

# Database Migration Complete - Authentication System

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## Overview

Successfully migrated the Stock Picking Agent to a full authentication system with user-specific portfolios.

## What Was Implemented

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### 1. Authentication System

- **NextAuth.js v4** with Prisma adapter
- Credential-based login (email + password)
- Password hashing with bcrypt
- JWT session management
- User registration with automatic portfolio creation

### 2. Database Schema Updates

#### New Models Added:

- **User**: Email, password, name
- **Account**: OAuth account linking (future use)
- **Session**: Session tracking
- **VerificationToken**: Email verification (future use)

#### Portfolio Model Enhanced:

- Added `userId` field for user ownership
- Added `isLocked` field for modification control
- Added unique constraint on `[userId, name]`

#### Stock Model Enhanced:

- Added `rating` field for user ratings
- Added `ratingUpdatedAt` timestamp
- Linked to portfolios via `portfolioId`

### 3. API Routes Updated

All portfolio and stock API routes now:

- Verify user authentication
- Check portfolio ownership
- Filter data by user
- Return appropriate error codes

### 4. UI Components

#### New Pages:

- `/login` - User login page
- `/signup` - User registration page

## Updated Components:

- `SidebarNavigation` - Shows user profile and sign-out button
- `LayoutContent` - Conditionally renders navigation based on auth state
- `DashboardClient` - Displays user-specific data

## 5. Middleware

Protects all routes except:

- `/login`
- `/signup`
- `/api/auth/*`
- `/api/signup`

## Test Users Created

### Demo User

- **Email:** `demo@portfolio-intelligence.co.uk`
- **Password:** `demo123456`
- **Portfolios:** Default portfolios created automatically

### Test User

- **Email:** `john@doe.com`
- **Password:** `johndoe123`
- **Portfolios:** Default portfolios created automatically

## Build Issues Resolved

### Issue 1: Database Connection During Build

**Problem:** Build command tried to run `prisma db push` during Vercel build

**Solution:** Removed database operations from build command

**Status:** Fixed

### Issue 2: Yarn.lock Symlink

**Problem:** `yarn.lock` was a symlink that Vercel couldn't resolve

**Solution:** Replaced with actual 515KB file

**Status:** Fixed (recurring issue documented in `YARN_LOCK_ISSUE.md`)

### Issue 3: TypeScript userId Errors

**Problem:** Prisma queries didn't explicitly select `userId` field

**Solution:** Added explicit select statements for `userId` in all portfolio queries

**Status:** Fixed

### Issue 4: Prisma Client Not Regenerated

**Problem:** TypeScript couldn't find `userId` in `Portfolio` type

**Solution:** Ran `yarn prisma generate` to regenerate Prisma client

**Status:** Fixed

## Current Build Status

- ✓ **TypeScript Compilation:** PASSING
- ✓ **Production Build:** SUCCESSFUL
- ✓ **All API Routes:** FUNCTIONAL
- ✓ **Authentication:** WORKING
- ✓ **User-Specific Data:** WORKING

## Database Commands

### Generate Prisma Client

```
cd nextjs_space
yarn prisma generate
```

### Push Schema Changes

```
cd nextjs_space
yarn prisma db push
```

### Create Migration

```
cd nextjs_space
yarn prisma migrate dev --name description_of_changes
```

### Seed Database

```
cd nextjs_space
yarn prisma db seed
```

## Environment Variables Required

### Development (.env)

```
DATABASE_URL="postgresql://..."
NEXTAUTH_SECRET="your-secret-key"
NEXTAUTH_URL="http://localhost:3000"
```

### Production (Vercel)

```
DATABASE_URL="postgresql://..."
NEXTAUTH_SECRET="your-secret-key"
NEXTAUTH_URL="https://portfolio-intelligence.co.uk"
```

## Vercel Deployment Checklist

- ✓ Environment variables configured
- ✓ yarn.lock is a regular file (not symlink)

- Build command doesn't include database operations
- Prisma client regenerates via postinstall script
- Database schema is up to date
- All TypeScript errors resolved

## Key Files Modified

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### Database

- `prisma/schema.prisma` - Added User, Portfolio, Stock fields
- `scripts/seed.ts` - Creates test users and portfolios

### Authentication

- `lib/auth.ts` - NextAuth configuration
- `app/api/auth/[...nextauth]/route.ts` - Auth endpoints
- `app/api/signup/route.ts` - User registration
- `app/login/page.tsx` - Login page
- `app/signup/page.tsx` - Signup page
- `middleware.ts` - Route protection

### API Routes (User-Aware)

- `app/api/portfolios/route.ts` - List/create portfolios
- `app/api/portfolios/[id]/route.ts` - Update/delete portfolios
- `app/api/portfolios/[id]/stocks/[stockId]/route.ts` - Stock operations
- `app/api/stock/move/route.ts` - Move stocks between portfolios
- `app/api/stock/update-rating/route.ts` - Update stock ratings

### UI Components

- `components/layout-content.tsx` - Conditional navigation
- `components/sidebar-navigation.tsx` - User profile display
- `app/providers.tsx` - SessionProvider wrapper
- `app/layout.tsx` - Root layout with providers

## Testing the System

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### 1. Test Signup

```
# Visit http://localhost:3000/signup
# Create new account
# Verify redirect to dashboard
# Check portfolios are created
```

### 2. Test Login

```
# Visit http://localhost:3000/login
# Use demo@portfolio-intelligence.co.uk / demo123456
# Verify redirect to dashboard
# Check user-specific data loads
```

### 3. Test Authorization

```
# Try accessing /dashboard without login
# Should redirect to /login
# Login and verify access granted
```

### 4. Test Portfolio Operations

```
# Create new portfolio
# Add stocks to portfolio
# Switch between portfolios
# Verify data isolation between users
```

## Known Issues

### **Yarn.lock Symlink Reversion**

**Issue:** yarn.lock reverts to symlink after checkpoint operations

**Impact:** Breaks Vercel builds

**Workaround:** Replace with actual file before each push

**Documentation:** See YARN\_LOCK\_ISSUE.md

### **Session Provider on Auth Pages**

**Issue:** SessionProvider caused hydration errors on login/signup pages

**Solution:** Conditional rendering in LayoutContent component

**Status:** Resolved

## Next Steps

### Optional Enhancements

1. **Email Verification:** Implement email verification for new users
2. **Password Reset:** Add forgot password functionality
3. **OAuth Providers:** Add Google/GitHub login options
4. **User Profile:** Add profile editing page
5. **Portfolio Sharing:** Allow users to share portfolios

### Performance Optimizations

1. **Caching:** Implement Redis for session caching
2. **Pagination:** Add pagination for large portfolios
3. **Lazy Loading:** Implement lazy loading for stock data
4. **Database Indexes:** Optimize database queries with indexes

## Support

For issues or questions:

1. Check VERCEL\_BUILD\_FIX.md for deployment issues
2. Check YARN\_LOCK\_ISSUE.md for symlink problems
3. Check DATABASE\_MIGRATION\_COMPLETE.md (this file) for migration details

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**Migration Completed:** December 10, 2024

**Status:**  Fully Functional

**Next Action:** Monitor Vercel deployment