A MAJOR PROJECT REPORT

ON

SOCIAL MEDIA POST & CAPTION GENERATOR

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Overview :

This project is aimed at creating a tool that generates catchy captions, relevant hashtags, and emojis for social media posts based on user-provided keywords or themes. The main objective is to simplify content creation for platforms such as Instagram, LinkedIn, and Twitter.

Project Details :

- **Title**: Social Media Post & Caption Generator
- **Technology**: Generative AI
- **Difficulty Level**: Beginner

Project Description :

The application allows users to input keywords or themes for their desired social media post. It then utilizes a generative AI model to create engaging captions along with pertinent hashtags and emojis. This is particularly useful for marketers, content creators, and businesses looking to enhance their social media presence.

Source Code :

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1" />
  <title>Social Media Post & Caption Generator</title>
  <script src="https://cdn.tailwindcss.com"></script>
  <style>
    /* Custom scrollbar for #results */
    #results::-webkit-scrollbar {
      width: 8px;
    }

    #results::-webkit-scrollbar-thumb {
      background-color: #4ade80; /* green-400 */
      border-radius: 4px;
    }

    /* Animate pulse-green */
    @keyframes pulse-green {
      0%, 100% {
        background-color: #a7f3d0;
      }
      50% {
        background-color: #34d399;
      }
    }

    .pulse-green {
      animation: pulse-green 2s infinite;
    }
  </style>
</head>

<body class="bg-gray-50 min-h-screen flex flex-col">

  <header class="bg-white shadow-md">
    <div class="max-w-7xl mx-auto px-4 py-5 flex items-center gap-4">
      <div class="text-blue-800 font-extrabold text-xl select-none flex items-
center gap-2">
        <svg class="w-10 h-10" fill="none" stroke="currentColor" stroke-width="2"
stroke-linecap="round"
          stroke-linejoin="round" viewBox="0 0 24 24" aria-hidden="true"
focusable="false" aria-label="IBM Logo">
          <path d="M3 7h18M3 12h18M3 17h18"></path>
        </svg>
        IBM
      </div>
      <h1 class="text-2xl font-semibold text-gray-900">Social Media Post &
Caption Generator</h1>
```

```
    </div>
  </header>

  <main class="flex-grow max-w-6xl mx-auto px-4 py-8 grid grid-cols-1 md:grid-cols-3 gap-8">
    <!-- Left Section: Form and inputs -->
    <section class="md:col-span-2 bg-white rounded-xl shadow-md p-6 flex flex-col">
      <div class="mb-6">
        <img class="w-full rounded-lg shadow-lg object-cover h-56 md:h-72"

src="https://placehold.co/640x360/png?text=AI+Social+Media+Post+Generator+Colorful+Artistic+Collage"
          alt="Colorful artistic digital illustration featuring AI technology, women holding infants, agriculture icons, and vibrant Indian motifs symbolizing technology and nourishment" loading="lazy" />
      </div>

      <form id="postForm" class="flex flex-col gap-5" novalidate>
        <label for="keywords" class="font-semibold text-gray-800">Enter Keywords or Themes</label>
        <input type="text" id="keywords" name="keywords" placeholder="E.g., summer, fitness, motivation"
          class="border border-gray-300 rounded-md px-4 py-2 focus:outline-none focus:ring-2 focus:ring-green-400"
          required autocomplete="off" />

        <label for="platform" class="font-semibold text-gray-800">Select Social Media Platform</label>
        <select id="platform" name="platform" class="border border-gray-300 rounded-md px-4 py-2 cursor-pointer focus:outline-none focus:ring-2 focus:ring-green-400"
          required>
          <option value="" disabled selected>Choose a platform</option>
          <option value="Instagram">Instagram</option>
          <option value="LinkedIn">LinkedIn</option>
          <option value="Twitter">Twitter</option>
          <option value="Facebook">Facebook</option>
          <option value="TikTok">TikTok</option>
          <option value="Pinterest">Pinterest</option>
        </select>

        <button type="submit"
          class="self-start bg-green-600 hover:bg-green-700 text-white font-semibold py-2 px-6 rounded-md transition focus:ring-4 focus:ring-green-300 focus:outline-none">
          Generate Post & Captions
        </button>
      </form>

      <div id="results" class="mt-6 bg-green-50 rounded-md p-4 max-h-[350px] overflow-y-auto shadow-inner hidden"
        aria-live="polite">
        <!-- Results will appear here -->
      </div>
    </section>
    <!-- Right Section: Project Details -->
    <aside
      class="bg-white rounded-xl shadow-md p-6 flex flex-col gap-6 sticky top-8 h-fit min-w-[250px] border border-gray-200">
      <h2 class="text-lg font-bold border-b border-green-400 pb-1 flex items-center gap-2"><svg class="w-6 h-6 stroke-green-600"
          fill="none" stroke-width="2" stroke-linecap="round" stroke-linejoin="round" viewBox="0 0 24 24"
          aria-hidden="true">
          <path d="M9 12h6M9 16h6M9 8h6M5 21h14a2 2 0 002-2V7a2 2 0 00-2-2h-4"></path>
        </svg> Project Details</h2>

      <dl>
        <dt class="font-semibold text-green-600">Technology</dt>
        <dd class="mb-4"><span
            class="inline-block bg-blue-100 text-blue-800 text-xs px-2 py-1 rounded-md font-medium cursor-default select-none">Generative AI</span>
        </dd>

        <dt class="font-semibold text-green-600">Difficulty Level</dt>
        <dd>
          <span
            class="inline-block bg-green-100 text-green-800 text-xs px-2 py-1 rounded-md font-medium cursor-default select-none">Beginner</span>
        </dd>
      </dl>
      <div class="mt-6 flex flex-col gap-3">
        <button
          class="bg-green-600 hover:bg-green-700 text-white font-semibold py-2 px-4 rounded-md transition focus:ring-4 focus:ring-green-300 focus:outline-none flex justify-center items-center gap-2"
          id="submitAssignmentBtn">
          <svg class="w-5 h-5" fill="none" stroke="currentColor" stroke-width="2" stroke-linecap="round"
            stroke-linejoin="round" viewBox="0 0 24 24" aria-hidden="true">
            <path d="M14 2H6a2 2 0 00-2 2v16a2 2 0 002 2h12a2 2 0 002-2V8z"></path>
            <path d="M14 2v6h6"></path>
          </svg>
          Submit Assignment
        </button>
        <button
          class="bg-green-600 hover:bg-green-700 text-white font-semibold py-2 px-4 rounded-md transition focus:ring-4 focus:ring-green-300 focus:outline-none flex justify-center items-center gap-2"
          id="submitProjectBtn">
          <svg class="w-5 h-5" fill="none" stroke="currentColor" stroke-width="2" stroke-linecap="round"
            stroke-linejoin="round" viewBox="0 0 24 24" aria-hidden="true">
            <path d="M9 17v-6h13v6a2 2 0 01-2 2H9z"></path>
            <path d="M13 9V3H6a2 2 0 00-2 2v12a2 2 0 002 2h7v-8z"></path>
          </svg>
          Submit Project
        </button>
```

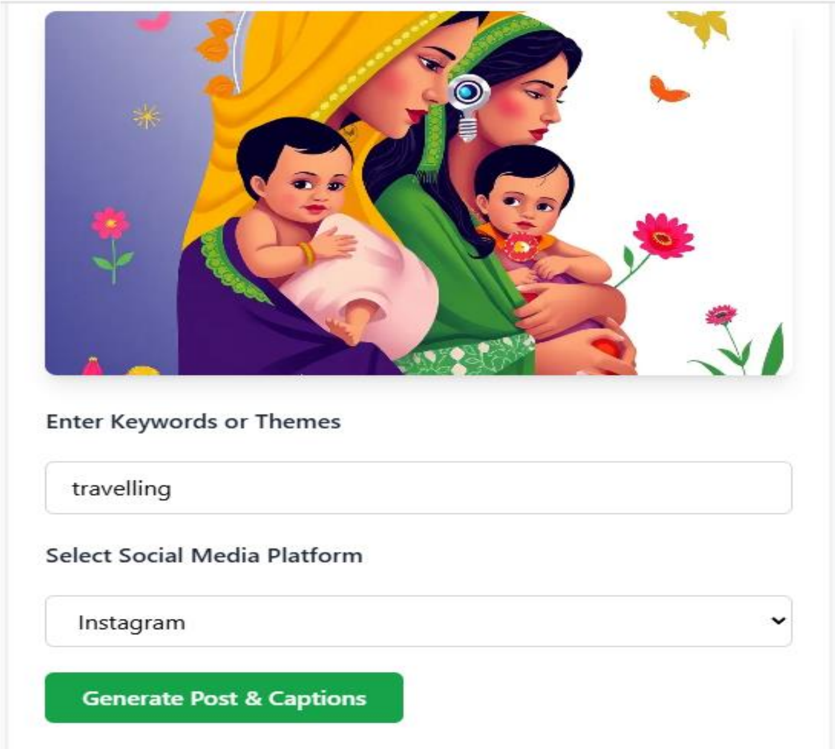
```
    </div>
   </aside>
  </main>

  <footer class="bg-white border-t border-gray-200 text-center text-gray-600 text-sm py-2 select-none">
   © 2025 IBM Training & Project Portal
  </footer>

  <script>
   // This script generates social media captions, hashtags, and emojis based on user input keywords & platform

   // Mapping for platform-specific tone or style (basic examples)
   const platformToneMap = {
    Instagram: {
     intro: "✨ Check this out! ✨ ",
     hashtags: ["#instagood", "#photooftheday", "#instadaily", "#love", "#followme"],
     emojiPool: ["📸", "✨", "❤", "🔥", "💥"],
    },
    LinkedIn: {
     intro: "Professional insights: ",
     hashtags: ["#LinkedIn", "#Career", "#Business", "#Networking", "#Leadership"],
     emojiPool: ["💼", "📈", "🤝", "□", "🌐"],
    },
    Twitter: {
     intro: "News & updates: ",
     hashtags: ["#Breaking", "#Trending", "#News", "#Tweet", "#Social"],
     emojiPool: ["🐦", "⚡", "🔥", "🗞️", "💬"],
    },
    Facebook: {
     intro: "Sharing some moments: ",
     hashtags: ["#Family", "#Friends", "#GoodTimes", "#Life", "#Memories"],
     emojiPool: ["👨‍👩‍👧‍👦", "❤️", "😊", "🎉", "🏡"],
    },
    TikTok: {
     intro: "Let's get viral! ",
     hashtags: ["#fyp", "#ForYou", "#TikTokTrend", "#Viral", "#Dance"],
     emojiPool: ["🎶", "💃", "🎬", "🔥", "📱"],
    },
    Pinterest: {
     intro: "Inspirations & ideas: ",
     hashtags: ["#Design", "#DIY", "#Inspiration", "#Craft", "#Pinterest"],
     emojiPool: ["🎨", "✂️", "💡", "🌸", "📌"],
    }
   };

   // Utility function to generate relevant hashtags from keywords
   function generateHashtags(keywords) {
    // Clean keywords, split by comma or space
    let words = keywords.toLowerCase()
```

```
      .split(/[\s,]+/)
      .filter(w => w.length > 2 && !["the", "and", "for", "with", "you"].includes(w));

    // Avoid duplicates and sort
    const uniqueWords = [...new Set(words)];

    // Convert words to hashtags, removing non-alphanumeric
    return uniqueWords.map(word => '#' + word.replace(/[^a-z0-9]/gi, ''));
  }

  // Utility function to pick emojis related to keywords (simple keyword mapping)
  function selectEmojis(keywords) {
    // Basic example: mapping small keyword buckets to emojis
    const emojiMap = {
      love: "❤️",
      happy: "😊",
      fitness: "🏋️‍♂️",
      summer: "☀️",
      food: "🍕",
      travel: "✈️",
      nature: "🌿",
      work: "💼",
      music: "🎵",
      art: "🎨",
    tech: "💻",
    baby: "👶",
    motivation: "💪",
    party: "🎉",
  };

  let words = keywords.toLowerCase().split(/[\s,]+/);
  let foundEmojis = [];
  words.forEach(w => {
    if (emojiMap[w] && !foundEmojis.includes(emojiMap[w])) {
      foundEmojis.push(emojiMap[w]);
    }
  });

  // If none found, return some generic smiley
  if (foundEmojis.length === 0) {
    foundEmojis = ["✨", "🌟", "🔥"];
  }
  return foundEmojis.slice(0, 3);
}

// Compose a caption combining basic intro, emojis and hashtags
function createCaption(keywords, platform) {
  const tone = platformToneMap[platform] || {
    intro: "",
    hashtags: [],
    emojiPool: ["✨", "😊", "🔥"],
  };

  // Generate hashtags from keywords
  const baseHashtags = generateHashtags(keywords);

  // Select emojis from keywords and platform emoji pool
  const keywordEmojis = selectEmojis(keywords);
  const emojis = [...new Set([...keywordEmojis, ...tone.emojiPool])].slice(0, 5).join(' ');

  // Compose caption text
  const captionIntro = tone.intro ? tone.intro : "";
  const bodyText = `Discover more about ${keywords.trim()}. ${emojis}`;

  // Shuffle and combine unique hashtags capped at 7 including platform hashtags
  const combinedHashtags = [...new Set([...baseHashtags, ...tone.hashtags])].slice(0, 7);

  return `${captionIntro}${bodyText}\n\n${combinedHashtags.join(' ')}`;
}

// Handles form submission and display result
document.getElementById('postForm').addEventListener('submit', function (e) {
  e.preventDefault();
```

```
      const keywordsInput = document.getElementById('keywords');
      const platformInput = document.getElementById('platform');
      const resultsDiv = document.getElementById('results');

      const keywords = keywordsInput.value.trim();
      const platform = platformInput.value;

      // Simple form validation
      if (!keywords) {
        alert("Please enter keywords or themes.");
        keywordsInput.focus();
        return;
      }

      if (!platform) {
        alert("Please select a social media platform.");
        platformInput.focus();
        return;
      }

      // Show loading pulse effect while "generating"
      resultsDiv.classList.remove('hidden');
      resultsDiv.innerHTML = '<p class="text-green-700 font-semibold pulse-green p-3 rounded-md">Generating your post, please wait...</p>';

      setTimeout(() => {
```

```
      // Generate caption
      const caption = createCaption(keywords, platform);

      // Clear and show result nicely formatted
      resultsDiv.innerHTML = `
        <h3 class="font-bold text-green-800 text-lg mb-3">Generated Caption for <span class="capitalize">${platform}</span>:</h3>
        <textarea readonly rows="7" class="w-full border border-green-300 rounded-md p-3 font-mono text-sm resize-none">${caption}</textarea>
        <button id="copyBtn" aria-label="Copy caption to clipboard"
        class="mt-3 bg-green-600 hover:bg-green-700 text-white font-semibold py-2 px-4 rounded-md transition focus:ring-4 focus:ring-green-300 focus:outline-none">
          Copy Caption
        </button>
      `;

      // Copy to clipboard functionality
      const copyBtn = document.getElementById('copyBtn');
      copyBtn.addEventListener('click', () => {
        navigator.clipboard.writeText(caption).then(() => {
          copyBtn.textContent = "Copied!";
          setTimeout(() => copyBtn.textContent = "Copy Caption", 2000);
        }).catch(() => {
          alert("Failed to copy. Please copy manually.");
        });
      });
      }, 1200);
    });

    // Submit Assignment & Project buttons behaviors
    document.getElementById('submitAssignmentBtn').addEventListener('click', () => {
      alert("Assignment submission is currently not implemented in this demo.\nPlease implement backend integration.");
    });

    document.getElementById('submitProjectBtn').addEventListener('click', () => {
      alert("Project submission is currently not implemented in this demo.\nPlease implement backend integration.");
    });
  </script>

</body>

</html>
```

Output :

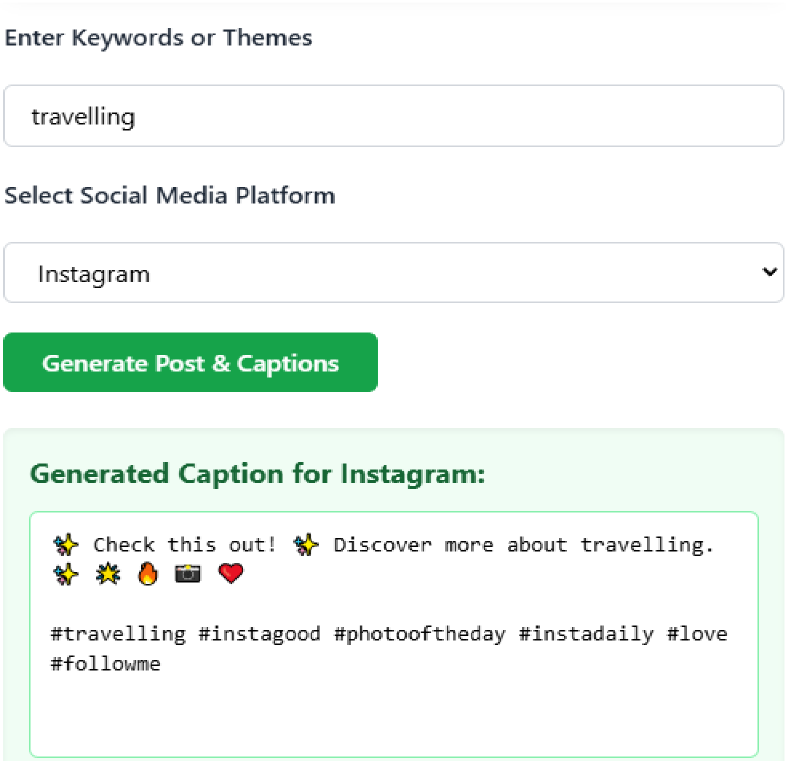


Enter Keywords or Themes

travelling

Select Social Media Platform

Instagram



Enter Keywords or Themes

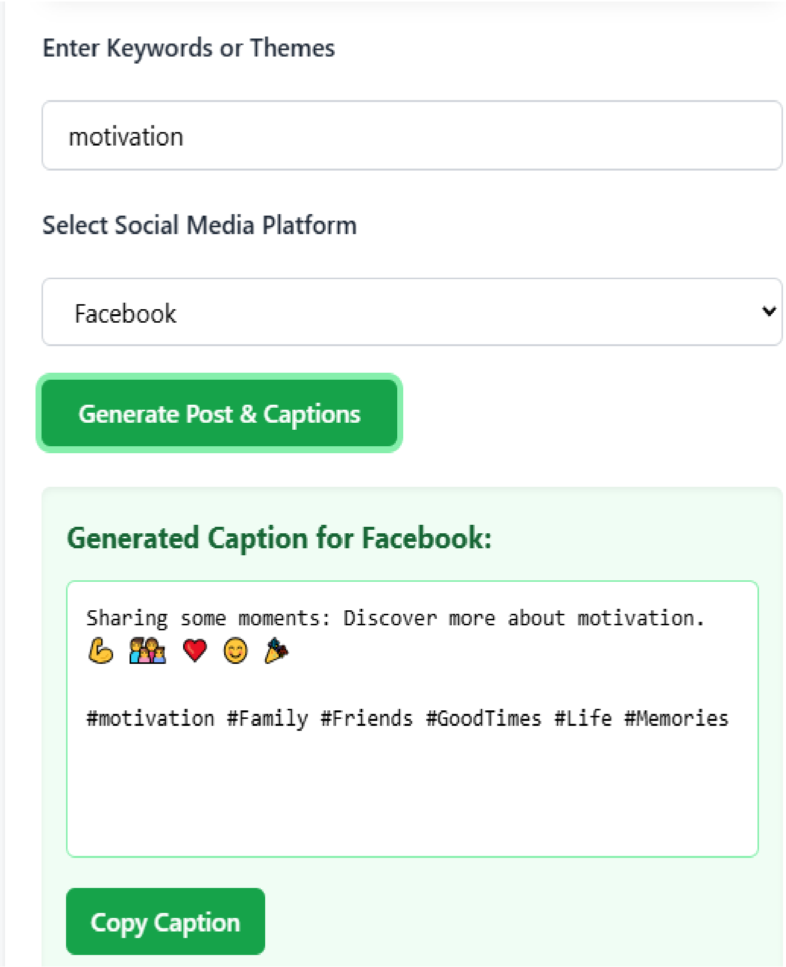
travelling

Select Social Media Platform

Instagram

Generated Caption for Instagram:

```
✨ Check this out! ✨ Discover more about travelling.
✨ 🌟 🔥 📷 ❤️

#travelling #instagood #photooftheday #instadaily #love
#followme
```



Enter Keywords or Themes

motivation

Select Social Media Platform

Facebook

Generated Caption for Facebook:

```
Sharing some moments: Discover more about motivation.
💪 👨‍👩‍👧 ❤️ 😊 🎉

#motivation #Family #Friends #GoodTimes #Life #Memories
```

Conclusion :

This project brings together concepts of generative AI and user interaction to create an effective tool for social media content generation. It allows beginners to understand and apply AI technology in a practical scenario.