DEPARTMENT OF
ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

22PCS49 - DIGITAL MARKETING LABORATORY

LABORATORY RECORD

BONAFIDE CERTIFICATE

Name : .....

Register Number: .....

Academic Year : .....

Year/Semester : .....

Department : .....

This is to certify that this Laboratory Record is the bonafide work done by the above student, who has successfully completed the prescribed experiments as part of the _____

_____Laboratory during the Academic Year _____

Faculty in-charge **Head of the Department**

Submitted for the End Semester Practical Examination held on _____

Internal Examiner **External Examiner**

VISION OF THE INSTITUTION

To be a leading and path breaking Institution in multi-disciplinary education, research and industry related development for meeting the challenges of New India.

MISSION OF THE INSTITUTION

M1: Provide quality Engineering Education, Foster Research and Development; inculcate innovation in Engineering and Technology through state-of-the-art infrastructure.

M2: Nurture young men and women capable of assuming leadership roles in the society for the betterment of the country.

M3: Collaborate with industry, government organizations and society for curriculum alignment and focused, relevant outreach activities.

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

VISION:

To Impart Quality Education to Stimulate Academic Excellence, Research, And Skills in Students in the Areas of Data Science and Artificial Intelligence at National and Global Levels to Build an Ecosystem to Contribute Significantly to Society.

MISSION:

M1: Develop Technically Competent and Socially Responsible Professionals.

M2: Inculcate Professional Ethics, Human Values, Leadership Qualities and Lifelong Learning.

M3: To Prepare Students to Excel in The Field of Artificial Intelligence Through Collaboration with the AI Expertise Via the Centre of Excellence.

M4: Inspire Students to Develop Their Ideas into Products and Transforming Them into Aspirant Ai Professionals and Entrepreneurs.

Programme Educational Objectives (PEOs)

PEO1 - To prepare students to critically analyze existing literature in an area of specialization and enhance research to ethically develop innovative and technology-oriented methodologies with industrial support to solve the problems.

PEO2 - To provide students with strong foundational concepts advanced techniques and tools in order to enable them to build solutions for societal needs.

PEO3 – To enable graduates to pursue research and gain a successful career in academia through industrial association.

Program Outcomes (POs)

Graduates of the programme Artificial Intelligence and Data Science will be able to:

1. **Engineering Knowledge**: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
2. **Problem Analysis**: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4).
3. **Design/Development of Solutions**: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
4. **Conduct Investigations of Complex Problems:** Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).
5. **Engineering Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6).
6. **The Engineer and The World**: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).
7. **Ethics**: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
8. **Individual and Collaborative Team Work**: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
9. **Communication**: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences.
10. **Project Management and Finance**: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
11. **Lifelong Learning**: Recognize the need for, and have the preparation and ability for
    i) independent and life-long learning ii) adaptability to new and emerging technologies and
    iii) critical thinking in the broadest context of technological change. (WK8)

Program Specific Outcomes (PSOs)

Graduates of the programme Artificial Intelligence and Data Science will be able to

1. Adapt Information and Communication Technologies (ICT) and foundational concepts of Electronics and Communication Engineering to analyze, design and develop solutions.

2. Provide knowledge to create quality products for scientific and business applications by incorporating novel ideas and best practices.

DO'S & DONT'S FOR LABORATORY

DO'S

- Wear the proper uniform and ID card while attending all lab sessions.
- Maintain discipline in the lab and follow the instructions given by the faculty or lab instructor.
- Handle computers, peripherals, and network equipment carefully.
- Complete all assigned batch work on time and cooperate with your batch members.
- Use the systems only for academic purposes like coding, assignments, and project work

DONT'S

- Do not install, uninstall, or modify any software or system settings without permission.
- Do not browse social media, entertainment platforms, or access unauthorized websites.
- Do not bring food, drinks, or snacks inside the laboratory.
- Do not misuse or mishandle keyboards, mice, cables, or other peripherals.
- Do not leave the system without logging out or leave the workspace untidy after use.

SAFETY PRECAUTIONS FOR WORKING IN THE LABORATORY

- Keep your workspace clean and free from unnecessary items to avoid accidents.
- Report any damaged wires, loose connections, or malfunctioning equipment to the lab instructor immediately.
- Follow all safety instructions displayed in the laboratory and given by faculty.
- Switch off power supply and function generator while working on the circuit.
- Handle computers, electrical equipment, and cables with care to prevent shocks or damage.

LIST OF EXPERIMENTS

1.	Analyzing the Role of a Newsletter in Branding and Customer Engagement
2.	Implementation of keyword search for a skincare hospital website using Google keyword planner tool.
3.	Demonstration of the Google Webmasters Indexing API
4.	Case Study: management of leads in an insurance company
5.	Discussion of negative and positive impacts and ethical implications of social media for political advertising
6.	Discussion of Predictive analytics and its impacts in marketing automation

List of Experiments Mapping with COs, POs &PSOs

Exp. No.	Name of the Experiment	COs	POs	PSOs
1	Analyzing the Role of a Newsletter in Branding and Customer Engagement	CO1, CO3	PO1, PO2, PO6, PO9	PSO1, PSO2
2	Implementation of keyword search for a skincare hospital website using Google keyword planner tool.	CO2, CO5	PO2, PO5, PO10	PSO1, PSO2
3	Demonstration of the Google Webmasters Indexing API	CO2, CO5	PO3, PO5, PO11	PSO1
4	Case Study: management of leads in an insurance company	CO1, CO3	PO2, PO6, PO8, PO10	PSO1, PSO2
5	Discussion of negative and positive impacts and ethical implications of social media for political advertising	CO4	PO6, PO7, PO9	PSO2
6	Discussion of Predictive analytics and its impacts in marketing automation	CO5	PO1, PO4, PO5, PO11	PSO1

22PCS49-DIGITAL MARKETING

LIST OF EXPERIMENTS

S.No	Title of the Experiment	Pg.No	Marks	Sign
1	Analyzing the Role of a Newsletter in Branding and Customer Engagement			
2	Implementation of keyword search for a skincare hospital website using Google keyword planner tool.			
3	Demonstration of the Google Webmasters Indexing API			
4	Case Study: management of leads in an insurance company			
5	Discussion of negative and positive impacts and ethical implications of social media for political advertising			
6	Discussion of Predictive analytics and its impacts in marketing automation			
		Total		

Subject Incharge

Ex.No : 01	ANALYZING THE ROLE OF A NEWSLETTER IN BRANDING AND CUSTOMER ENGAGEMENT
DATE :	

AIM

To subscribe to a company's weekly or quarterly newsletter and analyze how its content, design, and structure support the company's branding and target customer segments.

ALGORITHM

Step 1: Select a Company: Choose a company relevant to a sector of interest (e.g., fashion, tech, education, etc.).

Step 2: Subscribe to Newsletter: Register to receive the company's regular newsletter.

Step 3: Collect Newsletters: Gather at least 2–4 editions over time (weekly or quarterly).

Step 4: Content Analysis: Examine text, headings, media, CTAs (Calls to Action), and tone.

Step 5: Structure Analysis: Study layout, colors, brand logo, formatting, consistency, and usability.

Step 6: Branding Evaluation: Identify how branding elements (logo, colors, values) are conveyed.

Step 7: Customer Segment Mapping: Analyze which customer needs or interests are targeted.

Step 8: Report Findings: Create a report summarizing how the newsletter supports brand and customer engagement.

PROGRAM CODE/PROCEDURE

Step 1: Company Selection

The first step involves choosing a company that actively uses newsletters as part of its digital marketing strategy. The chosen company should be well-established and known for sending regular, structured newsletters.

The selection can be based on personal interest or industry relevance. Some common examples include Amazon (retail), Apple (technology), Nike (sportswear), Nykaa (beauty and cosmetics), or BYJU'S (education technology). For this experiment, visiting the official

website of the selected company is necessary to locate the subscription option, which is usually found at the bottom of the homepage or as a pop-up.

Flipkart, a leading player in India's e-commerce industry, has been selected for this newsletter analysis. Known for its wide product range, seasonal sales, and customer-centric marketing strategies, Flipkart actively uses newsletters as part of its digital marketing efforts. The company frequently sends structured and visually appealing newsletters that include promotional offers, product updates, and category-based recommendations. The newsletter subscription option can be found on the Flipkart homepage, usually at the bottom of the page or occasionally as a pop-up. Users are encouraged to sign in or create an account and opt in to receive promotional emails.

Step 2: Subscription to Newsletter

After identifying the company, the next step is to subscribe to their newsletter. This typically requires entering a valid email address and confirming the subscription through a verification link sent to the inbox. It is recommended to create a separate email folder to organize and store the newsletters for future reference and analysis.

To subscribe to Flipkart's newsletter, users need to visit the official Flipkart website, log in or create a new account, and ensure that the promotional emails option is enabled in their account settings. Once subscribed, a verification email may be sent to confirm the subscription. For better organization, it is advised to create a separate folder in the email inbox to collect and label incoming newsletters for easy tracking. This organization helps in maintaining a clear timeline of Flipkart's communication and makes analysis more efficient.

Step 3: Data Collection

Following the subscription, the next step is to collect 2 to 4 issues of the newsletter over a span of a few weeks (if weekly) or months (if quarterly). Each newsletter should be saved—either as a screenshot or PDF—and labeled with the date of receipt.

The objective is to track and compare the frequency, format, and key highlights of each edition. Observations should include subject lines, header images, type of promotions, and any clickable links included in the mail.

For this analysis, three editions of Flipkart's newsletters were collected over the course of July 2025. The first issue titled "Flipkart Monsoon Sale" was received on July 1st, followed

by "Back to School Deals" on July 10th, and "Mega Electronics Days" on July 17th. Each newsletter was saved in PDF format and labeled with its corresponding date for reference. Observations from these editions include catchy subject lines such as “Monsoon Mega Deals Await You” and “Exclusive Student Offers Just for You,” engaging header images, discount offers across multiple product categories, and strategic clickable links that guide users to the Flipkart website for further exploration.

Step 4: Content Analysis

Once data has been collected, a detailed analysis of the content is conducted. This involves examining the nature of the text, the type of content shared (such as new product announcements, special discounts, tips, tutorials, blogs, or customer success stories), and the tone of communication (formal, friendly, persuasive, or informative).

Additionally, attention should be paid to personalized elements, such as the use of the recipient’s name or recommendations based on user behavior. The presence of calls-to-action (CTAs) like “Buy Now,” “Explore More,” or “Subscribe Today” also plays a vital role in encouraging customer interaction.

Flipkart’s newsletter content is promotional in nature and employs persuasive language that encourages immediate action. The newsletters often highlight flash sales, new arrivals, curated shopping lists such as “Top Picks Under ₹999,” and time-sensitive deals. The tone of the communication is friendly and engaging, making readers feel personally addressed. Personalization plays a major role, with customer names appearing in greetings and product recommendations based on browsing history or previous purchases. The inclusion of strong calls-to-action such as “Shop Now,” “Explore More,” and “Limited Stock – Buy Now” motivates readers to engage with the content and make a purchase.

Step 5: Structure and Layout Analysis

After content analysis, the structure and layout of the newsletter are observed. This includes evaluating the placement of headers, the use of images or videos, font choices, branding elements (such as the company logo and brand colors), and how the newsletter is visually organized. It is also important to assess whether the design is responsive—that is, whether it displays properly on mobile devices as well as desktops. A consistent, visually appealing layout helps build brand recognition and ensures a smooth user experience.

The structure of Flipkart's newsletters is clean and consistent. Each newsletter begins with the Flipkart logo and the title of the campaign at the top, followed by high-quality images and categorized content sections. The use of the brand's yellow and blue color scheme enhances brand recognition. Font choices are readable and remain consistent throughout the newsletter. The body of the email typically contains product images, short descriptions, and prominent "Buy Now" buttons. Additionally, the newsletters are mobile responsive and load properly across devices, ensuring that users have a seamless viewing experience whether on desktop or smartphone.

Step 6: Branding Evaluation

This step involves assessing how effectively the newsletter communicates the company's branding. Branding includes the values, tone, identity, and visuals associated with the company.

For instance, Apple may emphasize elegance and innovation in its newsletters, while Nykaa might focus on empowerment, beauty trends, and trust through customer reviews and product recommendations.

The presence of taglines, consistent color schemes, fonts, and campaign elements all contribute to brand identity. The goal is to observe how well the newsletter reinforces the company's image in the reader's mind.

Flipkart's branding is strongly represented in its newsletters. From the use of the company's logo and colors to the tone of communication and product presentation, the branding remains consistent. Campaign taglines such as "India's Biggest Online Sale" or "Deals You Can't Miss" reinforce the brand's value proposition. Loyalty features such as Flipkart Plus and SuperCoins are regularly highlighted to strengthen brand engagement and customer retention. Overall, the newsletters project Flipkart's image as a fun, value-driven, and customer-focused brand.

Step 7: Target Audience Identification

Next, the newsletter's content is analyzed in terms of the customer segments it targets. This involves identifying who the newsletter is written for—whether it targets students, parents, professionals, tech-savvy users, fitness enthusiasts, or a combination of groups.

The language, imagery, product suggestions, and segmentation (like "Top Picks for You" or "Student Offers") reveal which audience the company is trying to attract or retain. Personalized promotions, user-specific product highlights, and value-driven content also help in defining customer segments.

The content of Flipkart's newsletters is crafted to appeal to different customer segments. Specific campaigns target students through "Back to School Offers," while tech enthusiasts are drawn in by promotions on smartphones and gadgets. Other newsletters focus on home shoppers, promoting products such as kitchen appliances, furniture, and home décor. The segmentation is clear from the language and visuals used—phrases like "Top Picks for You" or "Student Deals" make the target audience easily identifiable. Personalized product suggestions and discounts also help in engaging specific audience groups, improving the relevance of each newsletter.

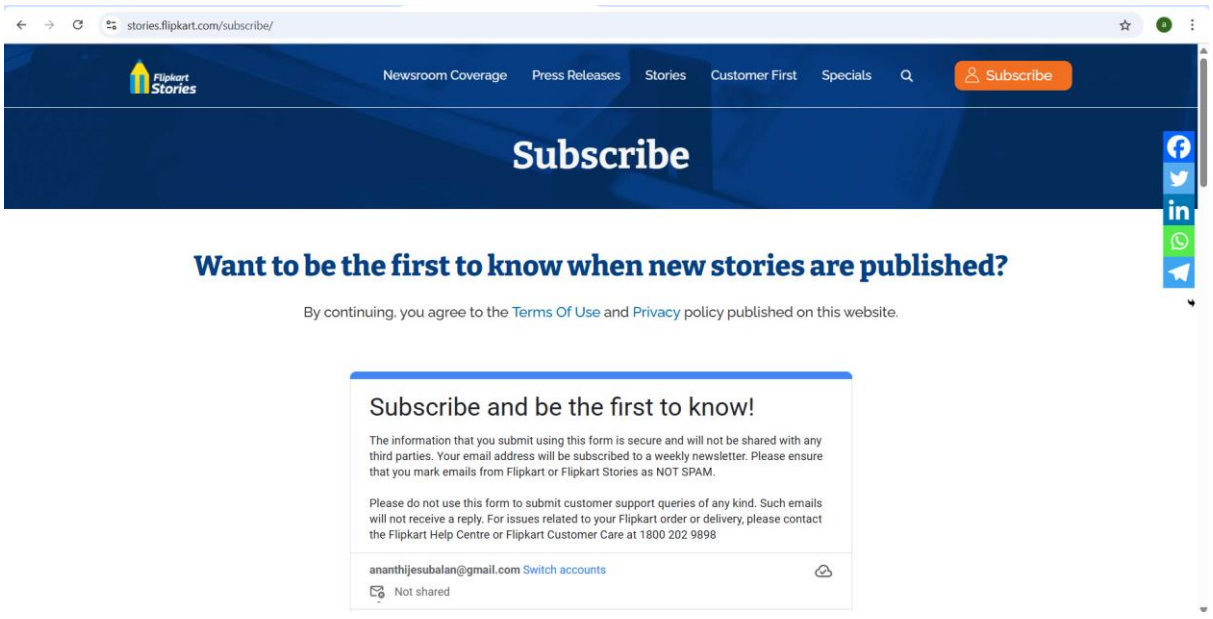
Step 8: Report Writing and Conclusion

The final step is to document all findings in a structured report. The report should include an introduction to the company and newsletter, followed by detailed observations on content type, design structure, branding strategies, and audience targeting.

Screenshots or clips of specific newsletter sections should be used to support the analysis. The conclusion should summarize how the newsletter contributes to the brand's visibility, customer engagement, and overall marketing strategy.

This analysis of Flipkart's newsletters reveals a strategic use of email marketing to enhance brand visibility and customer interaction. Each newsletter is carefully crafted with attention to design, content, structure, and personalization. Screenshots of header images, personalized sections, and CTAs can be included in the final report to support observations. In conclusion, Flipkart's newsletters serve as a powerful tool in its digital marketing strategy. They not only keep customers informed but also drive sales and improve customer loyalty through effective branding and tailored communication.

OUTPUT


stories.flipkart.com/subscribe/
Flipkart Stories
Newsroom Coverage
Press Releases
Stories
Customer First
Specials
Subscribe
Subscribe
Want to be the first to know when new stories are published?
By continuing, you agree to the Terms Of Use and Privacy policy published on this website.
Subscribe and be the first to know!
The information that you submit using this form is secure and will not be shared with any third parties. Your email address will be subscribed to a weekly newsletter. Please ensure that you mark emails from Flipkart or Flipkart Stories as NOT SPAM.
Please do not use this form to submit customer support queries of any kind. Such emails will not receive a reply. For issues related to your Flipkart order or delivery, please contact the Flipkart Help Centre or Flipkart Customer Care at 1800 202 9898
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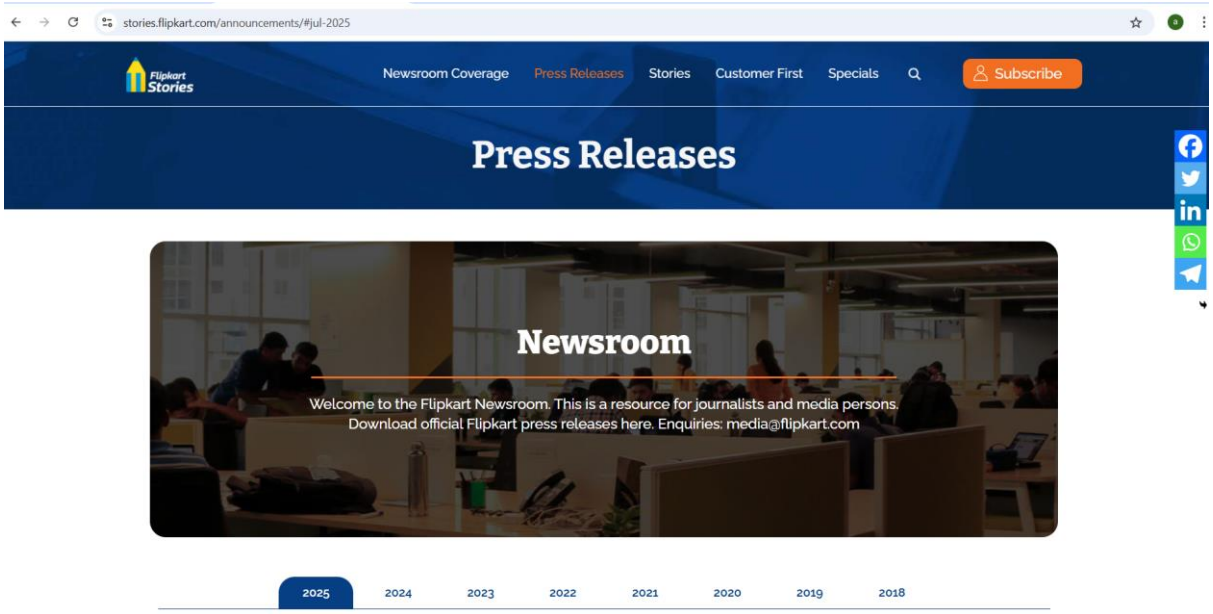
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Flipkart Stories
Newsroom Coverage
Press Releases
Stories
Customer First
Specials
Subscribe
Press Releases
Newsroom
Welcome to the Flipkart Newsroom. This is a resource for journalists and media persons.
Download official Flipkart press releases here. Enquiries: media@flipkart.com
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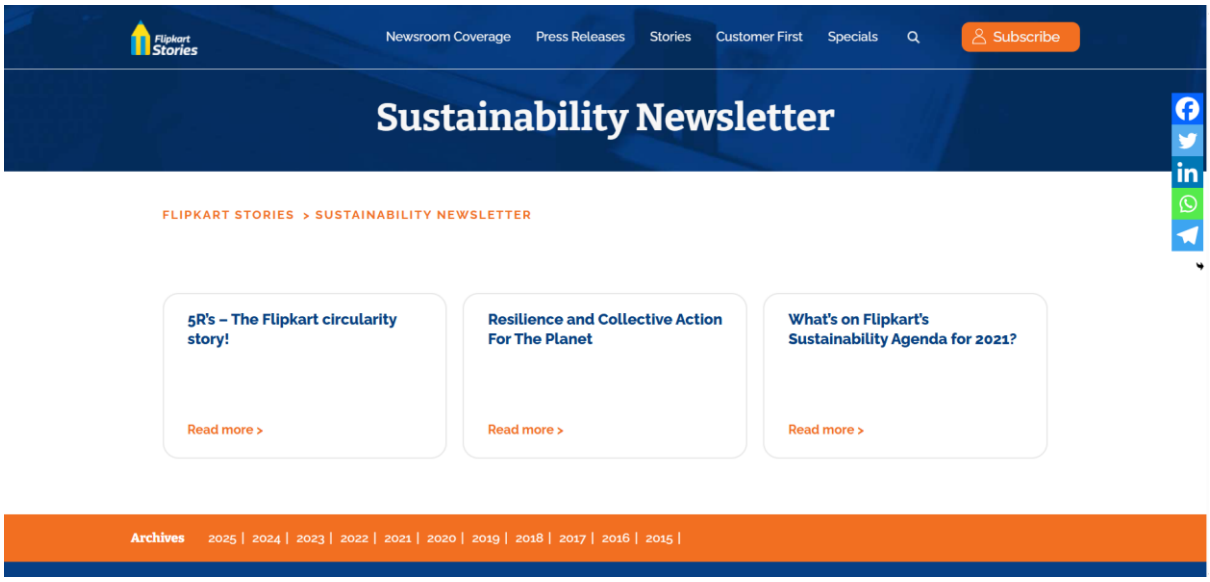


RESULT

Thus the experiment is done to analyze the role of a newsletter in branding and customer engagement and also the inference is obtained successfully.

Ex.No : 02	IMPLEMENTATION OF KEYWORD SEARCH FOR A SKINCARE HOSPITAL WEBSITE USING GOOGLE KEYWORD PLANNER TOOL
DATE :	

AIM

To identify high-traffic, low-competition keywords related to skincare hospital services using Google Keyword Planner, for use in SEO strategies to increase website visibility and traffic.

ALGORITHM

Step 1: Define core topics (e.g., skin treatment, acne, pigmentation).

Step 2: Log into Google Ads and open Keyword Planner Tool.

Step 3: Use "Discover new keywords" to enter initial terms.

Step 4: Analyze results: Focus on high search volume + low/medium competition.

Step 5: Filter keywords by location (India or city-specific), language, and device.

Step 6: Export top keywords for website content and SEO.

PROGRAM CODE/PROCEDURE

Step 1: Open Google Ads

- Go to https://ads.google.com on your browser.
- If you don't already have an account, sign up using your Gmail account.
- During sign-up, you may be prompted to create a dummy campaign. Complete it or skip the step (if the option is available) to reach the dashboard.

Step 2: Access Keyword Planner

- Once inside the Google Ads dashboard, look at the top-right corner.
- Click on the **"Tools and Settings"** icon (represented by a wrench or spanner symbol).
- Under the **"Planning"** section, click on **"Keyword Planner."**

Step 3: Choose 'Discover New Keywords'

- You will be presented with two options:
    1. **Discover new keywords** (for keyword ideas)
    2. **Get search volume and forecasts** (to analyze specific keywords)

- Click on **"Discover new keywords"** to generate a list of relevant keywords from your seed keyword.

Step 4: Enter Your Seed Keywords

- In the keyword input field, enter phrases related to skincare hospital services.
    - Examples:
        - "skin care hospital"
        - "skin treatment"
        - "laser treatment for acne"
        - "best dermatologist near me"
- These terms represent what users might type into Google when looking for skincare services.

Step 5: Define Target Audience

- Below the keyword input, set the following filters:
    - **Location:** Choose the geographic area (e.g., India, Tamil Nadu, Chennai) where the skincare hospital operates or targets customers.
    - **Language:** Select **English** or the appropriate language based on your target audience.
    - **Search Network:** Keep the default (Google) or include Google search partners for wider reach.

Step 6: Click 'Get Results'

- After inputting the keywords and setting filters, click on the **"Get Results"** button.
- Google will generate a list of keyword suggestions along with key data.

Step 7: Analyze Keyword Metrics

- For each keyword suggestion, observe:
    - **Average Monthly Searches:** Number of times this keyword is searched.
    - **Competition:** Indicates how many advertisers are bidding on that keyword (Low/Medium/High).
    - **Top of Page Bid (Low Range):** The lowest amount advertisers pay for ads on top positions.
    - **Top of Page Bid (High Range):** The highest amount paid.
- These help identify which keywords are valuable and cost-effective for your website.

Step 8: Select and Shortlist Keywords

- Shortlist keywords that have:
    - **High or moderate monthly search volume**
    - **Low or medium competition**
    - **Affordable top-of-page bid rates**
- Focus on specific and actionable keywords, such as:
    - "Affordable skin treatment Chennai"
    - "Laser acne removal clinic"

Step 9: Download or Export the Results

- Once you finalize a set of useful keywords, click the **"Download"** button (available at the top-right of the keyword table).
- Choose the file format (Excel CSV or Google Sheets) to save the keyword list for your report.

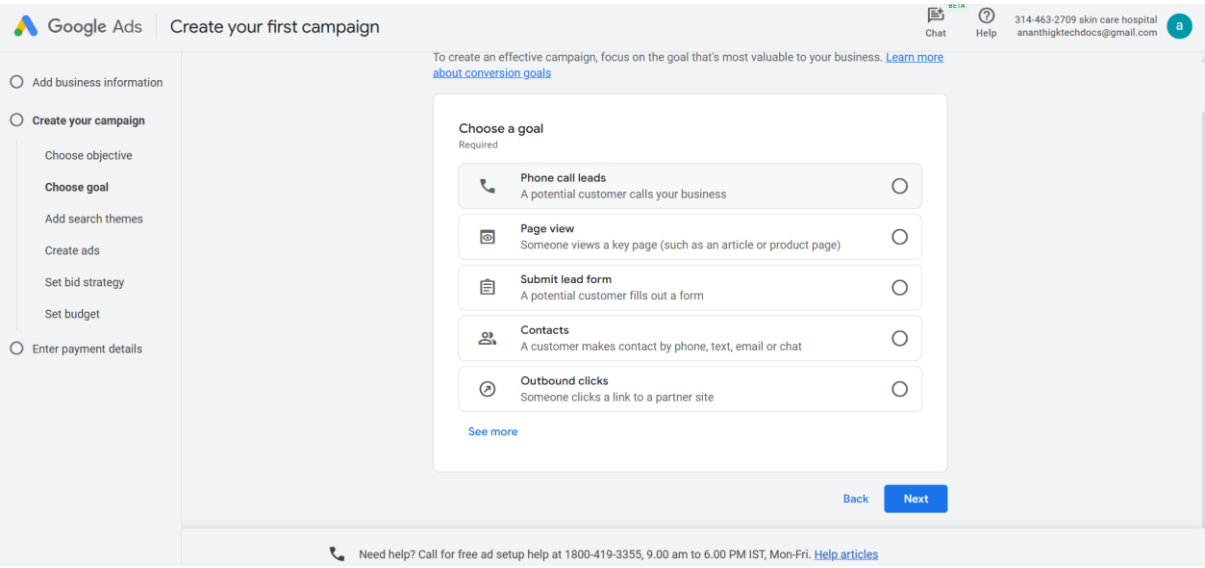
Step 10: Take Screenshots for Documentation

- Capture the following screenshots for your lab record:
    - Google Keyword Planner main page
    - Input screen with entered keywords
    - Results page showing keyword suggestions
    - Filters applied (Location and Language)
    - Downloaded keyword list file preview

Step 11: Interpret and Use the Data

- Interpret the data to identify which keywords to use for:
    - Website homepage
    - Blog posts (e.g., "Benefits of laser treatment")
    - Meta descriptions and SEO
    - Paid ad campaigns on Google Ads

OUTPUT


Google Ads
Create your first campaign
Chat
Help
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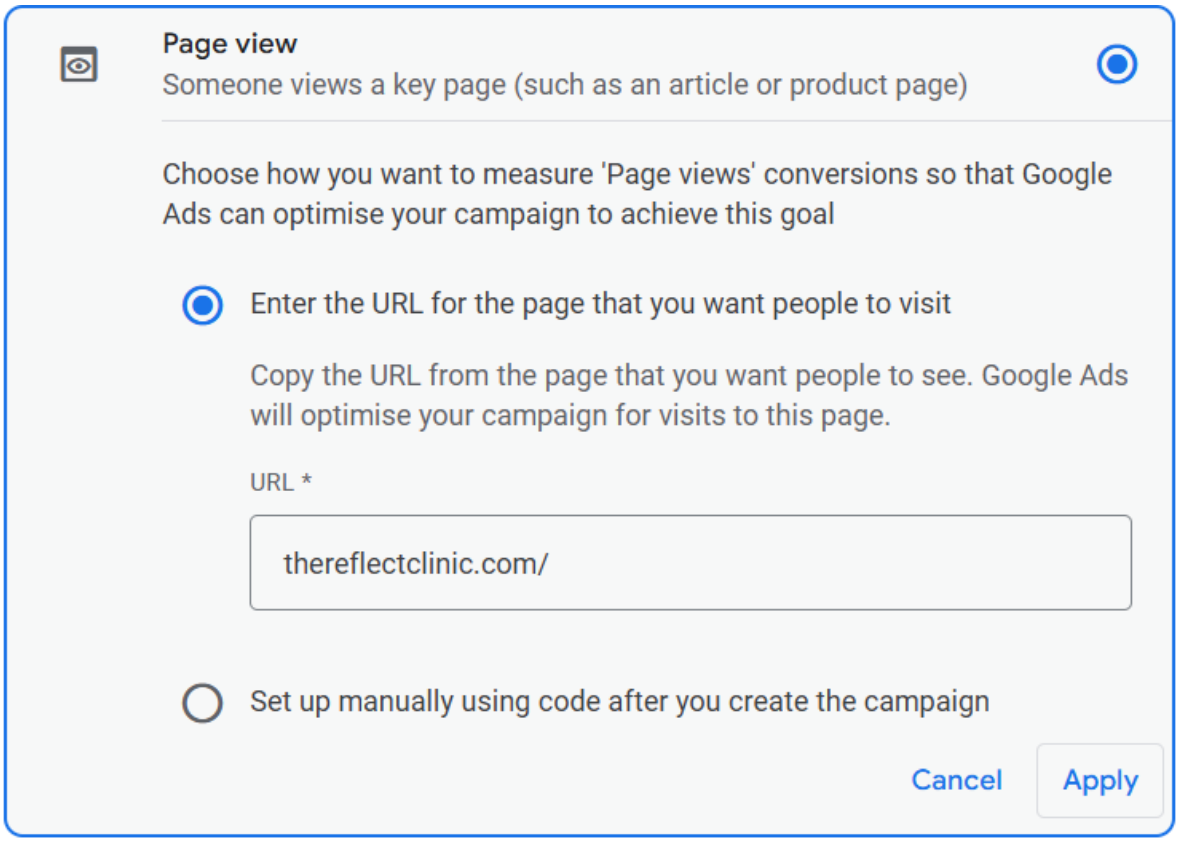
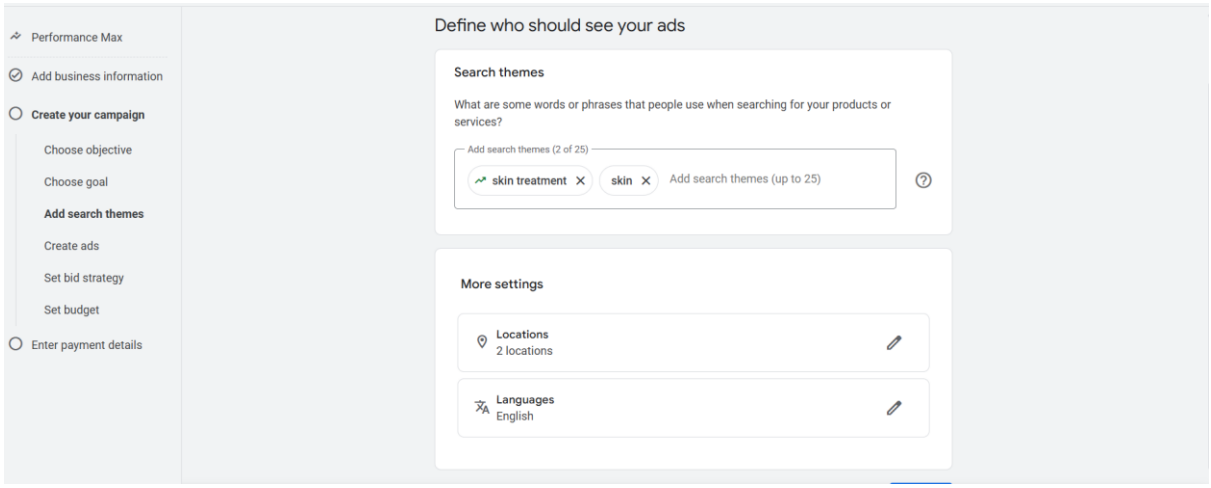
Add business information
Create your campaign
Choose objective
Choose goal
Add search themes
Create ads
Set bid strategy
Set budget
Enter payment details
To create an effective campaign, focus on the goal that's most valuable to your business. Learn more about conversion goals
Choose a goal
Required
Phone call leads
A potential customer calls your business
Page view
Someone views a key page (such as an article or product page)
Submit lead form
A potential customer fills out a form
Contacts
A customer makes contact by phone, text, email or chat
Outbound clicks
Someone clicks a link to a partner site
See more
Back
Next
Need help? Call for free ad setup help at 1800-419-3355, 9.00 am to 6.00 PM IST, Mon-Fri. Help articles


Page view
Someone views a key page (such as an article or product page)
Choose how you want to measure 'Page views' conversions so that Google Ads can optimise your campaign to achieve this goal
Enter the URL for the page that you want people to visit
Copy the URL from the page that you want people to see. Google Ads will optimise your campaign for visits to this page.
URL *
thereflectclinic.com/
Set up manually using code after you create the campaign
Cancel
Apply


Performance Max
Add business information
Create your campaign
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Choose goal
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Define who should see your ads
Search themes
What are some words or phrases that people use when searching for your products or services?
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More settings
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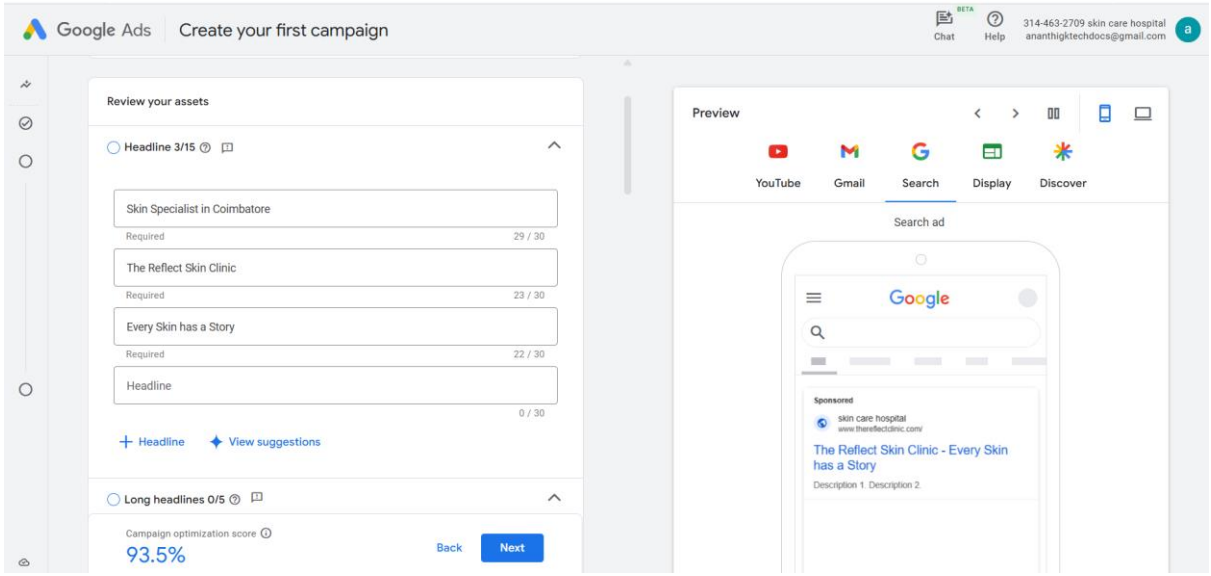
Languages
English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Campaign optimization score
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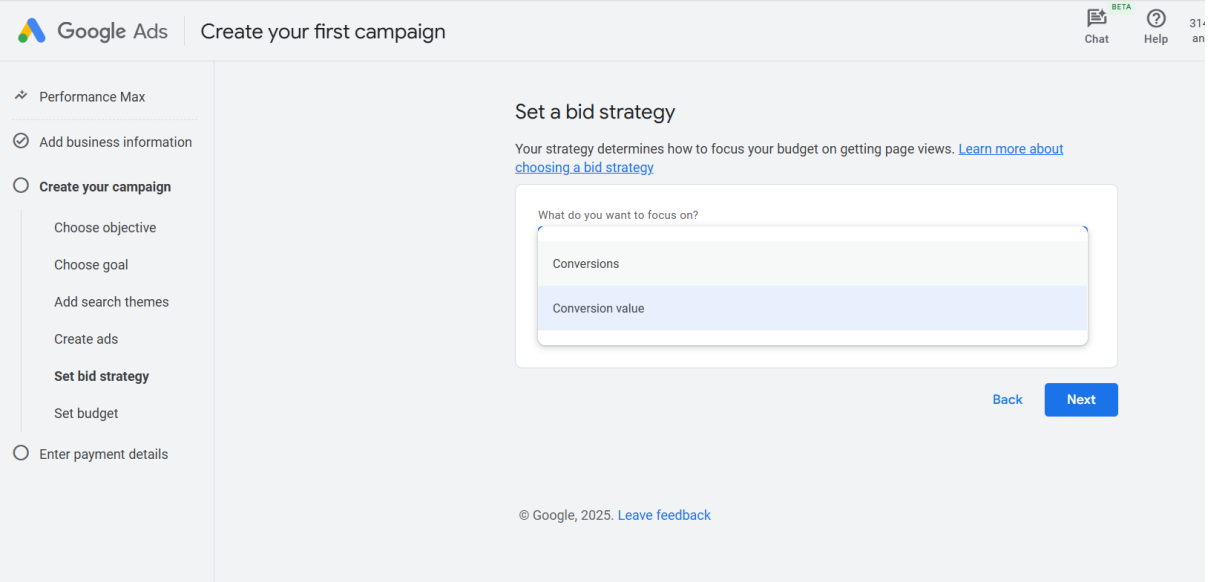


RESULT

Thus the experiment is done to identify high-traffic, low-competition keywords related to skincare hospital services using Google Keyword Planner and the analysis is done successfully.

Ex.No : 03	DEMONSTRATION OF THE GOOGLE WEBMASTERS INDEXING API
DATE :	

AIM

To demonstrate how to use the Google Indexing API to request indexing of a web page, allowing faster crawling and visibility in Google Search.

ALGORITHM

Step 1: Create a Google Cloud Project and enable the Indexing API.

Step 2: Generate service account credentials and assign permissions in Google Search Console.

Step 3: Use a script (Python) to send a POST request to the Indexing API with the URL to be updated.

Step 4: Parse and display the response from the API.

PROGRAM CODE/PROCEDURE

Step 1: Create and Configure a Google Cloud Project

1.1. Go to Google Cloud Console

- Visit: https://console.cloud.google.com/
- Sign in using your Google account.

1.2. Create a New Project

- Click the dropdown on the top-left next to "Google Cloud Platform".
- Click **"New Project"**.
- Give your project a name (e.g., *IndexingAPIProject*), and click **"Create"**.

1.3. Enable the Indexing API

- From the sidebar, go to **APIs & Services → Library**.
- Search for **"Indexing API"**.
- Click on it and then click **"Enable"**.

1.4. Create Service Account Credentials

- Go to **APIs & Services → Credentials**.
- Click **"Create Credentials" → "Service account"**.

- Name your service account (e.g., *indexing-bot*), click **"Create and Continue"**.
- For the role, choose **Basic > Owner** (or **Editor**).
- Continue and click **Done**.
- After creation, click on the service account → **"Keys" tab → Add Key → Create New Key → JSON**.
- A .json file will be downloaded. This file contains your credentials. Save it securely.

Step 2: Grant Search Console Access to the Service Account

2.1. Visit Google Search Console

- URL: https://search.google.com/search-console
- Make sure your domain (e.g., example.com) is added and **verified**.

2.2. Add Service Account to the Property

- Go to **Settings → Users and Permissions**.
- Click **"Add User"**.
- Paste the email address from the downloaded .json file. It looks like:

indexing-bot@your-project-id.iam.gserviceaccount.com

- Give **Full access**, and click **Add**.

Now Google recognizes that the service account has permission to index URLs under that verified domain.

Step 3: Write and Run Python Code to Send Indexing Request

Before running the script, make sure Python is installed and run:

pip install google-auth google-auth-oauthlib requests

Then create a file called indexing_api.py and paste the following code:

```
from google.oauth2 import service_account
from google.auth.transport.requests import AuthorizedSession
import json

# Replace with the path to your downloaded service account JSON key
```

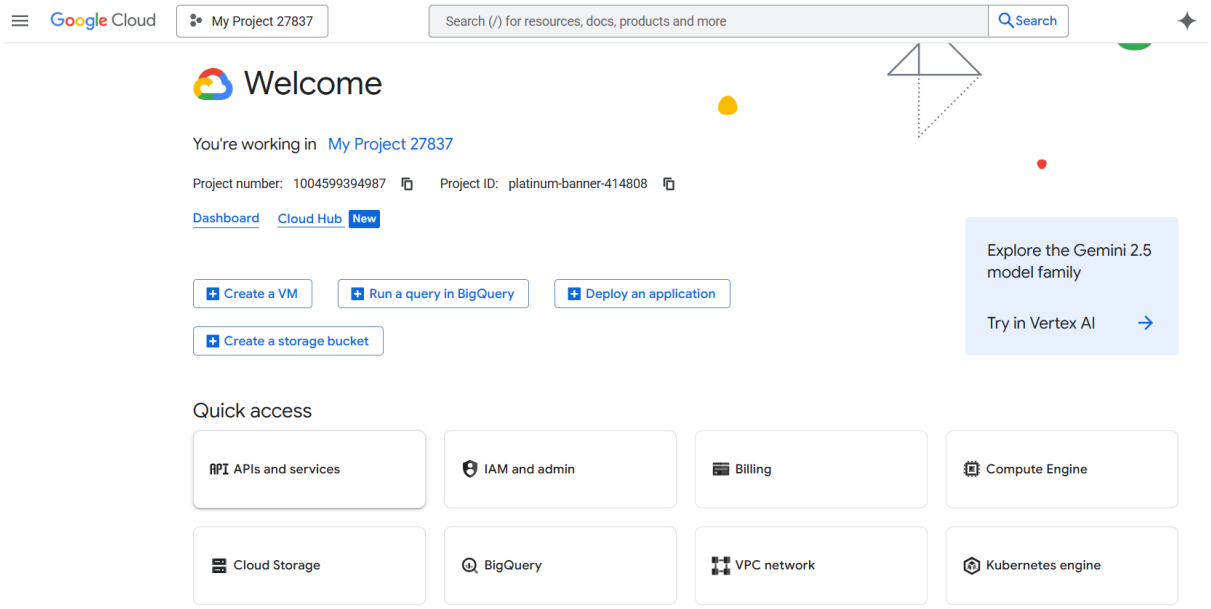
```
SERVICE_ACCOUNT_FILE = 'your-service-account.json'
SCOPES = ["https://www.googleapis.com/auth/indexing"]

# Replace with your actual URL
url = "https://example.com/new-article"

# Authenticate using the service account credentials
credentials = service_account.Credentials.from_service_account_file(
    SERVICE_ACCOUNT_FILE, scopes=SCOPES)

# Create an authorized session
authed_session = AuthorizedSession(credentials)

# Prepare the JSON body with URL and type
json_body = {
  "url": url,
  "type": "URL_UPDATED"  # Use "URL_DELETED" if you want to remove from index
}

# Send POST request to Indexing API
response = authed_session.post(
    "https://indexing.googleapis.com/v3/urlNotifications:publish",
    json=json_body)

# Display the response from the API
print("Response Status Code:", response.status_code)
print("Response Body:", response.text)
```

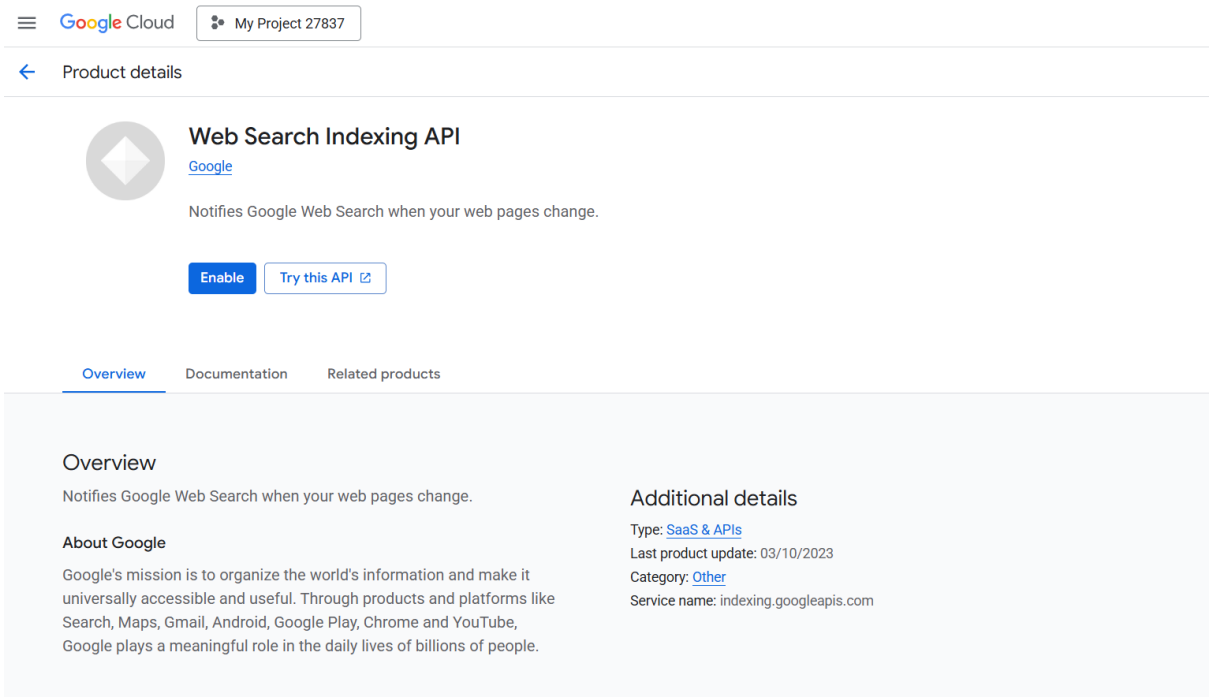
Step 4: Interpret the Output

Run the script in the terminal:

python indexing_api.py

OUTPUT





Response Status Code: 200

Response Body:


```
{
  "urlNotificationMetadata": {
    "url": "https://example.com/new-article",
    "latestUpdate": {
      "type": "URL_UPDATED",
      "notifyTime": "2025-07-22T10:45:00Z"
    }
  }
}
```


RESULT

Thus the given script successfully submitted the specified URL to the Google Indexing API. A 200 OK response confirms that Google received the request and will consider the page for reindexing.

Ex.No : 04	CASE STUDY: MANAGEMENT OF LEADS IN AN INSURANCE COMPANY
DATE :	

AIM

To study how an insurance company effectively uses CRM and digital tools to generate, manage, and convert leads into customers.

ALGORITHM

Step 1: Lead Capture: Collect leads via social media ads, landing pages, referrals.

Step 2: Lead Scoring: Assign scores based on behavior (clicked ad, requested quote, visited pricing).

Step 3: CRM Integration: Feed data into CRM like Salesforce or Zoho.

Step 4: Automated Response: Trigger SMS/email based on lead stage.

Step 5: Follow-up Scheduling: Allocate leads to agents via automation.

Sttep 6: Conversion Monitoring: Track if the lead buys a policy.

Step 7: Retention Strategy: Use engagement tools for upselling and renewals.

PROGRAM CODE/PROCEDURE

◈ Step 1: Lead Generation

- The company uses digital channels such as:
    - Google Ads and Facebook Ads (Pay-Per-Click campaigns).
    - Organic SEO (Search Engine Optimization) to bring traffic.
    - Landing pages with quote request forms.
- Leads come in when users fill forms or click "Get a Quote".

◈ Step 2: Lead Capture

- Once a user submits a form, the data is captured in real-time using:
    - A CRM system like **Salesforce**, **Zoho CRM**, or **Freshsales**.
    - Leads are tagged with source (e.g., Facebook ad, Website form).

◈ Step 3: Lead Scoring

- Each lead is given a **score** based on:

  - Time spent on site.
  - Which pages were visited (policy info, pricing).
  - If the user has been previously contacted.
- Higher scores are prioritized for follow-up.

🔹 Step 4: Automated Follow-Up

- An automated SMS/email is sent immediately:
  - "Thanks for contacting us! Our agent will call you shortly."
  - Sent using marketing automation tools like **Mailchimp**, **HubSpot**, or **MoEngage**.

🔹 Step 5: Assign to Sales Agents

- Leads are automatically assigned to agents based on:
  - Region (North, South India).
  - Product (car insurance, health insurance).
  - Agent availability.

🔹 Step 6: Follow-Up & Conversion

- Sales team follows up via phone or email.
- Notes are updated in CRM on customer preferences.
- Once the lead buys a policy, it's marked as **converted**.

🔹 Step 7: Post-Sale Engagement

- Monthly newsletters or policy reminders are sent.
- Analytics track renewal likelihood or upsell opportunities.

RESULT

Thus the study is done on how an insurance company effectively uses CRM and digital tools to generate, manage, and convert leads into customers.

Ex.No : 05	DISCUSSION OF NEGATIVE AND POSITIVE IMPACTS AND ETHICAL IMPLICATIONS OF SOCIAL MEDIA FOR POLITICAL ADVERTISING
DATE :	

AIM

To evaluate the positive and negative effects and ethical concerns of using social media platforms (like Facebook and X/Twitter) for political advertising.

ALGORITHM

Step 1: Data Collection: Use user data (likes, interests, location).

Step 2: Audience Segmentation: Divide population into target voter groups.

Step 3: Content Personalization: Create message variations based on interest.

Step 4: Ad Distribution: Use Facebook Ads Manager or Twitter Ads to deliver.

Step 5: Performance Tracking: Monitor engagement (likes, shares, conversions).

PROGRAM CODE/PROCEDURE

◈ Step 1: Data Collection

- Political campaign teams collect user data from:
  - Social media behavior (likes, follows, shares).
  - Third-party data brokers.
  - Public profiles or surveys.

◈ Step 2: Audience Segmentation

- Using tools like **Facebook Audience Manager**, voters are grouped by:
  - Age, location, education, political leaning.
  - Interests (e.g., nationalism, environment, jobs).
- Custom messages are created for each segment.

◈ Step 3: Message Creation and Testing

- Multiple versions of ads are created.
  - Ad 1: “We’ll create 10 million jobs.”
  - Ad 2: “Our opponent failed to create jobs.”
- A/B testing is done to check which performs better.

◈ Step 4: Advertisement Delivery

- Ads are posted using:
    - Facebook/Meta Ad Manager
    - Google Ads
    - YouTube political video ads
- Budget and schedule are set to show ads at strategic times.

◈ Step 5: Campaign Monitoring

- Campaign managers track:
    - Reach (number of views).
    - Click-through rate (CTR).
    - Conversion (signup, voting pledge).
- Adjust campaign in real-time if performance drops.

◈ Step 6: Ethical Review (if any)

- Some platforms like Twitter restrict political ads.
- Facebook requires "Paid for by" transparency labels.
- But enforcement is often weak, and fake news can slip through.

RESULT

Thus the evaluation is performed on the positive and negative effects and ethical concerns of using social media platforms (like Facebook and X/Twitter) for political advertising.

Ex.No : 06	DISCUSSION OF PREDICTIVE ANALYTICS AND ITS IMPACTS IN MARKETING AUTOMATION
DATE :	

AIM

To study how predictive analytics is transforming marketing automation by enabling brands to make data-driven decisions and personalize customer journeys.

ALGORITHM

Step 1: Data Collection: Customer history, website behavior, purchase data.

Step 2: Data Cleaning and Modeling: Use ML models like logistic regression or XGBoost.

Step 3: Prediction: Estimate likelihood of purchase, churn, or response.

Step 4: Automation Rules: Feed insights into marketing automation tools.

Step 5: Action Execution: Deliver targeted messages via email, SMS, ads.

PROGRAM CODE/PROCEDURE

◈ Step 1: Collect Customer Data

- Gather data from sources like:
    - Website visits and browsing behavior.
    - Purchase history (products, price).
    - Email opens, click behavior.
    - Social media interactions.

◈ Step 2: Data Cleaning and Preparation

- Use tools like **Python (pandas)** or **Excel** to:
    - Remove missing values or duplicates.
    - Convert categorical data to numeric.
    - Normalize features for better accuracy.

◈ Step 3: Build Predictive Model

- Choose a machine learning algorithm:
    - Logistic Regression (for binary events like buy/don't buy).
    - Decision Trees or XGBoost (for classification).

- Use tools like **Scikit-learn**, **RapidMiner**, or **AutoML**.
- Train the model with 80% of the dataset, test with 20%.

🔷 Step 4: Analyze Predictions

- For each customer, predict:
  - Probability of purchase.
  - Likelihood to unsubscribe.
  - Best time to email or call.

🔷 Step 5: Integrate with Automation Platform

- Feed model output into a tool like:
  - **HubSpot**, **Salesforce Pardot**, or **ActiveCampaign**.
- Create automation rules:
  - "If churn risk > 80%, send retention email."
  - "If click probability > 60%, show dynamic ad on Facebook."

🔷 Step 6: Execute and Monitor Campaign

- Let the platform send messages automatically.
- Measure KPIs: open rates, sales, retention rate.
- Continuously re-train model with new data.

RESULT

Thus the study is performed on how predictive analytics is transforming marketing automation by enabling brands to make data-driven decisions and personalize customer journeys.