# Statement of Work

**Project Title:** ADvantage
**Date:** 10-2-25

## 1. Introduction

In today's fast-paced, content-driven world, consumers are bombarded with advertisements, leading to declining attention spans and ad fatigue. Generic, one-size-fits-all ads often fail to capture interest, as they lack local relevance and contextual engagement. Brands face difficulties in connecting with local audience in meaningful ways, especially in regions where cultural, social and environmental factors can influence purchasing behavior. Traditional ads miss out on the opportunity to incorporate real-time local trends and conditions that matter most to consumers at any given moment.

## 2. Scope of Work

### Project Description

ADvantage is an AI-powered platform designed to create hyper-local, contextually relevant ads in real-time. By integrating local trends, social media trends, weather conditions, cultural events, and personal insights, it crafts dynamic and engaging ads tailored to specific regions and demographics. Unlike traditional advertising solutions, ADvantage operates at a granular pincode level, ensuring that each set of customers within a specific locality receives personalized, hyper-local ads relevant to their immediate surroundings.

This level of precision allows businesses to engage their audience with ads that reflect local culture, seasonal preferences, and trending topics in their exact area. The result is a seamless blend of AI-driven personalization and hyper-local marketing, enhancing customer engagement and increasing conversion rates.

### Objectives

1. **Develop a System for Hyper-Local Ad Generation**
    - Build a platform that enables businesses to create location-specific ads in real time.
    - Integrate local data sources such as weather updates, cultural events, and social media trends.
2. **Implement Real-Time Ad Customization Features**
    - Enable businesses to modify and adjust ad campaigns dynamically based on ongoing trends.
    - Ensure that ads remain relevant by updating them based on external conditions.
3. **Design a User-Friendly Dashboard for Businesses**

- Develop an intuitive web-based interface where businesses can set preferences, monitor campaigns, and analyze performance.
- Provide options for selecting target demographics, geographic areas, and ad formats.

4. **Enable Ad Deployment**
    - Ensure ads can be distributed to specific user-sets according to their pincodes.
5. **Develop Data Collection & Processing Mechanisms**
    - Gather and process real-time data such as weather reports, traffic conditions or trending topics.
    - Ensure efficient data handling to prevent delays in ad generation.
6. **Incorporate Multi-Language & Cultural Relevance**
    - Allow businesses to create ads in multiple languages with regional and cultural adaptability.
    - Ensure ad content aligns with local norms and customer preferences.
7. **Implement Ad Performance Tracking & Insights**
    - Develop an analytics module that provides insights on engagement rates, conversions, and audience reach.
    - Enable businesses to adjust ad strategies based on real-time data.
8. **Ensure System Scalability & Security**
    - Build a scalable infrastructure to handle increased ad requests from multiple regions.
    - Implement security measures to protect user data and ensure compliance with privacy laws.

**Key Activities**

1. **Requirement Analysis**

    - Gather business and functional requirements.
    - Define system architecture and technology stack.
    - Create wireframes and UI/UX design mock-ups.

2. **Design and Development**

    - Develop front-end interface with responsive design.
    - Implement back-end functionalities including ADvantage-LLM integration.
    - Configure authentication and authorization mechanisms.
    - Develop API integrations for payroll and attendance tracking.

3. **Testing**

    - Perform unit testing for individual components.
    - Conduct system testing to ensure seamless integration.

4. **Deployment**

    - Deploy the system on cloud or on-premises infrastructure.
    - Provide documentation and tutorial videos for marketing teams.

## 3. Deliverables

1. **Website Development**
    - Responsive, SEO-optimized website with a modern UI/UX design.
    - Separate sections for product overview, features, pricing plans, and demo.
    - Landing pages for different user types:
      Non-registered users: A generic landing page with product details, demo, and pricing plans.
      Registered (paid) users: A secure login/signup portal to access the AI-powered ad generation platform.

2. **User Authentication & Access Control**
    - Secure login/signup system for paid users.
    - Role-based access control to differentiate between company admins and marketing team members.
    - Payment integration for subscription-based access.
    - Forgot password & account recovery options.

3. **AI-Powered Ad Generation Platform (User Dashboard)**
    - Ad creation tool where businesses can generate hyper-local ads based on pincode-level trends.
    - Customizable ad templates that allow companies to input brand messaging.
    - Real-time trend analysis integrated into ad generation.
    - Preview feature for marketing teams to visualize ads before deployment.

4. **Subscription Management & Payment System**
    - Subscription tiers & pricing plans (e.g., monthly/annual billing).

5. **API & Third-Party Integrations**
    - Integration with WhatsApp API for direct ad deployment. (for demonstration purpose only, other platforms can be integrated as requested by the client).
    - API access for enterprise clients to automate ad generation in their marketing workflows.
6. **Customer Support & Help Center**

- AI chatbot for FAQs and customer inquiries.
- Ticket-based support system for paid users.
- Documentation & video tutorials for onboarding marketing teams.

7. **Compliance & Security**
    - End-to-end data encryption for user information and payment details.
    - Privacy compliance (GDPR, CCPA) with a focus on pincode-level targeting without personal data storage.
    - Regular security audits and user authentication protocols (OAuth, JWT, etc.).

8. **Performance Optimization & Scalability**
    - Cloud-based deployment to handle high traffic and ad requests efficiently.
    - Scalable architecture to support increasing user demand.
    - Continuous performance monitoring & load balancing.

9. **Deployment and Demonstration**
    - Synthetic database creation and corresponding demonstration.
    - Bug fixes & iterative improvements based on user feedback.

## 4. Timeline and Milestones

| Milestone | Description | Due Date |
|---|---|---|
| **Project Kickoff** | Initial project discussion and planning | **Feb 4, 2025** |
| **Phase 1** | Requirement analysis and system design completion | **Feb 28, 2025** |
| **Phase 2** | UI/UX design finalized, website wireframe created | **March 15, 2025** |
| **Phase 3** | LLM integration and ad generation model implemented | **March 31, 2025** |
| **Phase 4** | Backend and database setup completed | **April 15, 2025** |
| **Phase 5** | Website frontend and client dashboard development completed | **April 30, 2025** |
| **Phase 6** | Testing, debugging, and final improvements completed | **May 10, 2025** |
| **Final Delivery** | Submission of all deliverables and project presentation | **May 20, 2025** |

## 5. Roles and Responsibilities

*Note : The team is in its initial phase of planning. We are currently exploring the software aspects required in building this website individually, we will soon assign specific roles (i.e., back-end developer, front-end developer etc.).*

- **Team Members:**
    1. Harsha Dayani Akula : SE22UCSE107
    2. Manasvi Boggarapu : SE22UCSE053
    3. Pranav Yeturu : SE22UCSE214
    4. Zauq Mohammed : SE22UCSE172
    5. Sahithi Nampally: SE22UCSE179
    6. Vijaya Sai Chigurupati: SE22UCSE293
    7. Yashaswi Matla: SE22UCSE300

## 6. Assumptions and Constraints

**Assumptions:**

1. The project will be completed by **May 20th, 2025**.
2. A **generic model** will be developed using LLMs to generate AI-driven, personalized ads.
3. The model will use **local trends, memes, events, and general data** to create ads.
4. The website will serve as a demo platform, showcasing the product's functionality, pricing plans, and company details. For **new clients**, it will act as a demonstration tool, while **existing clients** can log in to generate ads by providing a **product description and pin code**.
5. Only **basic security measures (login authentication, role-based access control)** will be implemented.
6. The project will be **tested with a limited number of users** to demonstrate its capabilities.
7. Third-party APIs may be used to fetch local trends and hot topics.
8. The development will utilize **familiar technologies** (React, Flask/Django, Node.js, etc.).
9. The system will be **hosted on a free-tier cloud platform**

**Constraints:**

1. **Deadline**: The project must be finished by **May 20th, 2025**.
2. **Scope:** The project will focus on essential features, including a basic ad generation system using LLMs, a simple website with a demo for new clients, a client dashboard for ad generation based on product details and location, and a basic backend to manage users and generated ads.
3. **Scalability**: The model is intended for **demonstration** rather than **commercial deployment**.
4. **Data Limitations**: The system will use **mock or synthetic data** for testing instead of full-scale real-time data scraping.
5. **Team Size**: The project will be developed by a team of **7** members.
6. **Computational Limitations**: Running **LLMs locally or through free-tier APIs**, which may affect performance.