Documentation: Resume Building Application

# 📌 Project Title:

Resume Builder: Java Swing Desktop Application

# 🧠 Objective:

To develop a user-friendly and professional Resume Builder application using Java Swing. The goal is to allow users to input personal, academic, and professional data and generate a structured, exportable PDF resume with customization options.

# 🛠️ Technologies Used:

|  |  |
| --- | --- |
| Technology | Purpose |
| Java | Core programming language |
| Java Swing | GUI development |
| Maven | Build tool and dependency management |
| iTextPDF | Generate and style PDF resumes |
| GitHub | Version control and project sharing |

# 📂 Folder Structure:

com.resume.builder  
│  
├── ResumeBuilder.java // Launches the application  
├── PersonalInfoForm.java // Collects user name, email, address  
├── EducationForm.java // Degree, university, year, grade  
├── ExperienceForm.java // Company, role, years, responsibilities  
├── SkillForm.java // Technical skills input  
└── ResumeGenerator.java // PDF resume generation with templates

# 🔁 Workflow Overview:

* Start Application → via ResumeBuilder.java
* Form Screens → Personal Info → Education → Experience → Skills
* Template Selection → Choose between Modern/Professional
* Preview Resume (optional)
* Export PDF → Resume gets saved in project directory

# 🧩 Design Choices:

|  |  |
| --- | --- |
| Element | Justification |
| Java Swing | Portable GUI; customizable components |
| GridBagLayout | Flexible, precise component arrangement |
| Multi-class structure | Separation of concerns, easier maintenance |
| PDF Generation via iText | High control over formatting, layout, fonts |
| Template system | Adds customization, enhances user experience |
| Input validation | Prevents errors, ensures data consistency |

# 🎯 Key Functionalities:

* Input and validate all necessary resume details
* Structured multi-step form flow
* Aesthetic UI with colors, alignment, font sizing
* Two customizable resume templates
* Preview PDF (optional)
* One-click resume generation and export

# ⚠️ Challenges Faced:

|  |  |
| --- | --- |
| Challenge | Resolution |
| Complex layout using Swing | Used GridBagLayout and reusable panels |
| Data sharing across multiple forms | Used static/global data or passed via constructors |
| Real-time input validation | Applied regex and conditional checks in forms |
| PDF formatting issues | Customized font styles and section spacing |
| Template selection with clean logic | Separated layout generation functions |

# 🧪 Testing & Debugging:

• Manual testing of field validations  
• Checked for null/empty entries  
• Verified final PDF structure, font styles, layout  
• Ran multiple builds to test edge cases  
• Debugged layout glitches in Swing using System.out

# 📤 Exporting & Saving:

• On clicking “Generate”, user data is passed to ResumeGenerator  
• A PDF is saved in the project folder as Generated\_Resume.pdf  
• Fonts, section titles, and content are styled in chosen template

# 🌟 Results:

• Working multi-screen resume builder  
• PDF generation with proper alignment and aesthetics  
• Template customization  
• Clean, user-friendly interface

# 📈 Future Enhancements:

* Template preview before generating
* Drag & drop image/photo upload
* Convert into a web app using Spring Boot + React
* Export in DOCX and HTML
* Add login/signup to manage resumes online

# 📌 Internship Alignment (Next24tech):

• ✅ Task 1: Resume Building Application completed successfully  
• Project satisfies: UI design, template selection, export feature, validations  
• Code versioned and pushed to GitHub  
• Documentation created (this file + README.md)  
• Ready for project submission

# 👩🏻‍💻 Developer Info:

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