Chhattisgarh Swami Vivekanand Technical University, Bhilai

Department of Computer Science & Engineering

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Branch: Artificial Intelligence

Subject: Minor Project on Industrial Training

Project Synopsis

Project Title

AI-Powered Inclusive Assessment Tool for the Skill Ecosystem

Team Members [Group 4]

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Abstract

This project proposes an **AI-powered inclusive assessment tool** to evaluate candidates across the Indian skill ecosystem. The platform supports multi-format assessments (MCQs, descriptive, practical, viva) and integrates accessibility features for **Persons with Disabilities (PWD)** such as text-to-speech, voice-to-text, and adaptive inputs. Using AI, the system adapts question difficulty, predicts performance, and ensures exam integrity. Real-time analytics provide actionable feedback to learners and educators. With secure, standardized, and scalable architecture, the tool enables fair and accessible assessments in online, offline, and blended environments.

1. Introduction

The skill ecosystem in India includes diverse learners from schools, ITIs, vocational programs, and SSCs. Current assessments lack **standardization, inclusivity, and adaptability**, creating barriers for PWD candidates and learners in remote areas. This project aims to build a **holistic, AI-driven platform** to deliver fair, secure, and accessible evaluations.

2. Problem Statement

Existing systems face:

- Limited inclusivity for PWD candidates.
- Inconsistent evaluation across institutions.
- Lack of adaptive assessments.
- Weak offline/blended support in low-connectivity regions.
- Insufficient feedback and analytics.

A unified AI-powered solution is required to overcome these challenges.

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3. Objectives

- Provide **multi-format assessments** (MCQs, descriptive, practical, viva).
- Ensure **PWD accessibility** with assistive technologies.
- Enable **AI-driven adaptivity** for personalized learning.
- Deliver **real-time analytics and dashboards**.
- Maintain **security, standardization, and scalability**.

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4. Methodology

The system will be modular, comprising:

1. **Assessment Engine** – Exam creation, delivery (online/offline/blended), auto/manual grading.
2. **AI Integration** – Adaptive questioning, performance prediction, fraud detection.
3. **Accessibility** – Voice-based inputs, screen readers, customizable UI.
4. **Analytics** – Dashboards, benchmarking, exportable reports.
5. **Security** – Role-based access, AES/TLS encryption, audit logs.

Tech Stack:

- Frontend: ReactJS/React Native, TailwindCSS, ARIA.
- Backend: Django/FastAPI, PostgreSQL/MongoDB.
- AI/ML: TensorFlow, PyTorch, scikit-learn, NLP.
- Accessibility: Google STT, Amazon Polly, screen readers.
- Analytics: Pandas, Recharts, ReportLab.

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5. Expected Results

- **Inclusive Assessments** for PWD and diverse learners.
- **Standardized Evaluation** across regions and institutions.
- **Adaptive Exams** personalized to candidate performance.
- **Scalability** for online, offline, and blended modes.
- **Data-Driven Insights** improving learning outcomes.

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6. Conclusion

This project ensures **fair, inclusive, and standardized assessments** across the skill ecosystem. By combining AI-driven personalization, accessibility features, and robust analytics, it supports equitable opportunities for all learners while enhancing the credibility of skill-based education in India.
