PROJECT MANAGEMENT UNIT (PMU)
PUNJAB URBAN LAND SYSTEMS
ENHANCEMENT (PULSE) PROJECT
Board of Revenue (BOR)
Government of the Punjab
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TERMS OF REFERENCE

PUNJAB URBAN LAND SYSTEMS ENHANCEMENT (PULSE)
PROJECT

ISLAMIC REPUBLIC OF PAKISTAN
PUNJAB PROVINCE

HIRING OF AN INDIVIDUAL CONSULTANT AS

DATABASE DEVELOPER

MAY 2024

TERMS OF REFERENCE (TORs) - DATABASE DEVELOPER

1. BACKGROUD INFORMATION: -

Board of Revenue (BOR), Punjab with the technical & financial support of the World Bank is implementing Punjab Urban Land System Enhancement (PULSE) project for the establishment of a unified central database of all types of urban properties (societies / authorities / development agencies), rights and charges. The proposed system will not merely a GIS & Parcel based one but has all possible functionalities to serve as a robust platform for creation of 'Spatial Data Infrastructure' (SDI), an inevitable need of the future. The project will provide a complete and transparent record of title in land and immovable property. Digitization of remaining parts of rural land, digitization of Katchi Abadis (KAs) record, automation of sub-registrar record rooms is also part of the project.

1.1. Beneficiary Country and Province:

Islamic Republic of Pakistan and Punjab Province.

1.2. Contracting Authority:

Under the Punjab Urban Land Systems Enhancement (PULSE) Project and in agreement with the World Bank, the Project Management Unit (PMU), Borad of Revenue (BOR), Government of Punjab is the contracting authority.

2. OBEJECTIVE: -

One of the core objectives of the PMU is to provide the analytical services and value-added information and solutions to Borad of Revenue (BOR) in Punjab and other users such as the World Bank, donor organizations etc. in a manner that broadens and strengthens the digitization of land records on Borad of Revenue (BOR) and maximizes the effectiveness of the Punjab Urban Land Systems Enhancement (PULSE) Project.

The Database Developer will provide support to the PMU team for one of the major IT interventions pertaining to establish a modern Land Information System. The

support of the consultants is critical in strengthening existing ICT equipment and software in Data Center.

3. SCOPE OF WORK: -

- Design the structure and layout of databases based on the specific requirements of applications.
- Write SQL queries to interact with databases, retrieve data, and perform data manipulation operations.
- To collaborate with software developers to integrate databases into applications seamlessly.
- Work on data modelling, representing how data elements relate to each other and ensuring data integrity and consistency.
- Transferring data between systems or databases, database developers responsible for data migration tasks, ensuring data accuracy and completeness.
- Optimize database queries and indexes to enhance application performance and minimize response times.
- Writing technical documentation for processes, tasks, and functionality.
- Stay updated with the latest technologies and industry trends, and recommend solutions to improve the software development process.

4. DELIVERABLES: -

The consultant is expected to deliver the following:

- Database Design and Implementation based on application requirements.
- Query Development: will deliver well-optimized SQL queries and stored procedures to interact with databases, retrieve data, and perform data manipulation operations.
- Application Integration.
- Data Migration: Scripts and Documentation for handling data migration tasks, transferring data between systems or databases while ensuring data accuracy and consistency during the process.
- Optimized Queries and creating appropriate indexes to enhance application performance and minimize response times.

- Data Reporting and Analysis: Generate database reports and data analysis based on the stored data to support business decision-making.
- High-quality, well-documented, and maintainable T-SQL scripts.
- Detailed documentation of DB queries, stored procedures, and implementation.
- Regular monthly progress updates and status reports.

5. QUALIFICATION & EXPERIENCE: -

- Minimum 16 years of education in Computer Science / Information Technology or equivalent education from HEC recognized University / Institute.
- At least four (04) years of experience in Microsoft SQL Server Database Development.
- Microsoft Certifications would be considered plus.

5.1 Technical Skills:

- Strong knowledge of database management systems is essential. Database Developers should be familiar with database platforms Microsoft SQL Server
- Must have a strong command of Structured Query Language (SQL) to write complex queries, create stored procedures, and perform data manipulation operations.
- Should possess skills in database design and data modeling to create efficient and normalized database structures based on application requirements.
- Should have the ability to work closely with application developers to integrate databases into applications seamlessly, ensuring efficient data access and manipulation.
- Handle data migration tasks, transferring data between systems or databases while ensuring data accuracy and consistency during the process.
- Proficiency in optimizing database queries and creating appropriate indexes to enhance application performance and minimize response times.
- primarily focus on writing complex SQL queries and optimizing them for application-specific requirements.
- Able to generate reports and analysis based on the data stored in databases to support business decision-making.

5.2 Performance Evaluation:

The consultant's performance will be evaluated based on the following criteria:

- Quality and functionality of the deliverables with accordance of the requirements.
- Adherence to project tasks, timelines, and budget.
- Communication and collaboration with cross-functional teams.

6. TYPE OF CONTRACT

Time-Based Contract.

7. DURATION OF CONTRACT

The duration of the contract is for a period of one (01) year (extendable).

8. SELECTION PROCEDURE

The selection will be made in accordance with Section VII, paragraph 7.36 on Open Competitive Selection of Individual Consultants of the World Bank Procurement Regulations for IPF Borrowers", dated November 2020. The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" dated November 2020 ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest.

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