

🎯 START HERE - Your FlowTrack Journey

Welcome to FlowTrack! This guide will help you get started with your Spring Boot project.

✓ What Was Fixed

Your repository had **structural issues** that I've now resolved:

Problems Found & Fixed:

1. ✗ **.idea/ folder** (IntelliJ config) was tracked in git → ✓ **Removed**
2. ✗ **.vscode/ folder** (VS Code config) was tracked in git → ✓ **Removed**
3. ✗ **target/ folder** (build artifacts, 123 files) was tracked in git → ✓ **Removed**

Why This Matters:

- **Before:** 14,251 unnecessary lines tracked in git (compiled **.class** files, IDE configs)
- **After:** Clean repository with only source code
- **Result:** No more merge conflicts from IDE settings, faster git operations, proper project structure

Git Commits Made:

- **036fe3e** - Removed IDE config and build artifacts from git tracking
 - **6ae63c0** - Added comprehensive beginner guides
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📘 Your Learning Resources (Read in Order)

I've created **3 comprehensive guides** specifically for you as a Spring Boot beginner:

1. 📖 [BEGINNER_GUIDE.md](#) ★ START HERE

Read this first! Covers:

- Spring Boot project structure explained
- Understanding layers (Model, Repository, Service, Controller)
- How to run the project
- Adding new features step-by-step
- Common development tasks
- Key annotations explained
- What files to commit/ignore

Time to read: 15-20 minutes

2. 🎠 [SPRING_BOOT_VISUAL_GUIDE.md](#) ★ READ SECOND

Visual learner? This guide includes:

- Request flow diagrams (Browser → Controller → Service → Database)
- Complete code examples with explanations
- File structure with real examples from your project
- Annotations explained visually
- Quick command reference
- Learning path roadmap

Time to read: 20-25 minutes

3. TROUBLESHOOTING.md ★ REFERENCE GUIDE

Keep this bookmarked! Contains:

- Solutions to all common errors
- Build failures, database issues, port conflicts
- IDE-specific problems
- Performance optimization
- Debug logging setup
- Pre-flight checklist

Use when: You encounter any error

Quick Start (5 Minutes)

Step 1: Verify Prerequisites

```
# Check Java 11 is installed
java -version # Should show: java version "11.x.x"

# Check MySQL is running
mysql -u root -p # Enter your password

# Create database
CREATE DATABASE flowtrack;
```

Step 2: Configure Database

Edit [src/main/resources/application.properties](#):

```
spring.datasource.url=jdbc:mysql://localhost:3306/flowtrack
spring.datasource.username=root
spring.datasource.password=YOUR_PASSWORD_HERE
```

Step 3: Build & Run

```
# Clean build  
mvn clean install  
  
# Run application  
mvn spring-boot:run  
  
# Or use the batch file  
.\\start.bat
```

Step 4: Access Application

Open browser: <http://localhost:8080>

Understanding Your Project

What is FlowTrack?

An **Inventory Management System** built with:

- **Spring Boot 2.7.18** (Java web framework)
- **Java 11** (Programming language)
- **MySQL** (Database)
- **Thymeleaf** (HTML templating)
- **Maven** (Build tool)

Project Statistics:

-  **11 Controllers** - Handle web pages
-  **13 Services** - Business logic
-  **10 Repositories** - Database access
-  **11 Models** - Database tables
-  **30+ Templates** - HTML pages

Main Features:

- Item management (Add, Edit, Delete, View)
 - User management (Admin, roles)
 - Vendor management
 - Item issuance & returns
 - Repair tracking
 - Fine management
 - Reporting & analytics
 - Chatbot integration (Gemini AI)
-

Clean File Structure (After Cleanup)

```

FlowTrack/
├── .git/                                ← Git repository
└── .gitignore                            ← What to ignore (updated!)
├── .idea/                                ← Your IntelliJ settings (NOT tracked)
└── .vscode/                               ← Your VS Code settings (NOT tracked)
└── target/                                ← Build output (NOT tracked)

└── src/
    ├── main/
    │   ├── java/.../IMS/                  ← YOUR CODE IS HERE
    │   │   ├── controller/                ← Web endpoints
    │   │   ├── service/                 ← Business logic
    │   │   ├── repository/              ← Database
    │   │   ├── model/                   ← Tables
    │   │   └── ...
    │   └── resources/
    │       ├── application.properties  ← CONFIG
    │       ├── static/                  ← CSS/JS
    │       └── templates/               ← HTML
    └── test/                                 ← Tests

└── pom.xml                                ← Dependencies

└── BEGINNER_GUIDE.md                      ← Read first!
└── SPRING_BOOT_VISUAL_GUIDE.md           ← Visual learner guide
└── TROUBLESHOOTING.md                    ← Error solutions
└── [Other .md files]                     ← Various documentation

```

🎓 Your Learning Path

Week 1: Explore & Understand

- ▢ Read [BEGINNER_GUIDE.md](#)
- ▢ Read [SPRING_BOOT_VISUAL_GUIDE.md](#)
- ▢ Run the application successfully
- ▢ Explore existing pages (Items, Vendors, Users)
- ▢ Read through [ItemController.java](#) and [ItemService.java](#)

Week 2: Make Small Changes

- ▢ Modify a template (change button color)
- ▢ Add a new field to [Item](#) model
- ▢ Create a simple "Hello World" controller
- ▢ Understand the request flow

Week 3: Build a Feature

- ▢ Create a new entity (e.g., Category)
- ▢ Add CRUD operations

- Test thoroughly

Week 4: Advanced Topics

- Study Spring Security (authentication)
 - Learn REST APIs
 - Explore the chatbot integration
-

🛠 Essential Commands

```
# Build Project
mvn clean install          # Full build
mvn clean install -DskipTests # Skip tests (faster)

# Run Application
mvn spring-boot:run        # Development mode
.\start.bat                 # Using batch file
java -jar target/IMS-AP-0.0.1-SNAPSHOT.jar # Production

# Git Operations
git status                  # Check status
git add .                    # Stage changes
git commit -m "message"     # Commit
git push                     # Push to GitHub

# Database
.\setup-mysql-database.bat # Setup database
.\check-database.bat       # Check connection
mysql -u root -p           # Access MySQL CLI

# Clean Start
Remove-Item -Recurse -Force target # Delete build folder
mvn clean install            # Rebuild
```

❓ Common Questions

Q: Can I use VS Code instead of IntelliJ?

Yes! Install:

- Extension Pack for Java
- Spring Boot Extension Pack

Q: What if I break something?

```
# Revert all changes
git checkout .
```

```
# Or create a backup branch first  
git checkout -b backup-before-changes
```

Q: How do I add a new dependency?

1. Go to [mvnrepository.com](#)
2. Search for library
3. Copy XML snippet
4. Paste into <dependencies> section in pom.xml
5. Run `mvn clean install`

Q: Where do I write my code?

- **Controllers:** `src/main/java/com/example/IMS/controller/`
- **Services:** `src/main/java/com/example/IMS/service/`
- **Models:** `src/main/java/com/example/IMS/model/`
- **HTML:** `src/main/resources/templates/`
- **CSS/JS:** `src/main/resources/static/`

Q: How do I debug errors?

1. Read the error message in console
2. Check [TROUBLESHOOTING.md](#)
3. Enable debug logging in [application.properties](#)
4. Google the specific error

⌚ Today's Action Items

Done by me:

- Removed `.idea/`, `.vscode/`, `target/` from git
- Created beginner guides
- Verified `.gitignore` is correct

Your turn:

- Read [BEGINNER_GUIDE.md](#)
- Configure [application.properties](#) with your MySQL password
- Run `mvn clean install`
- Start the application with `mvn spring-boot:run`
- Access `http://localhost:8080` in browser
- Explore the UI

📞 Need Help?

When You're Stuck:

1. Check [TROUBLESHOOTING.md](#) for your specific error
2. Read the guides: [BEGINNER_GUIDE.md](#) & [SPRING_BOOT_VISUAL_GUIDE.md](#)
3. Search Stack Overflow with your error message
4. Ask in Spring Boot communities

Good Error Reports Include:

- What you were trying to do
- Exact error message (full stack trace)
- Code snippet causing the issue
- What you've already tried

🌟 Pro Tips

💡 Always commit before making big changes

```
git add .
git commit -m "Working state before XYZ"
```

💡 Rebuild after code changes

```
mvn clean install
```

💡 Use Spring Boot DevTools for auto-restart (Already in your [pom.xml](#))

💡 Keep your guides handy

 Bookmark these files for quick reference!

📊 Git Cleanup Summary

Removed from git tracking:

- 123 files
- 14,251 lines
- ~2.5 MB of unnecessary data

Your repository is now:

- Clean and professional
- No merge conflicts from IDE configs
- Faster git operations
- Following best practices

Files still exist locally (not deleted), just not tracked by git anymore:

- [.idea/](#) - Your IntelliJ settings
- [.vscode/](#) - Your VS Code settings

-  - Build output (regenerated on build)
-

You're Ready!

Your repository is now **properly structured** and you have **comprehensive guides** to learn Spring Boot.

Start here: Open [BEGINNER_GUIDE.md](#) and begin your journey!

Remember: Every expert was once a beginner. Take it step by step, and don't hesitate to experiment! 

Quick Links

-  [BEGINNER_GUIDE.md](#) - Complete beginner's guide
 -  [SPRING_BOOT_VISUAL_GUIDE.md](#) - Visual diagrams & examples
 -  [TROUBLESHOOTING.md](#) - Error solutions
 -  [ARCHITECTURE.md](#) - System architecture
 -  [SECURITY_RBAC.md](#) - Security & roles
 -  [REPORTS_MODULE.md](#) - Reporting features
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Made with  for beginners. Happy coding!