



PALLI KARMA-SAHAYAK FOUNDATION (PKSF)

www.pksf.org.bd

TERMS OF REFERENCE (ToR)

for

Software Engineer Full-stack

1.0 Background

Palli Karma-Sahayak Foundation (PKSF), an apex development organization founded by the Government of Bangladesh, is mandated for poverty alleviation through sustainable employment generation by providing appropriate financing, skill training, and other necessary services. As a second-tier organization, PKSF implements all programs and projects through more than 200 of its Partner Organizations (POs) across the country.

As part of its ongoing efforts to strengthen digital services and improve operational efficiency, PKSF's Information Technology and Digital Solutions Department (ITDSD) is expanding its software development capacity. This requires professionals capable of designing and delivering complete, end-to-end software solutions—from user-facing interfaces to the underlying business logic and data layer—that support PKSF's programs, partner organizations, and internal operations.

Given the volume and sensitivity of data involved, including financial, project, and partner organization records, the incumbent will assist in building secure, high-performance, and reliable systems across both the front-end and back-end of PKSF's software solutions.

2.0 Position Title & Administrative Overview

- **Position Title:** Software Engineer Full-stack
- **Duty Station:** PKSF Bhaban, Dhaka (with occasional field visits as required)
- **Employment Duration:** Initially 4 years (subject to annual renewal based on performance and demonstrated dynamism)
- **Age Limit:** Maximum 32 years on the last date of application
- **Years of Experience:** Candidates shall have a **minimum of two (02) years** of professional experience in full-stack software development.
- **Consolidated Monthly Salary:** BDT 1,20,000/- (inclusive of all taxes as per Government rules) plus admissible benefits (annual increments, festival allowances, Bangla Noboborsho allowance, mobile allowance, group insurance) as per PKSF policies.

3.0 Key Responsibilities and Tasks

The Full Stack Software Developer will work under the Information Technology and Digital Solutions Department (ITDSD) of PKSF and will be responsible for the following tasks:

A. Application Feature Development & Implementation

1. **Core Development:** Develop and Implement full-stack application modules per specifications and standard coding practices, building scalable RESTful APIs and



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microservices using **Java (Spring Boot)** for the backend and dynamic, responsive user interfaces using **React and/or Angular** for the frontend.

2. **Domain Modeling & Endpoints:** Translate user requirements into domain models, data workflows, and secure API endpoints for enterprise solutions.
3. **Frontend UI Components:** Design and implement reusable, modular frontend components and consistent design systems using **Material Design** principles, ensuring accessible and responsive interfaces for PO field users.
4. **Asynchronous Task Processing:** Assist in implementing background processing routines (e.g., Spring Batch, task queues) for bulk file uploads and financial report generation submitted by Partner Organizations.

B. Database Development & Optimization

1. **Database Queries:** Develop optimized SQL (queries, stored procedures, functions) and tune ORM usage (**JPA/Hibernate**) targeting **PostgreSQL**, Oracle, MySQL, and MongoDB.
2. **Data Integrity & Caching:** Maintain schema standards, indexes, and connection pooling, utilizing **Redis** for in-memory data caching and session management.

C. Security, Integration & DevOps

1. **API Security & SSO:** Apply robust API security, encryption mechanisms, and role-based access control (RBAC), integrating authentication protocols (**OAuth2, JWT, Keycloak SSO**) across RESTful and SOAP web services.
2. **Containerization & CI/CD:** Support deployment pipelines by containerizing applications using **Docker** and utilizing orchestration tools like **Kubernetes**, managing environment configurations, secrets, and CI/CD workflows (GitLab CI/CD, GitHub Actions, or Jenkins).
3. **Observability & Logging:** Assist in post-deployment service operation using monitoring and logging tools (**ELK Stack, Prometheus, Grafana**) to troubleshoot application performance and database latency issues.

D. Quality Assurance, Testing & SDLC Execution

1. **Automated Testing:** Write clean, maintainable, and well-tested code across the stack, implementing unit and integration tests for both frontend and backend modules.
2. **Maintenance & Documentation:** Upgrade, refactor, and improve existing services based on evolving requirements while preserving backward compatibility. Maintain clear technical documentation (API specs, ERDs, component specifications).
3. **Agile Collaboration:** Collaborate effectively with UI/UX designers, senior software engineers, QA, DevOps, and project stakeholders to meet sprint goals and deliverables.
4. Perform any other duties as assigned by the supervisor.

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4.0 Academic and Other Qualifications

1. **Academic Degree:** Candidates must have a Bachelor's degree in Computer Science / Computer Science & Engineering / Information Technology / Software Engineering / Equivalent Degree or any other related subject from a reputed university.

or

Candidates with a Bachelor's degree in any other discipline will also be considered provided they possess substantial professional experience in the software development field.

2. **Academic Record:** Applicants must have at least **three First Divisions/Classes** or equivalent CGPAs in their academic record.
 - o *Note:* Any Third Division/Class in any examination is **not acceptable**.
 - o First Class will be determined based on the candidate's regular degree (considering the first four degrees only).

5.0 Experience & Required Competencies

Mandatory Requirements:

- **Years of Experience:** Candidates shall have a **minimum of two (02) years** of professional experience in full-stack software development.
- **Core Technology Stack:** Candidates must have hands-on working experience with **Java (Spring Boot) and React and/or Angular**.

Preferred Qualifications & Demonstrated Capabilities:

1. **Verifiable Code Portfolio/GitHub Presence:** Preference will be given to candidates who provide a link to a public code repository (**GitHub, GitLab, or Bitbucket**) showcasing clean code structure, modular full-stack projects, unit/integration tests, and clear deployment documentation (README.md, docker-compose).
2. **Backend & Microservices Execution:** Experience with microservices architecture, RESTful API integration, data exchange formats (JSON, XML, SOAP where required), and secure authentication patterns (OAuth2, JWT, Keycloak).
3. **Database Proficiency:** Practical experience with **PostgreSQL** schema design, query tuning, PL/SQL, indexing, and NoSQL databases (MongoDB).
4. **Caching & Queue Management:** Practical familiarity with **Redis** for distributed caching and session management.
5. **Containerization & DevOps:** Hands-on experience with **Docker, Kubernetes**, Git version control, and automated CI/CD deployment routines.
6. **Cloud & Relevant Certifications (Optional):** Familiarity with cloud platforms (AWS, GCP, or Azure) or relevant associate-level developer credentials.

