Project Design Phase-II TechnologyStack(Architecture&Stack)

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| TeamID | 88A47BC9080CDE499E844AF1A08CEE03 |
| ProjectName | creating an sponsored post for instagram |

# Technical Architecture:

TheDeliverableshallincludethearchitecturaldiagramasbelowandtheinformationasperthetable1&table2

Content Management System

Image & Video Processing

Authentication & Authorization

User Interface

Notification System

Database

Instagram API Integration

Scheduling & posting

Security Measures

Third party Services

Error Handling

Analytics & Reporting

# Table-1:Components&Technologies:

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| --- | --- | --- | --- | --- |
| **S.No** | | **Component** | **Description** | **Technology** |
| 1. | | User Authentication | Allows users to securely log in using Instagram credentials. | OAuth 2.0 for Instagram API. |
| 2 | Content Management System (CMS) | Provides tools for users to create and manage sponsored post content. | Custom CMS using Django (Python) for backend and React (JavaScript) for the frontend. |
| 3. | Media Storage | Stores images and videos associated with posts. | Google |
| 4. | Campaign Management | Manages sponsored campaigns, scheduling, and budget allocation. | SQL |
| 5. | Ad Targeting Engine | Utilizes machine learning algorithms to target the right audience for sponsored posts. | Machine learning |
| 6. | Payment Gateway | Handles secure payment transactions for advertisers. | Stripe, Pay PaL |
| 7. | Analytics and Insights | Provides data and insights on post performance. | Data analytics |
| 8. | Push Notifications | Sends notifications to users for updates, likes, and comments. | Firebase Cloud Messaging |
| 9. | Content Delivery Network (CDN) | Ensures fast and reliable delivery of media content to end-users. | CDN services like Akamai or Cloudflare. |
| 10. | Security and Privacy Measures | Implements security features and ensures user data privacy. | SSL/TLS for data encryption, access controls, and security best practices. |
| 11. | Monitoring and Scaling | Monitors system performance and scales resources as needed to handle increased traffic. | Tools like Prometheus for monitoring and Kubernetes for resource orchestration. |

**Table-2:ApplicationCharacteristics:**

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| --- | --- | --- | --- |
| **S.No** | **Characteristics** | **Description** | **Technology** |
| 1. | User-Friendly Interface | The application should have an intuitive and user-friendly interface to ensure that users can easily navigate and create sponsored posts without any difficulty | Use responsive web design and mobile app development technologies like React Native or Flutter for a seamless user experience on both web and mobile platform |
| 2. | Content Scheduling and Automation | This feature allows users to schedule sponsored posts in advance, automate posting, and target specific audiences at the optimal times. | Implement an API integration with the Instagram Graph API or third-party social media management tools for post scheduling and automation. |
| 3. | Data Analytics and Performance Tracking | The application should provide users with insights into the performance of their sponsored posts, including engagement metrics, reach, and conversion rates. | Utilize data analytics tools and libraries like Google Analytics and social media analytics APIs to collect and present performance data. |
| 4. | Secure Account Authentication | Ensure secure authentication and authorization methods to protect user accounts and sensitive data while connecting to Instagram for post creation | Implement OAuth 2.0 for secure user authentication and authorization when linking Instagram accounts to the application |