

NCDB Development Roadmap & Master Checklist

Nicolas Cage Database - iOS 26 App with Liquid Glass Design

PHASE 0: PRE-DEVELOPMENT SETUP

Step 1: Export Design Documentation & Code Excerpts

Purpose: Create reference files from project discussions for Claude Code CLI

Tasks:

- Export all SwiftData model definitions to reference files
- Export TMDb integration architecture & code
- Export Liquid Glass UI component examples
- Export onboarding flow specifications
- Export widget designs & configurations
- Export news scraper implementation details
- Export achievements/gamification system specs
- Export social sharing templates & logic
- Export settings screen structure
- Export website export/FTP integration code

Deliverables:

```
/Documentation/  
    └── Data_Models.md  
    └── TMDb_Integration.swift  
    └── LiquidGlass_Components.swift  
    └── Onboarding_Flow.md  
    └── Widget_Specifications.md  
    └── News_Scraper.swift  
    └── Achievements_System.md  
    └── Social_Sharing.swift  
    └── Settings_Structure.md  
    └── Export_System.swift
```

Step 2: Xcode Project Setup

Purpose: Initialize project with proper configuration for iOS 26 & SwiftUI

2.1 Create New Xcode Project

Configuration:

- **Platform:** iOS

- **Template:** App
- **Interface:** SwiftUI
- **Language:** Swift
- **Minimum Deployment:** iOS 26.0
- **Organization Name:** [Your Organization]
- **Bundle Identifier:** com.[yourorg].ncdb

2.2 Project Structure Setup

Create folder structure:

```

NCDB/
├── App/
│   ├── NCDBApp.swift (main app entry)
│   └── AppDelegate.swift (if needed)
├── Models/
│   ├── Production.swift
│   ├── CastMember.swift
│   ├── WatchEvent.swift
│   ├── ExternalRating.swift
│   ├── CustomTag.swift
│   ├── NewsArticle.swift
│   ├── Achievement.swift
│   ├── ExportTemplate.swift
│   └── UserPreferences.swift
├── ViewModels/
│   ├── HomeViewModel.swift
│   ├── MovieListViewModel.swift
│   ├── MovieDetailViewModel.swift
│   ├── RankingViewModel.swift
│   └── StatsViewModel.swift
└── Views/
    ├── Home/
    ├── MovieList/
    ├── MovieDetail/
    ├── Rankings/
    ├── Stats/
    ├── Settings/
    └── Onboarding/
└── Services/
    ├── TMDBService.swift
    ├── CacheManager.swift
    ├── NewsScraper.swift
    ├── ExportService.swift
    └── AchievementManager.swift

```

```
└─ Components/
    └─ LiquidGlass/
        └─ GlassCard.swift
        └─ GlassButton.swift
        └─ GlassFrame.swift
        └─ GoldBadge.swift
    └─ Custom/
        └─ StarRating.swift
        └─ MoviePosterCard.swift
        └─ RankingCarousel.swift
└─ Utilities/
    └─ Constants.swift
    └─ Extensions/
        └─ Helpers/
└─ Resources/
    └─ Assets.xcassets/
    └─ PreloadedData/
        └─ face_off.json
        └─ con_air.json
    └─ Fonts/ (if custom fonts)
└─ Widgets/
    └─ NCDBWidgets/
```

2.3 Add Dependencies (Swift Package Manager)

Required Packages:

- Add FeedKit (for RSS news scraping)
 - Repository: <https://github.com/nmdias/FeedKit>
- Add any networking helpers if needed

Optional Packages:

- Kingfisher (image caching) - consider if needed beyond custom solution
- SwiftUI Introspect (if needed for advanced customization)

2.4 Configure Build Settings

- Set iOS deployment target to 26.0
- Enable SwiftUI previews
- Configure code signing
- Set up app capabilities:
 - Background modes (if needed for news updates)
 - Push notifications (optional)
 - App Groups (for widget data sharing)

2.5 Working with Claude Code + Xcode AI

Hybrid Development Approach:

Claude Code CLI Usage:

- Use for complex logic implementation
- Architecture-level decisions
- Batch file generation
- Code review and refactoring

Xcode AI Coding Assistant Usage:

- Use for inline code completion
- Quick fixes and suggestions
- UI layout tweaking in real-time
- SwiftUI preview debugging

Recommended Workflow:

1. **Plan** with Claude Code: Discuss architecture, generate service layer code
2. **Implement** in Xcode: Copy code, use Xcode AI for refinements
3. **Test** in Xcode: Build, run, iterate with Xcode AI
4. **Review** with Claude Code: Get feedback on implementation
5. **Refine** in Xcode: Apply suggestions, continue with AI assistance

Tips for Hybrid Mode:

- Keep Claude Code terminal open in separate window
- Use Claude Code for generating complete files
- Use Xcode AI for completing partial implementations
- Commit frequently to Git so both tools can track changes
- Use Claude Code for explaining complex existing code

PHASE 1: CORE FOUNDATION (Week 1-2)

Milestone 1.1: Data Layer Setup

Goal: Establish SwiftData models and persistence

- Create all SwiftData model files
- Production model with all properties
- CastMember model with relationships
- WatchEvent model for tracking views

- ExternalRating model
- CustomTag model
- NewsArticle model
- Achievement model
- ExportTemplate model
- UserPreferences model
- Set up ModelContainer in App entry point
- Create sample data for testing
- Implement model relationships and cascading deletes
- Test data persistence with SwiftData

Test Checkpoint: Create and persist a movie, verify it appears after app restart

Milestone 1.2: TMDb Service Integration

Goal: Connect to TMDb API and fetch movie data

- Create TMDbService class
- Implement API key storage in Keychain
- Build basic networking layer
- Error handling
- Rate limiting (4 req/sec)
- Response parsing
- Implement core endpoints:
 - Fetch Nicolas Cage filmography
 - Fetch movie details
 - Fetch movie posters/images
 - Search movies
- Create CacheManager for offline support
- ETag/Last-Modified support
- Cache expiry logic
- Three-tier cache (Essential/Moderate/Ephemeral)
- Bundle 2 preloaded movies (Face/Off, Con Air)
- Test API calls and caching

Test Checkpoint: Fetch Nic Cage movies, view offline, verify cache works

Milestone 1.3: Basic UI Foundation

Goal: Implement Liquid Glass design system components

- Create color scheme constants (Cage Gold  #FFD700), blacks, whites)
- Build reusable Liquid Glass components:
 - GlassCard view

- GlassButton view
- GlassFrame for posters
- GoldBadge view
- Implement frosted material backgrounds
- Create custom modifiers for glass effects
- Test components in SwiftUI previews

Test Checkpoint: Display glass cards with different content, verify visual consistency

PHASE 2: CORE FEATURES (Week 3-4)

Milestone 2.1: Movie List & Detail Views

Goal: Display movies and detailed information

- Implement MovieListView
- Display all Nicolas Cage movies
- Filter by watched/unwatched
- Search functionality
- Sort options (year, rating, title)
- Liquid Glass styling
- Implement MovieDetailView
- Movie poster with glass frame
- All movie metadata
- Cast members display
- External ratings (IMDb, RT)
- Watch status toggle
- Star rating input
- Review text field
- Add to custom tags
- Create MovieListViewModel
- Create MovieDetailViewModel
- Implement navigation between views

Test Checkpoint: Browse movies, tap to see details, mark as watched, add rating

Milestone 2.2: Watch Tracking & Ratings

Goal: Track viewing history and ratings

- Implement watch status tracking
- Mark as watched/unwatched
- Record watch date automatically
- Support rewatch tracking

- Build star rating component (5-star system)
- Implement rating storage and retrieval
- Create rating statistics calculations
- Display rating distribution in stats

Test Checkpoint: Rate 5 movies, verify statistics update correctly

Milestone 2.3: Home/Dashboard View

Goal: Create engaging home screen with stats and news

- Implement HomeView layout
- Welcome message
- Quick stats cards (glass panels)
 - Total watched count
 - Average rating
 - Recently watched
 - Next to watch suggestions
- News feed integration
- Featured movie of the day
- Quick actions (add review, view rankings)
- Create HomeViewModel
- Implement news scraper service
- RSS feed parsing (FeedKit)
- Filter Nicolas Cage articles
- Store in NewsArticle model
- Update frequency (daily)
- Display news articles in feed

Test Checkpoint: View home screen with stats and news, navigate to features

PHASE 3: ADVANCED FEATURES (Week 5-6)

Milestone 3.1: Interactive Rankings System

Goal: Build unique ranking carousel with drag-and-drop

- Create RankingCarousel component
- Horizontal scrolling card layout
- Drag-and-drop reordering
- Smooth animations
- Position labels (#1, #2, etc.)
- Visual depth with glass effects
- Localized ranking logic

Implement ranking persistence

Create RankingViewModel

Build RankingsView

Display current rankings

"Start Ranking" button

Filter ranked vs unranked

Export rankings option

Add ranking change animations

Implement tie-breaking logic

Test Checkpoint: Rank 10 movies, reorder them, verify persistence

Milestone 3.2: Statistics Dashboard

Goal: Comprehensive stats and analytics

Create StatsView

Overview card (total watched, rated, reviewed)

Rating distribution chart

Watch frequency graph

Genre breakdown chart

Decade analysis

Favorite actors/directors

Longest/shortest movies watched

Rewatch statistics

Create StatsViewModel with calculations

Implement chart components (use Charts framework)

Add filter options (by year, genre, rating)

Style with Liquid Glass aesthetic

Test Checkpoint: View stats with sample data, verify accuracy of calculations

Milestone 3.3: Custom Tags & Collections

Goal: Organize movies with custom collections

Implement CustomTag model functionality

Create TagsView

Display all custom tags

Add new tag UI

Edit/delete tags

View movies in each tag

Add tag management to MovieDetailView

Implement tag-based filtering

Create pre-defined tags (Action, Drama, Comedy, etc.)

Support multiple tags per movie

Test Checkpoint: Create tags, assign movies, filter by tag

🎯 PHASE 4: USER EXPERIENCE (Week 7-8)

Milestone 4.1: Onboarding Flow

Goal: Smooth first-launch experience

Create OnboardingCoordinator

Build onboarding screens:

Splash screen

Welcome screen

Feature highlights (3 swipeable screens)

TMDb API key setup screen

Initial data loading screen with progress

Actor selection screen (Nic Cage pre-selected)

Ranking tutorial (interactive demo)

Permissions request (notifications)

"Ready to Go" completion screen

Implement skip/next navigation

Add progress indicators

Store onboarding completion in AppStorage

Test complete flow

Test Checkpoint: Complete onboarding, verify API key saved, data loaded

Milestone 4.2: Settings & Preferences

Goal: Comprehensive settings management

Create SettingsView

Account section (TMDb API key management)

Appearance section (theme options)

Data & Sync section

Display preferences

Notifications settings

Export & backup options

About section

Advanced/danger zone

Implement UserPreferences model

Create preference storage logic

- Build settings screens for each section
- Add data export/import functionality
- Implement cache management controls

Test Checkpoint: Change settings, verify they persist and affect app behavior

Milestone 4.3: Search & Filters

Goal: Advanced search and filtering capabilities

- Implement search functionality
- Search by title
- Search by year
- Search by director
- Search by cast member
- Create filter UI
- Filter by watch status
- Filter by rating range
- Filter by decade
- Filter by genre
- Filter by custom tags
- Combine search + filters
- Add sort options
- Title (A-Z, Z-A)
- Release year (newest, oldest)
- Rating (highest, lowest)
- Recently watched
- Save filter presets

Test Checkpoint: Search movies, apply filters, verify results are accurate

PHASE 5: GAMIFICATION & SOCIAL (Week 9-10)

Milestone 5.1: Achievements System

Goal: Implement complete achievement tracking

- Create AchievementManager service
- Implement all 34 achievements:
- Watch milestones (First Flight → Cage Completionist)
- Rating activity achievements
- Ranking achievements
- Binge watching achievements
- Variety achievements

- Special category achievements
- Rewatch achievements

- News engagement achievements
- Social sharing achievements
- Completionist achievements
- Build achievement unlock logic
- Create achievement notification system
- Design AchievementCardView with Liquid Glass
- Build AchievementsView to display all
- Show progress toward locked achievements
- Add celebration animations for unlocks

Test Checkpoint: Unlock achievements through actions, verify notifications display

Milestone 5.2: Social Sharing Features

Goal: Share reviews, rankings, and stats

- Create SocialSharingService
- Implement share templates:
 - Individual review card (Instagram Story format)
 - Top 10 rankings card (Facebook format)
 - Stats milestone card (Twitter format)
 - Year in review card
- Build image generation logic (9:16, 1:1, 16:9 ratios)
- Integrate UIActivityViewController (share sheet)
- Add sharing options to:
 - Movie detail view
 - Rankings view
 - Stats view
- Implement platform-specific optimizations
- Add "Copy to Clipboard" option
- Apply Liquid Glass styling to generated images

Test Checkpoint: Share a review to Photos, verify image renders correctly

Milestone 5.3: Notifications

Goal: Optional push notifications for engagement

- Request notification permissions
- Implement local notifications:
 - Achievement unlocks

- New Nicolas Cage news articles
 - "Don't forget to watch" reminders
 - Weekly stats summary
-
- Create notification settings in Settings
 - Add notification actions (deep links)
 - Test notification delivery

Test Checkpoint: Receive notification, tap to open relevant screen

PHASE 6: WIDGETS & EXTENSIONS (Week 11)

Milestone 6.1: iOS Widgets

Goal: Home screen and Lock Screen widgets

- Create WidgetKit extension
- Implement widget configurations:
- Small Widget** - Watch progress ring
- Medium Widget** - Progress + recent movie
- Large Widget** - Dashboard with stats
- Lock Screen Circular** - Total watched count
- Lock Screen Rectangular** - Last watched movie
- Lock Screen Inline** - "X/Y movies watched"
- Create TimelineProvider for updates
- Implement widget deep links to app
- Style with Liquid Glass aesthetic (adapted for widgets)
- Set up App Groups for data sharing
- Test widget updates and refresh

Test Checkpoint: Add widgets to home screen, verify data updates correctly

PHASE 7: EXPORT & WEB INTEGRATION (Week 12)

Milestone 7.1: Static Site Export

Goal: Generate HTML website from app data

- Create ExportService
- Build HTML templates:
- Homepage template
- Movie detail page template
- Rankings page template
- Stats page template
- Create CSS file with Liquid Glass web styling

- Implement data-to-HTML conversion
- Add export UI in Settings
- Implement FTP upload functionality
- Add Strapi/Netlify integration (optional)
- Test complete export workflow

Test Checkpoint: Export site, verify HTML files are generated and styled correctly

✨ PHASE 8: POLISH & OPTIMIZATION (Week 13-14)

Milestone 8.1: Animations & Transitions

Goal: Smooth, delightful interactions

- Add view transition animations
- Implement custom navigation transitions
- Add micro-interactions:
 - Button press animations
 - Card hover effects (3D Touch if available)
 - Pull-to-refresh animations
 - Loading state animations
 - Refine Liquid Glass visual effects
 - Add haptic feedback for key actions
 - Polish carousel animations
 - Test animation performance

Test Checkpoint: Navigate through app, verify smooth animations throughout

Milestone 8.2: Performance Optimization

Goal: Fast, responsive app experience

- Profile app with Instruments
- Optimize image loading and caching
- Reduce memory footprint
- Optimize database queries
- Implement lazy loading for large lists
- Reduce network calls (batch requests)
- Test on older devices (A13 Bionic minimum)
- Fix any memory leaks
- Optimize widget performance

Test Checkpoint: App launches < 2 seconds, smooth scrolling on iPhone 11

Milestone 8.3: Accessibility

Goal: Inclusive experience for all users

- Add VoiceOver labels to all interactive elements
- Test complete app with VoiceOver enabled
- Ensure Dynamic Type support throughout
- Add accessibility hints where needed
- Implement sufficient color contrast ratios
- Add reduce motion alternatives
- Test with Accessibility Inspector
- Support keyboard navigation (iPad)

Test Checkpoint: Navigate entire app with VoiceOver, all actions are accessible

Milestone 8.4: Testing & Bug Fixes

Goal: Stable, bug-free experience

- Write unit tests for:
 - TMDb service
 - Data models
 - Cache manager
 - Achievement logic
 - Stats calculations
- Write UI tests for critical flows:
 - Onboarding
 - Movie rating
 - Ranking movies
 - Exporting data
 - Perform manual testing on all screens
 - Test edge cases (no network, empty states, etc.)
 - Fix all identified bugs
 - Test on multiple device sizes
 - Verify iPad layout (if supporting)

Test Checkpoint: All tests pass, no crashes in typical use

PHASE 9: PRE-LAUNCH (Week 15)

Milestone 9.1: App Store Preparation

Goal: Ready for TestFlight and App Store submission

- Finalize app icon (all sizes)
- Create launch screen
- Prepare App Store screenshots (6.7", 6.5", 5.5")

- Write App Store description
 - Create App Store preview video (optional)
 - Set up App Store Connect listing
 - Configure pricing (free with optional tip jar?)
 - Add privacy policy
 - Prepare what's new for version 1.0
 - Test archive and export for distribution
-

Milestone 9.2: Beta Testing

Goal: Gather feedback and fix issues

- Distribute TestFlight build
 - Recruit 5-10 beta testers
 - Gather feedback via TestFlight or form
 - Address critical bugs
 - Implement high-priority feedback
 - Test updated build
 - Repeat until stable
-

Milestone 9.3: Final Release

Goal: Ship version 1.0 to the App Store

- Create production build
 - Submit for App Review
 - Monitor review status
 - Address any rejection feedback
 - Get approval 
 - Release to App Store 
 - Monitor crash reports and reviews
 - Plan version 1.1 improvements
-

TESTING CHECKPOINTS SUMMARY

Throughout development, test the build at these key moments:

After Phase 1 (Core Foundation):

-  Data persists correctly
-  TMDb API successfully fetches movies
-  Liquid Glass components render properly

After Phase 2 (Core Features):

- Can browse and view all movies
- Can rate and review movies
- Home screen displays stats and news

After Phase 3 (Advanced Features):

- Can rank movies with drag-and-drop
- Stats are accurate and visually appealing
- Custom tags work as expected

After Phase 4 (User Experience):

- Onboarding is smooth and helpful
- Settings allow full customization
- Search and filters work perfectly

After Phase 5 (Gamification & Social):

- Achievements unlock at right moments
- Can share content to social media
- Notifications work reliably

After Phase 6 (Widgets):

- All widget sizes display correctly
- Widgets update with app data

After Phase 7 (Export):

- Website exports successfully
- HTML is styled correctly

After Phase 8 (Polish):

- Animations are smooth
- App is fast and responsive
- VoiceOver works throughout

⌚ DEVELOPMENT BEST PRACTICES

Version Control

- Commit after each completed task
- Use descriptive commit messages

- Branch for experimental features
- Tag releases (v1.0, v1.1, etc.)

Code Quality

- Follow Swift style guidelines
- Use descriptive variable/function names
- Comment complex logic
- Keep files under 300 lines when possible
- Extract reusable components

Testing Strategy

- Write tests as you code (not after)
- Test on physical device regularly
- Test both iPhone and iPad layouts
- Test with poor network conditions
- Test with empty/populated data states

Performance Monitoring

- Profile with Instruments regularly
- Monitor memory usage
- Check for retain cycles
- Optimize before shipping



NOTES & REMINDERS

Key Design Decisions Confirmed

- **App Name:** NCDB (Nicolas Cage Database)
- **Color Scheme:** Cage Gold (#FFD700), deep blacks, white text
- **Design Language:** Liquid Glass (frosted materials, depth, luminosity)
- **Target:** iOS 26+ (requires A13 Bionic or newer)
- **Architecture:** SwiftUI + SwiftData + MVVM
- **API:** TMDb for movie data
- **Preloaded Movies:** Face/Off, Con Air (bundled JSON)
- **Rating System:** 5-star with 0.5 increments

- **News Sources:** RSS feeds (Google News, IMDb, Variety filtered for Nic Cage)
- **Export Options:** Static HTML + FTP, or Strapi/Netlify
- **Actor Support:** Nicolas Cage primary, can add other actors later

Features Confirmed In Scope

- Movie tracking (watched/unwatched)
- Star ratings and written reviews
- Interactive ranking carousel
- Comprehensive statistics dashboard
- Custom tags/collections
- News aggregation
- Achievements system (34 achievements)
- Social sharing templates
- iOS widgets (all sizes)
- Static website export
- Onboarding flow
- Settings & preferences
- Offline mode with caching
- Rewatch tracking
- External ratings display (IMDb, RT)

Future Enhancement Ideas (Post-Launch)

- Multiple actor support (beyond Nic Cage)
- watchOS companion app
- macOS version
- iCloud sync
- Family sharing
- Watch party mode
- Advanced statistics (ML-powered insights)
- Integration with other movie tracking services
- Community features (friend rankings)

🎬 FINAL THOUGHTS

This roadmap provides a structured path from design to deployment. Each phase builds on the previous, with clear testing checkpoints to ensure quality at every stage.

Estimated Total Development Time: 15 weeks (part-time) or 8 weeks (full-time)

Remember to:

- Test early and often
- Prioritize user experience
- Keep the Liquid Glass aesthetic consistent
- Have fun building this unique tribute to Nicolas Cage! 🎉

Good luck with development! 🚀

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