

## **DBMS Solutions for SDGs: Empowering Sustainable Change**

**A Comprehensive Repository of Real-time DBMS Projects for Understanding and Advancing the Sustainable Development Goals (SDGs)**

--- S Mahaboob Hussain

The book titled "DBMS Solutions for SDGs: Empowering Sustainable Change" is a comprehensive repository of real-time Database Management System (DBMS) project ideas specifically designed to address the United Nations' Sustainable Development Goals (SDGs). Authored by S. Mahaboob Hussain, Assistant Professor at Vishnu Institute of Technology, Bhimavaram, this book provides structured DBMS project frameworks aligned with each of the 17 SDGs.

### **Each project idea includes:**

- ✓ A clear problem statement,
- ✓ A well-defined DBMS architecture,
- ✓ Key functionalities required,
- ✓ The expected impact and benefits, and
- ✓ How technology, especially DBMS, can solve real-world global challenges.

The book covers diverse areas like poverty alleviation, food distribution, healthcare, education, gender equality, clean energy, urban planning, biodiversity conservation, and more—showcasing how technical solutions can be designed for social impact.

### **The book was created with two key purposes:**

#### **1. Educational Value Beyond Syllabus:**

This resource is part of the Database Management Systems (20IT3T01) course for II Year B.Tech Computer Science and Engineering students at Vishnu Institute of Technology, Bhimavaram. It encourages students to go beyond textbook learning by applying their DBMS knowledge to solve real, socially relevant problems.

#### **2. Bridging Technical Learning and Social Responsibility:**

By aligning project ideas with the SDGs, the book instills a sense of global responsibility among engineering students. It demonstrates how technical knowledge can contribute to building a sustainable, equitable, and resilient future.

### **This book will be reproducible and helpful to future students:**

The book provides a ready-made, scalable, and reproducible project framework, making it immensely valuable for future students:

#### **Template-Driven Approach:**

Each SDG project provides a detailed blueprint—problem description, database requirements, functionalities, and expected outcomes—making it easy for students to replicate or adapt these ideas for their academic projects, hackathons, or competitions.

#### **Scope for Innovation:**

Students can build upon these ideas, introduce new technologies (e.g., AI, IoT), expand database complexities, or integrate with mobile/web apps, thus encouraging continuous innovation.

**Real-World Relevance:**

Projects are directly aligned with current global challenges, making them suitable for internships, entrepreneurship initiatives, or socially impactful research.

**Resource for New Batches:**

Faculty can repeatedly use this repository to assign projects, organize SDG-focused hackathons, or inspire students for socially relevant final-year projects.

**Documentation & Research Aid:**

The structured presentation serves as a guide for preparing project documentation, ER diagrams, and system architectures, streamlining project development.

This book is more than just a project repository—it's a vision document that combines technical skill development with global citizenship, ensuring that Computer Science students are not only industry-ready but also socially conscious problem-solvers. It will continue to benefit future batches by offering a strong foundation for practical learning, innovation, and sustainable development contributions.