Project Documentation

Date	3 November 2023
Team ID	NM2023TMID09738
Project Name	How to create a Reel using Canva

IDEATION PHASE

Define the Problem Statements

Date	3 November 2023
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Maximum Mark	2 Marks

How To Create A Reel Design Using Canva

Users may encounter slow loading times, crashes, or unresponsiveness, especially when working on complex or large projects.

Customize your design by adding text, images, stickers, and other elements. You can upload your own media or use Canva's extensive library of resources.

To make your reel design more engaging, you can add animations to text and elements. Canva offers a variety of animation effects.

Users may find certain design elements challenging to customize to their exact specifications, limiting creative freedom.

Problem Statement (PS)	I am (Customer)	I'm Trying to	But	Because	Which makes me feel
Performance issues	Content creator	Post a video	It counters slow loading times	It is a large file	Frustrated
Subscription cost	student	Find templates for my project	There are limited free templates	The premium versions are costly	Disappointed
Version control	Professional	Work on my new project	It needs collaborative work	It has Limited versions	Difficult to contribute

Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

Build empathy

The information you add here should be representative of the observations and research you've done about your users.

Says
What have we heard them say?
What can we imagine them saying?

Thinks
What are their wants, needs, hopes, and dreams? What other thoughts might influence their behaviour?

Does
What behaviour have we observed?
What can we imagine them doing?

Feels
What are their fears, frustrations, and anxieties? What other feelings might influence their behaviour?

Brainstrom & Idea Prioritization Template

Date	3 November 2023
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Maximum Marks	4 Marks

Brainstrom & Idea Prioritization Template:

Brainstoming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of the-box ideas are welcome and built upon, and all participants are encouraged to collaborate , helping each other develop a rich amount of creative solutions.

Step 1: Team Gathering, Collaboration and Select the Problem Statement

Step 2: Brainstrom,idea listing and grouping
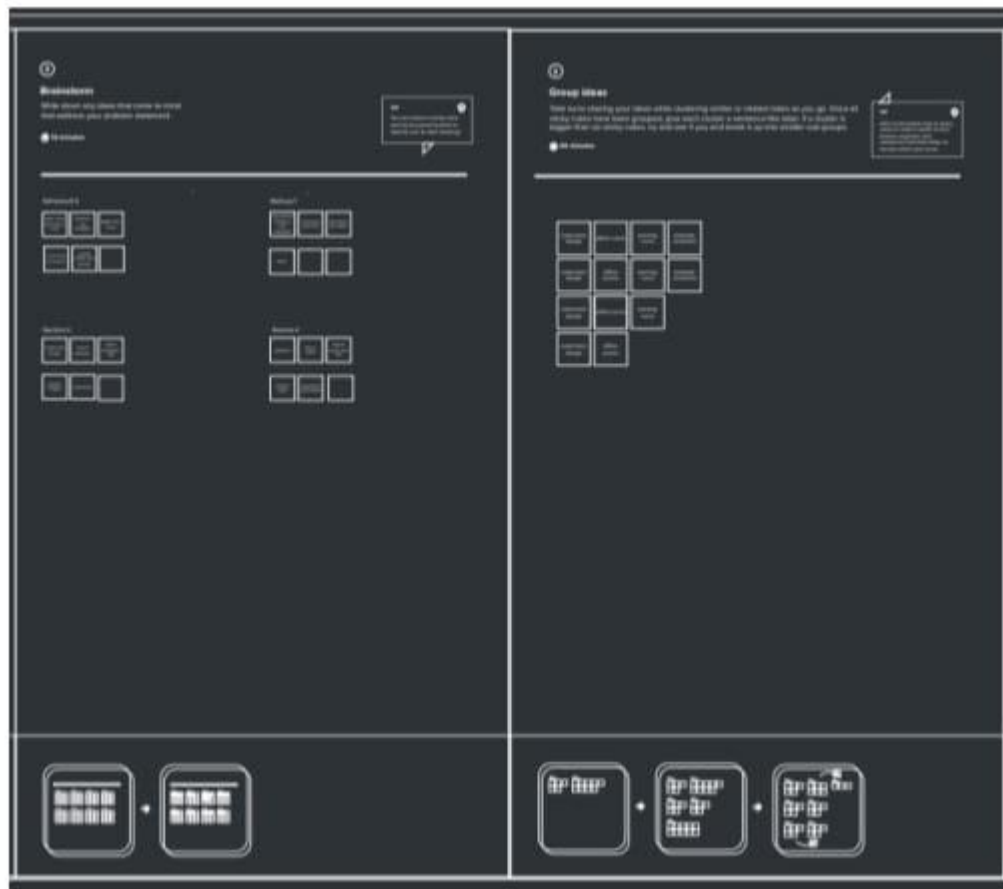
Step 3: Idea Prioritization
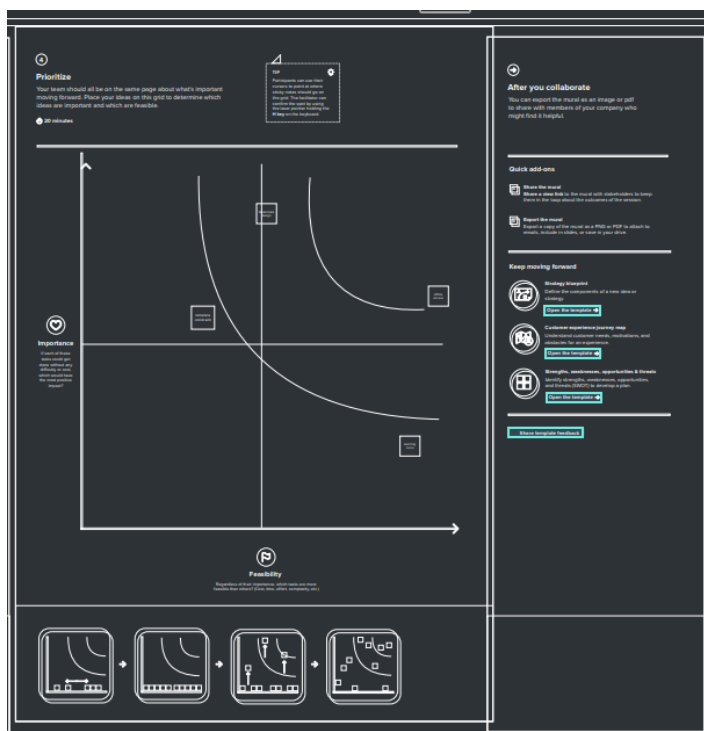
Project Design Phase-I
Proposed Solution Template

Date	03 November 2023
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Project Name	How to create a reel using Canva
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Many individuals and businesses want to harness the power of short video content on social media platforms, like Instagram and Facebook, by creating engaging and eye-catching Reels. However, they often face challenges in understanding how to effectively use Canva, a popular graphic design tool, to create captivating Reels that can grab the audience's attention and drive engagement.
2.	Idea / Solution description	Go to Canva's website and log in to your account.Click on "Create a design" and choose the video template or custom dimensions for your Reel-style content.Add elements, text, images, and animations to your video canvas. You can use Canva's built-in elements or upload your own. Use Canva's text tools to add captions or titles to your video. You can also apply various effects and animations to your elements to make your content engaging.

3.	Novelty / Uniqueness	Design your own templates that reflect your style and brand. Canva allows you to save and reuse custom templates for consistency.Incorporate polls, questions, or countdowns into your reels to engage your audience in new ways. Experiment with unique transitions between scenes or use unexpected animations to keep viewers engaged. Combine photos, videos, and animations to create a multimedia experience that tells a captivating story.
4.	Social Impact / Customer Satisfaction	Know your target audience's preferences, needs, and expectations to create designs that resonate with them.Create visually appealing and professional designs using Canva's tools and templates. Pay attention to color schemes, typography, and imagery.Maintain a consistent brand image across all your designs to build recognition and trust among your audience.
5.	Business Model (Revenue Model)	Canva could offer a premium subscription that includes access to advanced features, including the ability to create and export Reels. This subscription can be billed on a monthly or annual basis.Users who don't want a subscription could pay a one-time fee for the ability to create a certain number of Reels or buy Reel creation credits. They might also be able to purchase additional features, templates, or music tracks for their Reels.

6.	Scalability of the Solution	Canva allows you to upload and manage your own media assets, which can be helpful for maintaining a library of content to use across multiple reels. If you're working with a team, Canva for Teams offers collaborative features, ensuring scalability for multiple users. You can create multiple reels in a single session, saving and scheduling them for future posting.Canva offers premium features that can enhance your design capabilities and efficiency, which may be worth considering for scalability.

Project Design Phase-I
Solution Architecture

Date	3 November 2023
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Maximum Marks	4 Marks

Solution Architecture:

Creating a solution architecture block diagram involves visually representing the components and interactions of a system or solution.

At the top of your diagram, include a title and a brief description to explain the purpose of the architecture.

Show any external interfaces that the solution interacts with, such as users, third-party services, or external systems. These are typically depicted as labeled arrows entering and exiting the diagram.

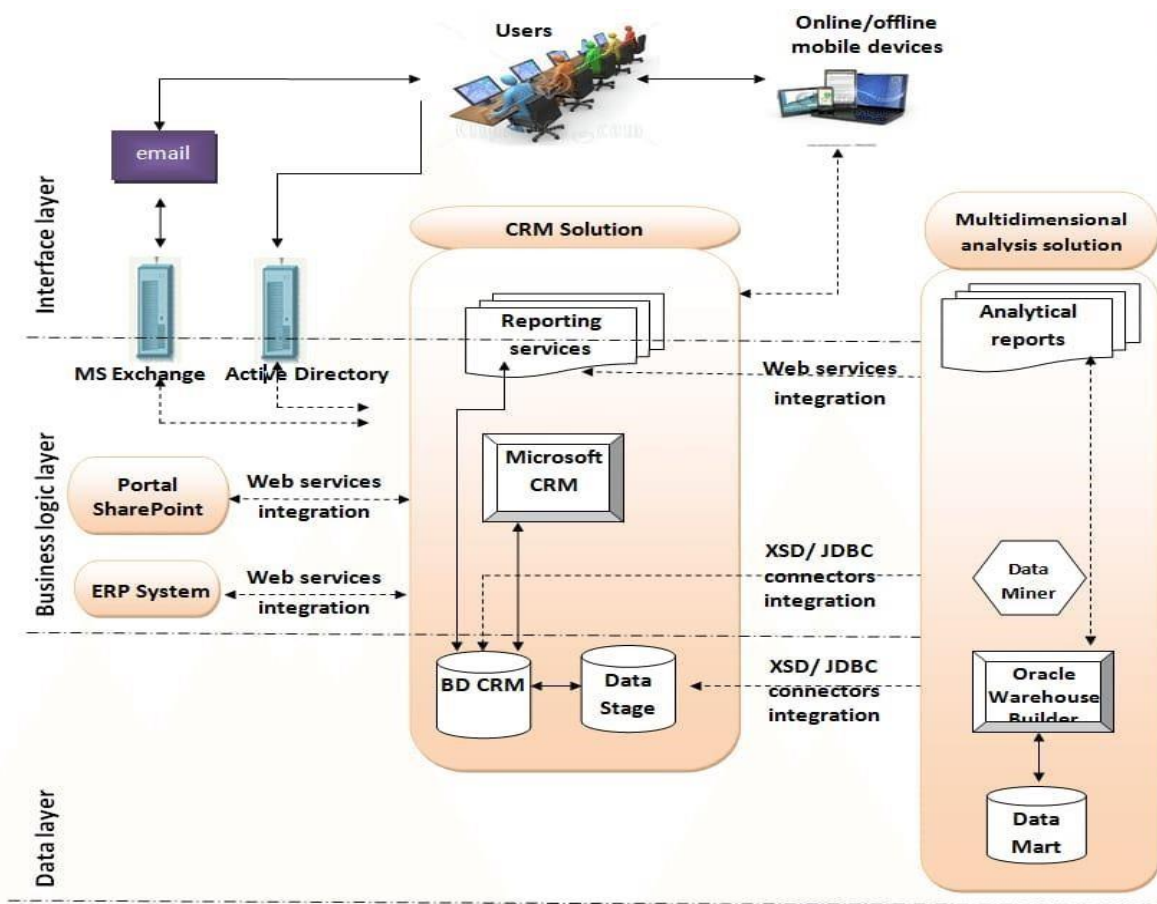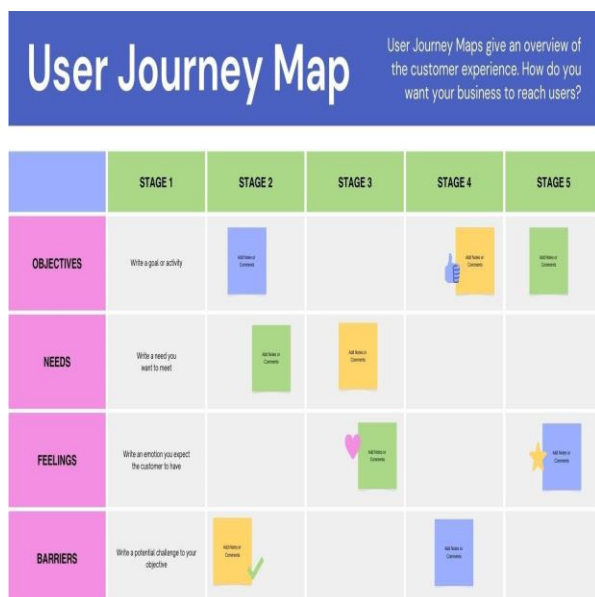## Example - Solution Architecture Diagram:

Figure 1: Architecture of canva

Project Design Phase

Determine The Requirements

Requirement Analysis

A. Functional Requirements:

FR No.	Functional Requirement	Sub Requirement(Story/Sub-Task
FR-1	Video Recording and Editing	Camera Access
FR-2	Duration Limit	Established Limit

B. Non-functional Requirements:

| FR No.	Non-Functional Requirement	Description
NFR-1	Performance	Instagram Reels should load quickly, with minimal latency, to provide a seamless user experience. Videos should start playing promptly after being selected.
NFR-2	Scalability	The system should be able to handle an increasing number of users and content uploads without a significant decrease in performance.
NFR-3	Reliability	Instagram Reels should be available and accessible to users around the clock with a high uptime rate, minimizing service interruptions.
NFR-4	Security	User data and uploaded Reels should be encrypted to protect against unauthorized access.
NFR-5	Privacy	Instagram Reels should adhere to privacy regulations and maintain user privacy by protecting sensitive user data.

Flow Charts:

The Instagram Reels Algorithm
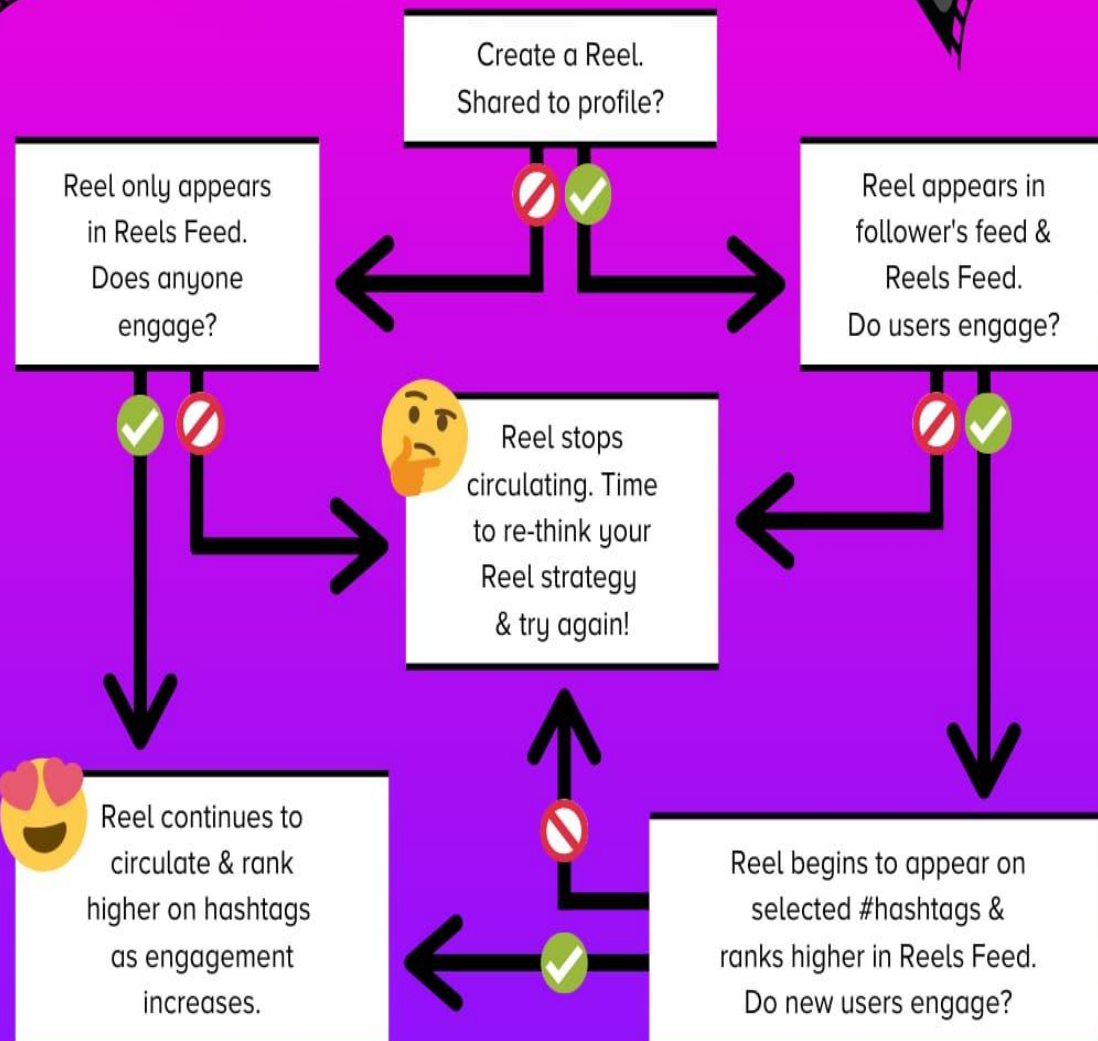
Technical Architecture:

Instagram's mobile app (iOS and Android) and website serve as the primary frontends through which users access Instagram Reels.
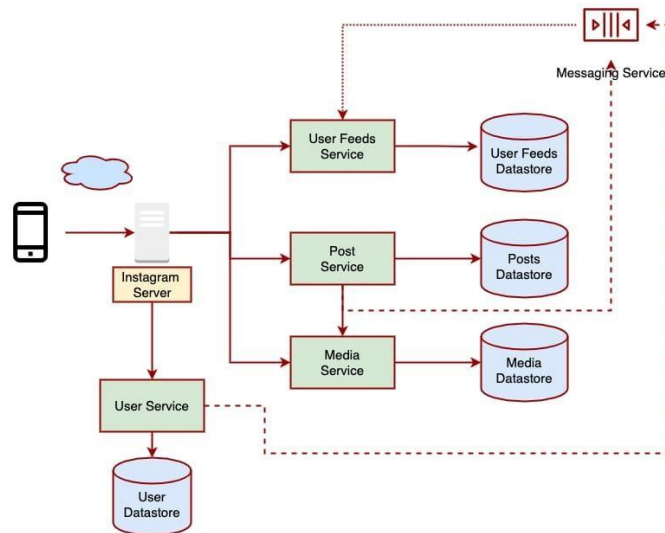
Open Source Frameworks

React: A JavaScript library for building user interfaces, which is widely used in many Facebook and Instagram products.

Pyre: An open-source machine learning framework that has been used by Meta Platforms, Inc. for AI and machine learning research.

HHVM (HipHop Virtual Machine): A virtual machine designed for executing programs written in Hack, a language developed by Facebook.

Tornado: A Python web framework and asynchronous networking library used for building scalable and non-blocking web applications.

Cinder: A C++ library for creative coding, used in various creative and interactive projects.
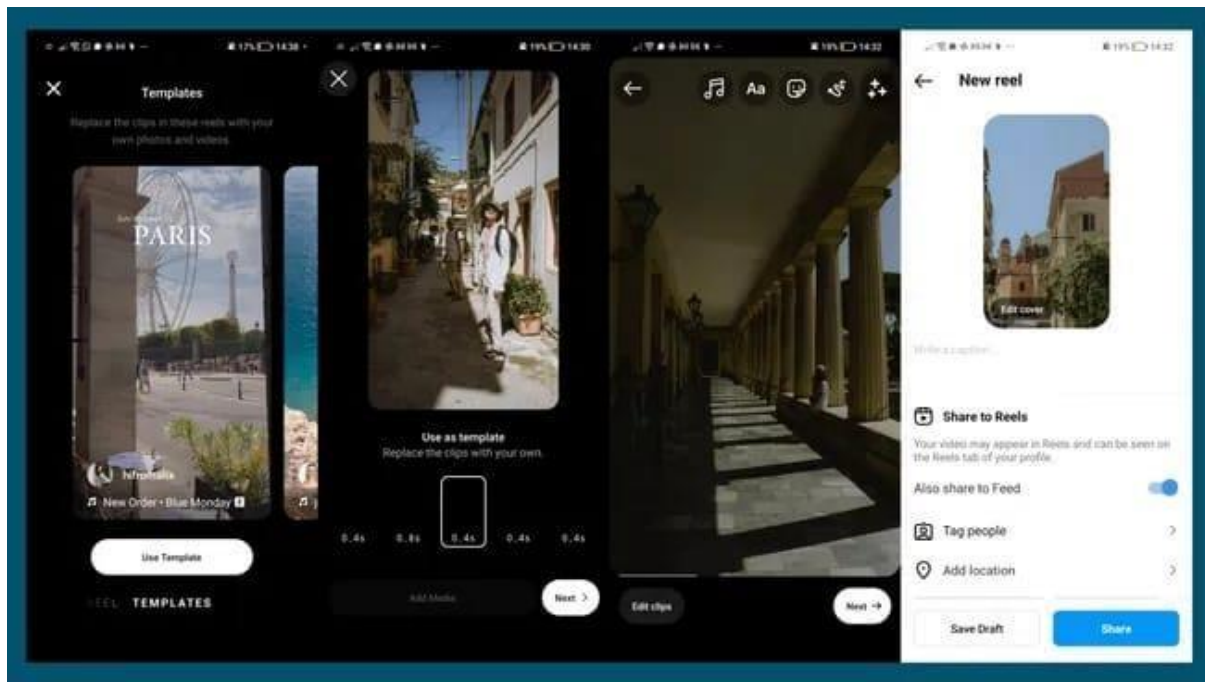
Third Party API's

The API is intended for Instagram Businesses and Creators who need insight into, and full control over, all of their social media interactions. If you are building an app for consumers or you only need to get an app user's basic profile information, photos, and videos, consider the Instagram Basic Display API instead.

Instagram's policies and APIs have evolved over time, and they have periodically limited access to certain functionalities to maintain user privacy, data security, and content quality. Therefore, they not be a public third-party API for directly interacting with Instagram Reels.

If you are interested in incorporating Instagram-like video-sharing features into your application or platform, you may need to explore alternative video-sharing and social media APIs that offer similar functionalities. Additionally, you can consider creating your own video-sharing feature, adhering to the privacy and copyright policies that govern such services.

Always ensure that your use of third-party APIs and user-generated content complies with legal and ethical standards.

Cloud Deployment

1.Load Balancing:

Load balancing is the method of distributing network traffic equally across a pool of resources that support an application. Modern applications must process millions of users simultaneously and return the correct text, videos, images, and other data to each user in a fast and reliable manner.

2.Storage and Data Management:

Instagram uses various cloud-based storage solutions for different types of data.

Object storage: Cloud providers' object storage services (e.g., Amazon S3, Google Cloud Storage) are used to store images, videos, and other media shared on the platform.

Databases: A combination of relational databases (e.g., PostgreSQL, MySQL) and NoSQL databases (e.g., Cassandra, MongoDB) may be used to store user data, profiles, Reel information, and engagement metrics.

3. Content Delivery:

To ensure that images and videos load quickly for users around the world, Instagram utilizes Content Delivery Networks (CDNs) provided by cloud service providers. CDNs cache and deliver content from servers located closer to end-users.

4. Compute Resources:

Cloud computing platforms offer virtual machines and containers for hosting and running Instagram's backend services, including API servers, data processing, and AI algorithms.
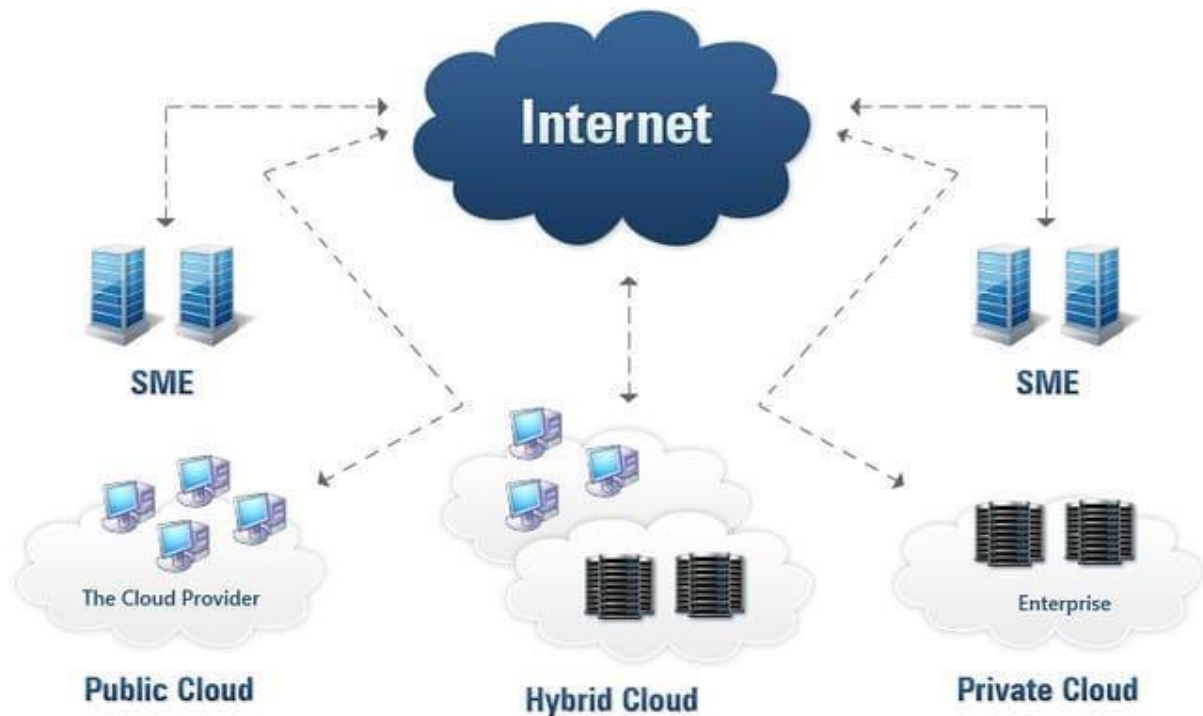
Project Development Phase
Number of Functional Features Included In The Solution

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 Instagram has tools and features for users to create stunning reels, but if you're looking to stand out, head over to Canva's free Instagram Reels creator.

Take things further by automatically syncing your video to a beat with Beat Sync to highlight peak moments and engage your audience. You'll also love features that'll automate manual editing tasks, like speeding up videos or adding subtitles to make your content more accessible to an array of people.

Juggling several things at the same time? It's challenging to keep track of all the content you publish for yourself, your clients, or your brand. But with our Instagram reel maker, you can bet that, even in a rush, you can still produce multiple high-quality reels.

Make IG reels on-the-go with our mobile app or a laptop. Get your entire team onboard, too. Give them access to your projects, collaborate on the reels, and edit them in real-time. With ready-made templates, music tracks, animations, and a media library of illustrations, graphics, and clips, you can easily make reels in minutes.

Upload your reels as is or tweak them on Canva's AI video editor on our free reel creator before crossposting. Rest assured that all elements you've added will remain on your layout, even if you change the dimension, scale, or file format. Additionally, you have the option to download the reel and post it manually or share it on several platforms directly from Canva's reel editor.

So you've seen Reels take over Instagram and you're wondering what they're all about and how you can get started. The once photo-centric social media platform chased the viral allure of short-form video and seemingly overnight, the infamous Instagram algorithm that dictates who sees what, prioritised Reels.

The subsequent demand on brands, businesses and creators – to shift from creating stunning photos to shooting, editing, exporting and uploading eye-catching videos – left everyone Reeling. Maybe that's how they came up with the name.

Code layout, Readability and Reusability

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PROJECT TITLE	To create a Reel Design using Canva
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Create a Developer Account:

Go to Instagram's developer portal and create a developer account.

Create an App:

Register your application and get an API key or access token.

For example:

You can use javascript to add function to your Instagram reels. You can implement features like play, like, comment, and share.

CODING:

```
const video= document.getelementById(".reels-video"); const

likeButton= document.querySelector(".like-button"); const

commentButton= document.querySelector(".comment-button");

const shareButton = document.querySelector(".share-button");


likeButton.addEventlistener("click",()=>

{
```

// Handle comment functionality

});

commentButton.addEventlistener("click",()=>

{

// Handle share functionality

});

Utilization of Algorithms, Dynamic Programming, Optimal Memory Utilization

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A previous design or use elements from a template and modify them as needed. Designing reusable components in Canva for creating Reels or any other content can help you maintain a consistent and cohesive look across your designs.

1. Algorthim:

* Content Recommendation Algorithm

* Real-Time Enhancement Algorithm

 2**. Templates:**

Start by creating template designs for your Reels with common elements like backgrounds, text styles, and colour schemes. Save these templates as your starting point for future designs.

2. Use Shared Elements:

Canva allows you to create and save individual elements (like logos, icons, or images) as part of your brand kit. Utilize these shared elements in different designs to maintain consistency.

3. Text Styles:

Create and save text styles that match your brand's fonts and colours. This ensures that your text elements in different Reels have a consistent look.

5. Design Elements:

When working on a new Reel, don't start from scratch. Instead, duplicate.

6. Organize Your Designs:

Keep your Canva projects organized. Use folders to group related designs and templates together for easy access.

7. Elements and Layers:

Name and label your design elements and layers logically. This makes it easier to find and reuse specific elements in your designs.

8.Dynamic Programming:

* Video Compression

While Canva doesn't provide a code-based reusability feature, following these design practices will help you maintain consistency and efficiency in your Reels designs. After creating your design in Canva, you can export it for use in video editing software or other platforms to turn your video reel.

Exception Handling

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Exception handling is an important aspect of software development, including when you are working with Instagram API to create reels.
API may change over time to refer the latest documentation and error handling.

1. File Format:

Canva may have limitations on the file formats you can import. If you try to import an unsupported file format, an exception may occur. To handle this, ensure your media files (images, videos, etc.) are in compatible formats like JPEG, PNG, or MP4, which Canva supports.

2. Rate Limiting:

It may impose rate limits request to prevent abuse. Handle rate-limiting exceptions by respecting

the limits or and implementing the retry mechanisms.

3.Export error:

corrupted export file, check the design for any complex elements that might cause issues.
Simplify the design if necessary and try exporting again.

4. Service Outages:

Occasionally, Canva may experience server outages or downtime. If you encounter errors due to Canva's service

being unavailable, the best approach is to wait for the service to come back online. Canva typically communicates service status through their official channels.

5. Limitations

Canva has limitations on the number of elements you can add to a design. If you encounter exceptions related to exceeding these limits, consider simplifying your design or removing unnecessary elements.

6. User Errors:

Sometimes, exceptions may occur due to user mistakes, such as accidentally deleting an important element or making design choices that are not conducive to Reels. In such cases, the solution is to correct the mistake or revert to a previous version of the design if you have saved it.

7. Compatibility:

Canva is web-based and relies on a compatible web browser. If you experience issues while designing, try using a different browser or ensuring that your current browser is up to date.

8. Support:

If you encounter persistent issues that you cannot resolve, consider reaching out to Canva's customer support for assistance. They can help troubleshoot specific problems and provide guidance.

Always consult the latest API documentation for the most up-to-date information on error handling and best practices.

Model Performance Metrics

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Creating model performance metrics using Canva, a graphic design tool, is not the typical use case for this platform, but it can be done with some creativity.

Open Canva: Log in to your Canva account or sign up if you don't have one.

Choose a Template: Canva offers various templates for different types of graphics. You can start with a blank canvas or choose a template that suits your project. Look for templates related to data visualization, charts, or infographics.

Design Layout: Create a layout that represents the model performance metrics you want to display. You can include sections for metrics like accuracy, precision, recall, F1-score, and more.

Add Text: Use text elements to label each section and provide explanations for the metrics. Customize the fonts, sizes, and colors to make the text visually appealing.

Insert Charts: Canva provides a chart tool that allows you to create bar charts, line charts, or pie charts. Input your model's performance metrics data and generate the corresponding charts. You can also use external data visualization tools like Excel or Google Sheets to create the charts and then import them into Canva.
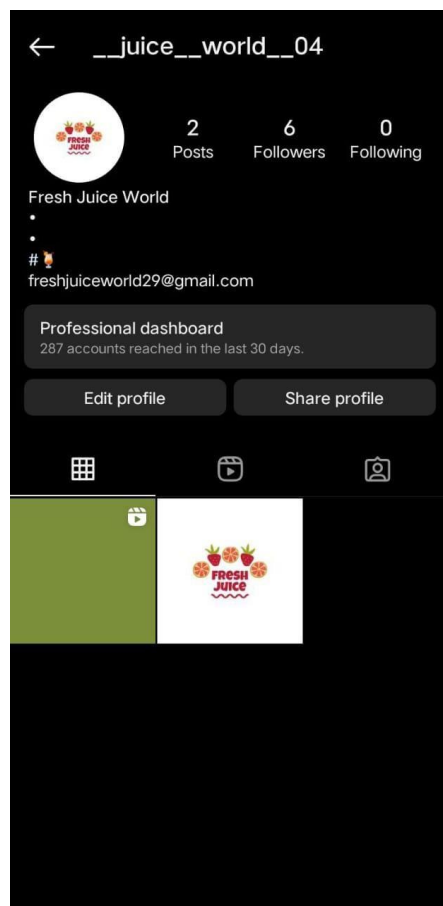
Icons and Images: You can use Canva's extensive library of icons and images to add relevant graphics to your metrics. For example, you can use icons of thumbs up for good performance and thumbs down for poor performance.

Color Scheme: Maintain a consistent color scheme that aligns with your brand or the visual representation you want to convey. Canva allows you to customize colors easily.

Export or Share: Once your model performance metrics visual is ready, you can export it in various formats (e.g., PNG, JPEG, PDF) or share it directly from Canva.

Remember that while Canva can help to design visually appealing metrics, the actual collection and calculation of model performance metrics typically require data analysis and visualization tools like Python, R, or specialized data science libraries.Canva is more about the presentation and design aspect, so ensure that the metrics are accurate and correctly calculated before creating a visual representation of them.

Final Output:

Uploaded reels in Instagram: