**SYNOPSIS**

**AI-Powered Career Guidance System for IT Jobs**

**1. Cover Page**

*(Include project title, group members, institution name, and a relevant background image.)*

**2. Project Title**

**AI-Powered Career Guidance System for IT Jobs**

**3. Project Logo**

*(Insert the project logo here, or I can design one for you! 🎨)*

**4. Group Members**

* Kanishka Pancholi

**5. Introduction of Project**

Choosing the right career path in the IT industry can be overwhelming, given the diverse roles such as **Software Developer, Data Scientist, Cybersecurity Analyst, AI Engineer, Network Engineer, and more**. Many students and professionals struggle to determine which role best suits their skills, interests, and career goals.

To address this challenge, our project aims to develop an **AI-powered Career Guidance System** that evaluates an individual’s aptitude and recommends the most suitable IT job role. The system will feature an **intelligent quiz** that assesses various technical and soft skills. Based on the quiz results, a **machine learning model** will predict the most fitting job role and provide personalized career guidance.

This project will serve as a **personalized career advisor**, helping users understand their strengths and suggesting suitable career paths in the IT sector.

**6. Aim of the Project**

The primary objective of this project is to create a **data-driven career recommendation system** that:  
✅ Evaluates a candidate’s **technical knowledge** and **soft skills**.  
✅ Uses **machine learning** to predict the best-fitting **IT job role**.  
✅ Provides **personalized career suggestions** and learning resources.  
✅ Helps users improve their **weak areas** and explore growth opportunities.  
✅ Offers a **self-evaluation page** for users to reflect on their skills before taking the quiz.

**7. Project Features**

The **AI-powered Career Guidance System** will include the following key features:

**User Features:**

🔹 **Skill-Based Quiz:** A structured aptitude test covering programming, networking, AI/ML, databases, and problem-solving skills.  
🔹 **ML-Based Job Prediction:** The system processes quiz responses and recommends the most suitable IT job role.  
🔹 **Self-Evaluation Page:** Allows users to reflect on their skills before taking the quiz.  
🔹 **Career Insights:** Detailed descriptions of various IT job roles and their skill requirements.  
🔹 **User Dashboard:** A personalized dashboard displaying quiz results, job role suggestions, and learning paths.

**Admin Features:**

🔹 **Question Management:** The admin can add, modify, or delete quiz questions.  
🔹 **User Monitoring:** Track user responses and generated predictions.  
🔹 **Database Management:** Maintain job role definitions, required skills, and other career-related data.

**8. Project Modules**

The system consists of the following key modules:

**1. User Authentication Module**

* Users can **register** and **log in** securely.
* User data is stored in the database for personalized recommendations.

**2. Quiz Module**

* The quiz assesses **technical** and **soft skills** through multiple-choice questions.
* Questions are **categorized** based on different IT job roles.

**3. Machine Learning Model Module**

* The **ML model** analyzes quiz responses and predicts the **most suitable IT role**.
* The model is trained on **a dataset of IT professionals** and their skills.

**4. Career Recommendation Module**

* Displays **career suggestions** based on quiz scores.
* Provides **career insights** such as job descriptions, required skills, and salary expectations.

**5. Self-Evaluation Page (New Module)**

* Users can **rate their own skills and interests** before taking the quiz.
* This helps users **compare their self-assessment** with quiz-based recommendations.

**6. Admin Dashboard Module**

* The admin can **manage quiz questions, monitor users, and update career information**.

**9. Database Design**

The system will use a **relational database (MySQL or MongoDB)** with the following key tables:

**1. Users Table**

* Stores user details (UserID, Name, Email, Password, QuizScores).

**2. Quiz Questions Table**

* Stores all quiz questions categorized by **skill type** and **difficulty level**.

**3. Responses Table**

* Records user answers for future **learning recommendations**.

**4. Job Roles Table**

* Contains job role descriptions, required skills, and industry demand.

**5. Predictions Table**

* Stores **ML-generated career recommendations** for each user.

**10. Self-Evaluation Page (New Addition)**

Before taking the quiz, users will **self-assess their skills** using a rating system. This page allows users to:

**Self-Assessment Questions:**

💡 Rate your proficiency in the following skills (1 = No Experience, 5 = Expert):

| **Skill** | **Rating (1-5)** |
| --- | --- |
| Programming (Python, Java, etc.) | ⭐⭐⭐ |
| Database Management | ⭐⭐ |
| Cybersecurity | ⭐⭐⭐⭐ |
| Networking Concepts | ⭐ |
| AI & Machine Learning | ⭐⭐ |
| Communication Skills | ⭐⭐⭐⭐ |
| Problem-Solving | ⭐⭐⭐ |
| Leadership & Teamwork | ⭐⭐ |

After **completing the quiz**, the system will compare their self-evaluation with the **ML-predicted career path**, helping them see gaps in their perception vs. actual aptitude.

**11. References**

🔹 **Books & Research Papers:** Machine Learning for Career Prediction, AI in Education.  
🔹 **Websites:** TensorFlow, Scikit-Learn, Flask Documentation.  
🔹 **Open-Source Projects:** Career Guidance Systems, Personality-based ML Models.