f9
RAPIDAPI_KEY=0a3405b70dmsh1fe0338bfc08839p1a5ecajsndd07961137d8
NODE_ENV=production
PORT=4000
```

6. Deploy and note your backend URL (e.g., `https://fitflow-api.onrender.com`)

Option B: Deploy to Railway

1. Go to railway.app and sign in
2. Click **New Project → Deploy from GitHub repo**
3. Select your repository
4. Configure:
   - **Root Directory**: `fitflow-api`
   - Add the same environment variables as above
5. Deploy and note your backend URL

3. Deploy Frontend to Vercel

1. Go to vercel.com and sign in

2. Click **Add New → Project**

3. Import your GitHub repository

4. Configure:

- **Framework Preset**: Next.js
- **Root Directory**: `gym-app`
- **Build Command**: `npm run build`
- **Output Directory**: `.next`

5. Add Environment Variable:

```
NEXT_PUBLIC_API_BASE_URL=https://fitflow-api.onrender.com
```

(Replace with your actual backend URL from step 2)

6. Click **Deploy**
7. Note your frontend URL (e.g., `https://fitflow.vercel.app`)

4. Update Backend CORS

After deploying frontend:

1. Go back to your backend deployment (Render/Railway)
2. Update the `CORS_ORIGIN` environment variable:

```
CORS_ORIGIN=https://fitflow.vercel.app
```

(Replace with your actual Vercel URL)

3. Save and redeploy backend

5. Verify Deployment

1. **Visit Frontend URL**: Open your Vercel URL
2. **Test Login**:
   - Email: `admin@fitflow.com`
   - Password: `ChangeMe123!`
3. **Verify Features**:
   - ☐ Login works
   - ☐ No signup option visible
   - ☐ Admin dashboard accessible
   - ☐ Can generate workout/diet plans
   - ☐ User creation works (admin only)

6. Security Checklist

- ☐ Change default admin password immediately
- ☐ Verify signup returns 403 error
- ☐ Confirm CORS only allows your frontend domain
- ☐ Test that non-admin users cannot access admin routes
- ☐ Enable MongoDB Atlas IP whitelist (if needed)

- ☐ Set up domain SSL (automatically handled by Vercel/Render)

🔧 Backend Auto-Creation

The admin user is automatically created when the backend starts if no admin exists:

```
// In src/server.ts
async function ensureAdmin() {
  const adminEmail = ENV.ADMIN_EMAIL || 'admin@fitflow.com';
  const existingAdmin = await User.findOne({ email: adminEmail });

  if (!existingAdmin) {
    // Creates admin with hashed password from ENV variables
    console.log('🔐 Admin user created:', adminEmail);
  } else {
    console.log('🔐 Admin user exists:', adminEmail);
  }
}
```

This runs automatically on every deployment, ensuring admin access is always available.

🗄 Database Management

Reset Database (if needed)

To clear all non-admin data in production:

```
cd fitflow-api
# Set MONGODB_URI to your production database
export MONGODB_URI="your-production-mongodb-uri"
node scripts/reset_db.js
```

⚠ **WARNING**: This deletes all data except admin users. Use with caution in production!

🔑 Environment Variables Reference

Backend (fitflow-api)

Variable	Description	Required
MONGODB_URI	MongoDB connection string	☐ Yes
JWT_SECRET	JWT signing key (min 32 chars)	☐ Yes
JWT_REFRESH_SECRET	Refresh token key (min 32 chars)	☐ Yes

Variable	Description	Required
CORS_ORIGIN	Frontend URL for CORS	⬜ Yes
ADMIN_EMAIL	Auto-created admin email	⚠ Default: admin@fitflow.com
ADMIN_PASSWORD	Auto-created admin password	⚠ Default: ChangeMe123!
ADMIN_NAME	Auto-created admin name	⚠ Default: Administrator
OPENROUTER_API_KEY	AI plan generation key	⬜ Yes
RAPIDAPI_KEY	Exercise animation API	⬜ Yes
NODE_ENV	Environment mode	⚠ Default: development
PORT	Server port	⚠ Default: 4000

Frontend (gym-app)

Variable	Description	Required
NEXT_PUBLIC_API_BASE_URL	Backend API URL	⬜ Yes

⬜ Post-Deployment Tasks

1. **Change Admin Password**:

   - Login as admin
   - Go to Profile/Settings
   - Update password immediately

2. **Create Initial Users**:

   - Admin can create user accounts via `/users/add`
   - Each user gets unique login credentials

3. **Test Plan Generation**:

   - Generate sample workout plan
   - Generate sample diet plan
   - Verify AI generation works

4. **Monitor Logs**:

   - Check backend logs for errors
   - Verify admin creation message appears
   - Monitor API response times

⬜ Troubleshooting

"Signup disabled" error

 Expected behavior - Public signup is intentionally blocked

Admin auto-creation not working

- Check backend logs for "Admin user created" or "Admin user exists"
- Verify ADMIN_EMAIL, ADMIN_PASSWORD in environment variables
- Ensure MONGODB_URI is correct

CORS errors

- Verify CORS_ORIGIN matches exact frontend URL (no trailing slash)
- Check browser console for exact error message
- Redeploy backend after changing CORS_ORIGIN

Database connection failed

- Verify MONGODB_URI format and credentials
- Check MongoDB Atlas IP whitelist (allow 0.0.0.0/0 for cloud platforms)
- Test connection string locally first

Production URLs

Frontend: https://[your-app].vercel.app
Backend: https://[your-app].onrender.com or https://[your-app].railway.app
Database: MongoDB Atlas (cloud-hosted)

Admin Login: admin@fitflow.com / ChangeMe123! (change immediately!)

Features Available in Production

- Secure authentication (JWT-based)
- Admin-only user creation
- AI-powered workout generation
- AI-powered diet generation
- Progress tracking with active days
- Monthly workout/diet reports
- Exercise animations via RapidAPI
- Real-time meal and workout logging
- Role-based access control (admin/user)

 Ready to deploy! Follow the steps above to get FitFlow live in production.