Real-Time Automated Review Rating System– Frontend

Overview

This page allows users to submit a review (text input). When submitted, the app calls an API that predicts the star rating for the review. The predicted rating is displayed with the review. A list of recent reviews with their predicted star ratings is also shown.

Tech Stack

- **Framework**: React (TypeScript recommended for type safety)
- **Styling**: Tailwind CSS
- **API Calls**: Axios
- **State Management**: React Hooks (useState, useEffect) with custom hooks for API integration

Features

✓ User can enter a review in a form.

✓ On submit, review is sent to the backend.

✓ Backend responds with a predicted star rating (1–5).

✓ Review and rating are displayed instantly on the UI.

✓ Recent Reviews are shown in reverse order (latest first).

✓ Review Found with individual rating counts, total review and average rating.

UI Flow

1. **Review Input Section**
    - Textarea for writing a review.
    - "Submit" button.

2. **Review Display Section**
    - Show predicted star rating (⭐) alongside user review.
    - Keep the newest review at the top.
3. **Recent Reviews Section**
    - Display a list of previous reviews + their predicted star ratings.
4. **Recent Count**
    - Review Found with individual rating counts, total review and average rating.

Project Structure

```
src/
 ├── pages/
 |    ├── AddReview.tsx
 |    ├── Home.tsx
 |    ├── RecentReview.tsx
 |    ├── ReviewList.tsx
 |    └── index.ts
 |
 ├── routes/
 |    └── index.ts
 |
 ├── server/
 |    └── api.ts
 |
 ├── features/
 |    ├── addReview/
```

```
|   |   ├── components/
|   |   |   └── AddReviewPage.tsx
|   |   ├── hooks/
|   |   |   └── useAddReview.tsx
|   |   └── index.ts
|   |
|   ├── home/
|   |   ├── components/
|   |   |   └── HomePage.tsx
|   |   ├── hooks/
|   |   └── index.ts
|   |
|   ├── recentReview/
|   |   ├── components/
|   |   |   └── RecentReviewPage.tsx
|   |   ├── hooks/
|   |   |   └── useRecentReview.tsx
|   |   └── index.ts
|   |
|   ├── reviewListPage/
|   |   ├── components/
|   |   |   ├── ReviewListPage.tsx
|   |   |   ├── AllReviewList.tsx
|   |   |   ├── ReviewSection.tsx
|   |   |   └── Pagination.tsx
|   |   ├── hooks/
```

```
|   |       ├── useAllReviews.tsx
|   |       └── useReviewCount.tsx
|   |   └── index.ts
|
└── .env
```

Components & Hooks

1. HomePage.tsx

```
const HomePage = () => {
  return (
    <div className="max-w-[1600px] mx-auto p-6 text-justify space-y-6">
      <section>
        <h2 className="text-2xl font-bold mb-2">
          Automated Review Rating System for Food Products
        </h2>
        <p>
          An intelligent system that analyzes customer reviews and predicts star ratings (1–5) using
          a Transformer-based BERT model for food products.
        </p>
      </section>
      <section>
        <h2 className="text-xl font-semibold mb-2">Dataset Overview</h2>
        <p>Dataset size: 1.6 lakh rows</p>
        <ul className="list-disc pl-6">
          <li>1 <span className="text-green-600">★</span>: 29,893</li>
          <li>2 <span className="text-green-600">★</span>: 16,234</li>
          <li>3 <span className="text-green-600">★</span>: 24,260</li>
          <li>4 <span className="text-green-600">★</span>: 42,517</li>
          <li>5 <span className="text-green-600">★</span>: 50,000</li>
```

```
      </ul>
  <p>No. of Products: 40,704</p>
    </section>
    <section>
      <h2 className="text-xl font-semibold mb-2">Sample Reviews</h2>
      <div className="space-y-2">
        <p><strong>Review:</strong> Worst cookies, absolutely disgusting taste <br />
<strong>Output:</strong> 1</p>
        <p><strong>Review:</strong> Overpaid for this cereal box <br /> <strong>Output:</strong>
2</p>
        <p><strong>Review:</strong> Energy drink tasted okay <br /> <strong>Output:</strong> 3</p>
        <p><strong>Review:</strong> Imaginative sauce, uplifted my meal <br />
<strong>Output:</strong> 4</p>
        <p><strong>Review:</strong> Superb chocolate, heavenly and addictive <br />
<strong>Output:</strong> 5</p>
      </div>
    </section>
  </div>
  );
};
export default HomePage;
```

2.AddReviewPage.tsx

```
 import useAddReview from "../hooks/useAddReview"
const AddReviewPage = () => {
   const { handleSubmit, inputData, setInputData, loading } = useAddReview()
   return (
      <div className="max-w-[1600px] mx-auto p-4">
         <div className=" my-4">
            <h2 className="text-xl font-semibold mb-4">Add Your Review</h2>
            <textarea
```

```
            value={inputData || ""}
            onChange={(e) => setInputData(e.target.value)}
            maxLength={400}
            placeholder="Enter Review..."
            className="border p-4 text-lg w-full h-32 rounded-lg border-gray-300 focus:outline-none
resize-none"
          />
          <button
            disabled={loading || !inputData}
            onClick={handleSubmit}
            className="my-2 bg-blue-600 px-4 py-2 rounded-lg text-white font-semibold">
            {loading ? "Submitting..." : "Submit"}
          </button>
        </div
      </div>
  )}
export default AddReviewPage
```

3.useAddReview.tsx

```
import { useState } from "react"
import swal from 'sweetalert'
import api from "../../../server/api"

const useAddReview = () => {
  const [inputData, setInputData] = useState<string>("")
  const [loading, setloading] = useState(false)
  const handleSubmit = async () => {
    if (!inputData || inputData.trim() === "") {
      swal("Please Enter a Value")
      return
    }
```

```
        setloading(true)
        try {
            await api.post(`/reviews/create/`, { review_text: inputData })
            swal("Review Added Successfully")
            setInputData("")
        } catch (error: any) {
            swal(error.respone?.data?.message || "Failed Add Review")
        } finally {
            setloading(false)
        }
    }
    return { handleSubmit, inputData, setInputData, loading }
}
export default useAddReview
```

4.RecentReviewPage.tsx

```
import { CgChevronRight } from "react-icons/cg"
import { FaStar } from "react-icons/fa"
import { Link } from "react-router"
import useRecentReview from "../hooks/useRecentReview"
import useReviewCount from "../../reviewListPage/hooks/useReviewCount"
import ReviewSection from "../../reviewListPage/components/ReviewSection"

const RecentReviewPage = () => {
    const { isLoading, fetchData } = useRecentReview()
    const { fetchReviewCount } = useReviewCount()
    return (
        <>
            {
                isLoading ? (
```

```
            <div className="flex justify-center items-center my-10">
              <div className="w-8 h-8 border-4 border-gray-300 border-t-blue-500 rounded-full animate-spin"></div>
            </div>
          ) : (
            <div className="max-w-[1600px] mx-auto my-6 p-4">
              <div className="flex gap-4 items-center justify-between">
                <p className="text-3xl font-semibold drop-shadow-md ">Ratings & Reviews</p>
                <div className="bg-green-600 text-white flex items-center gap-1 w-16 rounded-2xl justify-center">
                  <span className="font-bold text-xl">{fetchReviewCount?.average_rating}</span>
                  <FaStar />
                </div>
                <p className="text-gray-500 mr-auto font-semibold textxl">{fetchReviewCount?.total_reviews} ratings</p>
                <Link to={'/add-review'} className="text-white text-lg font-semibold bg-blue-600 rounded-sm px-4 py-2">Rate Product</Link>
              </div>
              <ReviewSection/>
              <div className="my-4 space-y-4">
                {
                  (fetchData?.length == 0 && !isLoading) ? (
                    <p className="text-center text-lg my-10 font-semibold">No Recent Reviews</p>
                  ) : (
                    <>
                      {fetchData?.map((item: any) => (
                        <div key={item.id} className="border-b-3 border-gray-100 p-4  ">
                          <div className="bg-green-600  text-white flex items-center gap-1 w-12 rounded-2xl justify-center">
                            <span className="font-bold text-lg">{item?.predicted_rating ||"0"}</span>
                            <FaStar />
                          </div>
```

```
                                <p className="mt-3 text-xl">{item?.review_text}</p>
                                <p className="my-2 font-semibold text-gray-
400">{item?.created_at}</p>
                            </div>
                        ))}
                        <Link to={'/review-list'} className="font-bold text-blue-600 flex items-
center">
                            All {fetchReviewCount?.total_reviews} reviews
                            <CgChevronRight className="size-5" />
                        </Link>
                            </>
                        )
                    </div>
                </div>
            )
        }
    </>
  )
}

export default RecentReviewPage
```

5.useRecentReview.tsx

```
import { useEffect, useState } from "react"
import swal from 'sweetalert'
import api from "../../../server/api";

const useRecentReview = () => {
  const [fetchData, setFetchData] = useState<any[]>()
  const [isLoading, setIsLoading] = useState(false)
  useEffect(() => {
    const fetchApi = async () => {
      setIsLoading(true)
      try {
```

```
            const response = await api.get(`/reviews/recent/`)
            setFetchData(response.data)
          } catch (error: any)
            swal(error.respone?.data?.message || "Failed to Fetch Recent Review")
          } finally {
            setIsLoading(false)
          }
        }
        fetchApi()
    }, [])
    return { isLoading, fetchData }
}
export default useRecentReview
```

6. ReviewListPage.tsx

```
import ReviewSection from "./ReviewSection"
import useReviewCount from "../hooks/useReviewCount"
import useAllReviews from "../hooks/useAllReviews"
import AllReviewList from "./AllReviewList"

const ReviewListPage = () => {
  const { isLoading: isAllReviewsLoading } = useAllReviews();
  const { isLoading: isReviewCountLoading } = useReviewCount();
  const isLoading = isAllReviewsLoading || isReviewCountLoading;
  return (
    <>
     {
       isLoading ?
         <div className="flex justify-center items-center my-10">
```

```
          <div className="w-8 h-8 border-4 border-gray-300 border-t-blue-500 rounded-full animate-spin"></div>
        </div> :
        (
          <div className="my-6 max-w-[1600px] mx-auto p-4">
            <p className="text-2xl font-bold">All Reviews</p>
            <ReviewSection />
            <AllReviewList />
          </div>
        )
      }
    </>
  )
}
export default ReviewListPage
```

7. ReviewSection.tsx

```
import { FaStar } from "react-icons/fa";
import useReviewCount from "../hooks/useReviewCount";

const ReviewSection = () => {
  const { fetchReviewCount } = useReviewCount();
  const total =
    fetchReviewCount?.ratings?.reduce(
      (acc: number, r: { count: number }) => acc + Number(r.count),
      0
    ) || 0;

  return (
    <div className="flex max-w-[1200px] mx-auto items-center gap-8">
```

```
{/* Average rating */}
<div className="p-4 border-r border-gray-400 w-[200px] flex flex-col items-center">
  <div className="bg-green-600 flex items-center gap-2 w-18 p-1 justify-center rounded-2xl">
    <span className="text-xl text-white font-bold">
      {fetchReviewCount?.average_rating}
    </span>
    <span>
      <FaStar size={20} className="text-white" />
    </span>
  </div>
  <p className="text-center text-gray-500 mt-2 font-semibold">
    {fetchReviewCount?.total_reviews} reviews
  </p>
</div>
{/* Rating progress bar */}
<div className="flex-1 p-4">
  {fetchReviewCount?.ratings?.map((item: any) => {
    const percentage = total > 0 ? (item.count / total) * 100 : 0;

    // Set color dynamically
    let barColor = "bg-green-500";
    if (item.star === 2) barColor = "bg-orange-500";
    if (item.star === 1) barColor = "bg-red-500";
    return (
      <div key={item?.star} className="flex items-center gap-4 mb-2">
        <span className="text-lg font-semibold">{item?.star}★</span>
        <div className="h-2 w-full bg-gray-100 rounded">
          <div
            className={`h-2 rounded ${barColor}`}
            style={{ width: `${percentage}%` }}
          />
```

```
            </div>
            <span className="font-semibold text-gray-500">
              {item.count || "0"}
            </span>
          </div>
        );
      })}
    </div>
  </div>
 );
};
export default ReviewSection;
```

8. AllReviewList.tsx

```
import { FaStar } from "react-icons/fa"
import useAllReviews from "../hooks/useAllReviews"
import Pagination from "./Pagination"

const AllReviewList = () => {
 const { isLoading, fetchAllData, next, previous, fetchApi } = useAllReviews()
 return (
  <div className="max-w-[1600px] mx-auto my-6">
   <div>
    <p className="text-2xl font-bold drop-shadow-md">Ratings & Reviews</p>
   </div>
   <div className="my-4 space-y-4">
    {
     isLoading ? (
      <p className="text-center text-lg my-10 animate-pulse text-white/70">Loading...</p>
     ) : (fetchAllData?.length == 0 && !isLoading) ? (
```

```
          <p className="text-center text-lg my-10 font-semibold">No Recent Reviews</p>
        ) : (
          fetchAllData?.map((item: any) => (
            <div key={item.id} className="border-b-3 border-gray-100 p-4  ">
              <div className="bg-green-600  text-white flex items-center gap-1 w-12 rounded-2xl justify-
center">
                <span className="font-bold text-lg">{item?.predicted_rating || "0"}</span>
                <FaStar />
              </div>
              <p className="mt-3 text-xl">{item?.review_text}</p>
              <p className="my-2 font-semibold text-gray-400">{item?.created_at}</p>
            </div>
          ))
        )
      }
      </div>

      {/* pagination */}
      {(next || previous) && (
        <Pagination
          isLoading={isLoading}
          next={next}
          previous={previous}
          fetchApi={fetchApi}
        />
      )}
    </div>
  )
}
export default AllReviewList
```

9. Pagination.tsx

```
type PaginationProps = {
  isLoading: boolean;
  next: string | null;
  previous: string | null;
  fetchApi: (url: string) => void;
};
const Pagination = ({ isLoading, next, previous, fetchApi }: PaginationProps) => {
  // Function to extract page number from URL
  const getPageNumber = (url: string | null): number | null => {
    if (!url) return null;
    const params = new URLSearchParams(url.split("?")[1]);
    return Number(params.get("page"));
  };
  const nextPage = getPageNumber(next);
  const prevPage = getPageNumber(previous);

  // Calculate current page
  let currentPage = 1;
  if (prevPage) {
    currentPage = prevPage + 1;
  } else if (nextPage) {
    currentPage = nextPage - 1;
  }
  return (
    <div className="flex justify-center items-center gap-4 mt-4">
      <button
        onClick={() => previous && fetchApi(previous)}
        disabled={!previous || isLoading}
        className="px-4 py-2 bg-gray-300 rounded disabled:opacity-50"
```

```
        >
          Previous
        </button>
        {/* ✅ Page Number Display */}
        <span className="text-lg font-medium">Page {currentPage}</span>
        <button
          onClick={() => next && fetchApi(next)}
          disabled={!next || isLoading}
          className="px-4 py-2 bg-blue-500 text-white rounded disabled:opacity-50"
        >
          Next
        </button>
      </div>
    );
};
export default Pagination;
```

10. useAllReviews.tsx

```
import { useEffect, useState } from "react"
import swal from 'sweetalert'
import api from "../../../server/api";

const useAllReviews = () => {

    const [fetchAllData, setFetchAllData] = useState<any[]>()
    const [next, setNext] = useState<string | null>(null);
    const [previous, setPrevious] = useState<string | null>(null);
    const [isLoading, setIsLoading] = useState(false)
    const fetchApi = async (url: string = "/reviews/") => {
      setIsLoading(true)
```

```
        try {
            const response = await api.get(url)
            setFetchAllData(response.data.results)
            setNext(response.data.next || null);
            setPrevious(response.data.previous || null);
        } catch (error: any) {
            swal(error.response?.data?.message || "Failed to Fetch All Review")
        } finally {
            setIsLoading(false)
        }
    }
    useEffect(() => {
        fetchApi();
    }, []);
    return { isLoading, fetchAllData, next, previous, fetchApi }
}
export default useAllReviews
```

11. useReviewCount.tsx

```
import { useEffect, useState } from "react"
import swal from 'sweetalert'
import api from "../../../server/api";

const useReviewCount = () => {
    const [fetchReviewCount, setFetchReviewCount] = useState<any>()
    const [isLoading, setIsLoading] = useState(false)
    useEffect(() => {
        const fetchApi = async () => {
            setIsLoading(true)
            try {
                const response = await api.get(`/reviews/detail/`)
                setFetchReviewCount(response.data)
```

```
        } catch (error: any) {
            swal(error.respone?.data?.message || "Failed to Fetch Review count")
        } finally {
            setIsLoading(false)
        }
      }
      fetchApi()
   }, [])
   return { isLoading, fetchReviewCount }
}
export default useReviewCount
```

API INSTANCE

```
import axios from "axios";
const api = axios.create({
   baseURL: import.meta.env.VITE_BASE_URL,
   headers: {
      "Content-Type": "application/json"
   }
})
export default api
```

API Endpoints

- POST /reviews/create/
  - Input: { review_text: "The food was great!" }
  - Output: { predicted_rating: 5, text: "The food was great!" }
- GET /reviews/recent/
  - Returns a list of the most recent reviews.
- GET /reviews/
  - Returns all reviews with pagination.
- GET /reviews/detail/
  - Review found with indivitual rating counts, total review, and average rating.

Running Locally

Running Locally

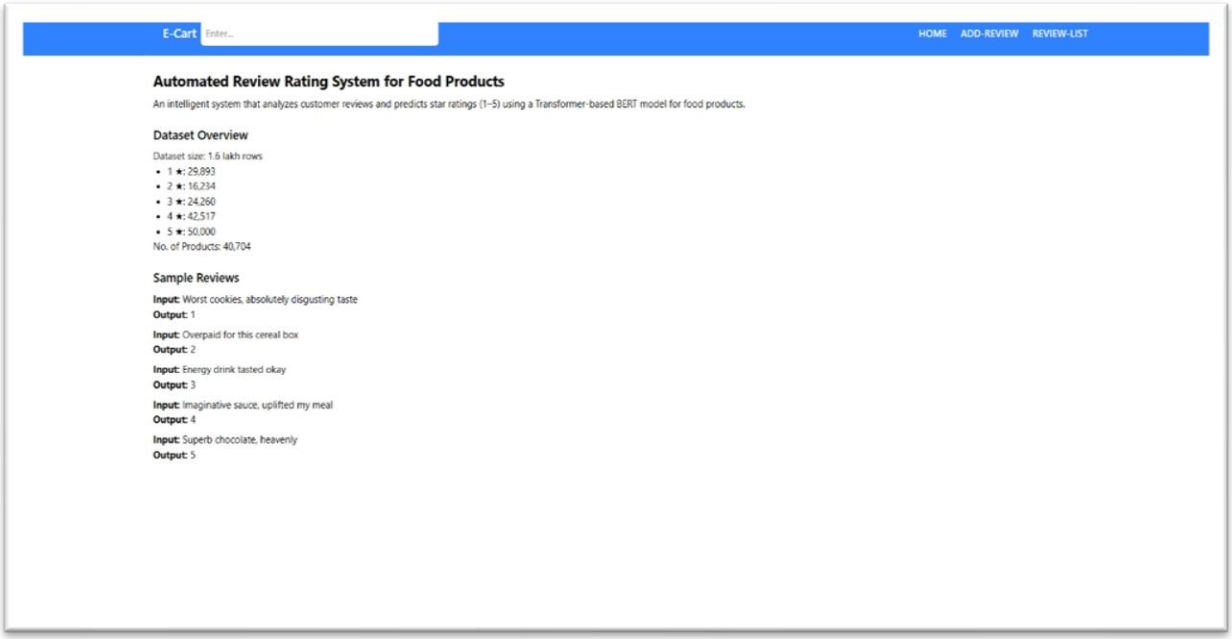
1. Clone repository
2. Install dependencies

   npm install
3. Start dev server

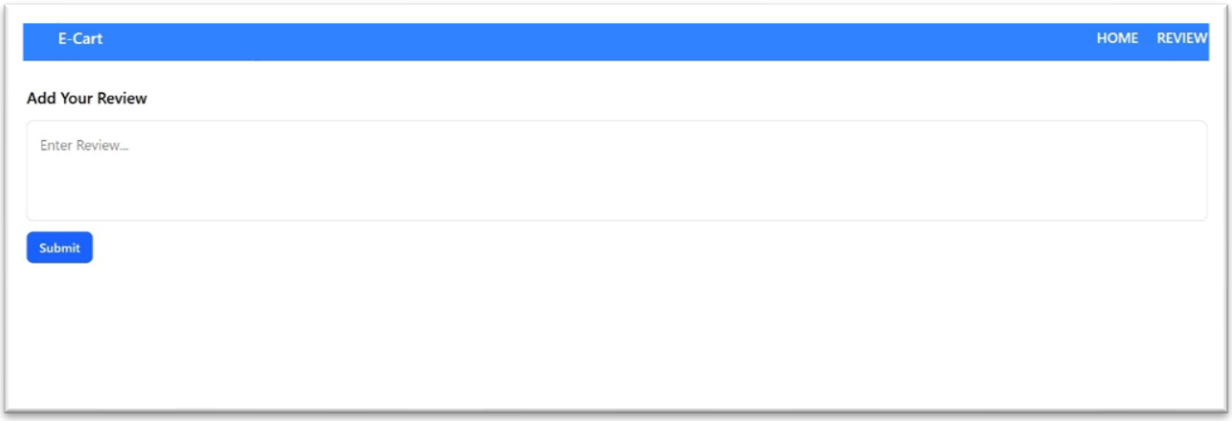
   npm run dev

Preview

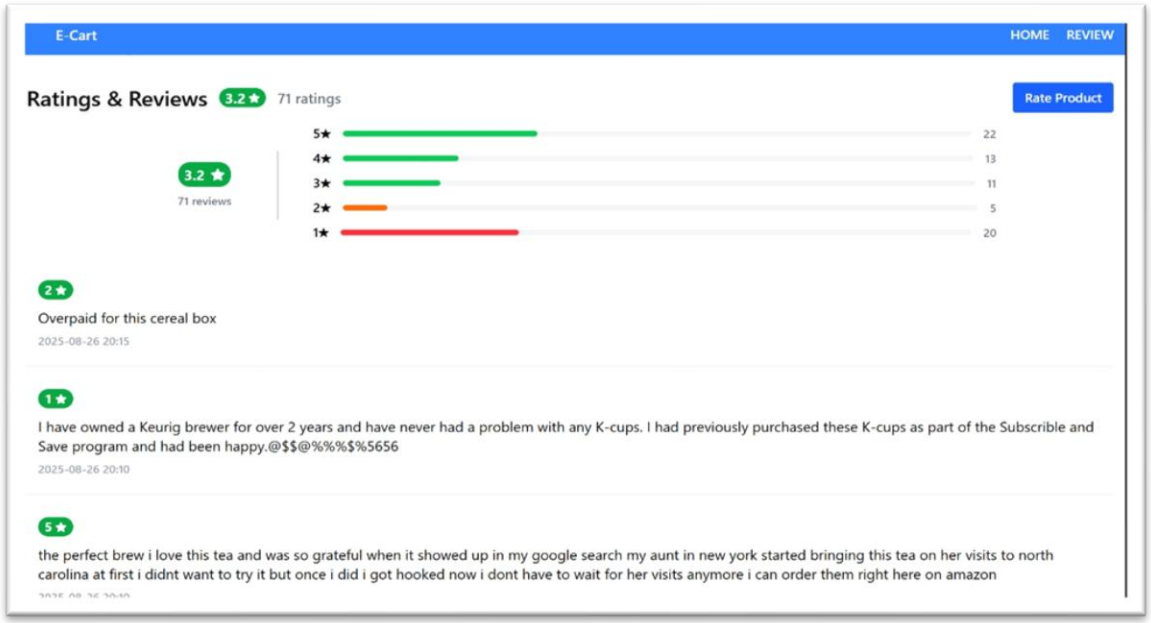
1.Home

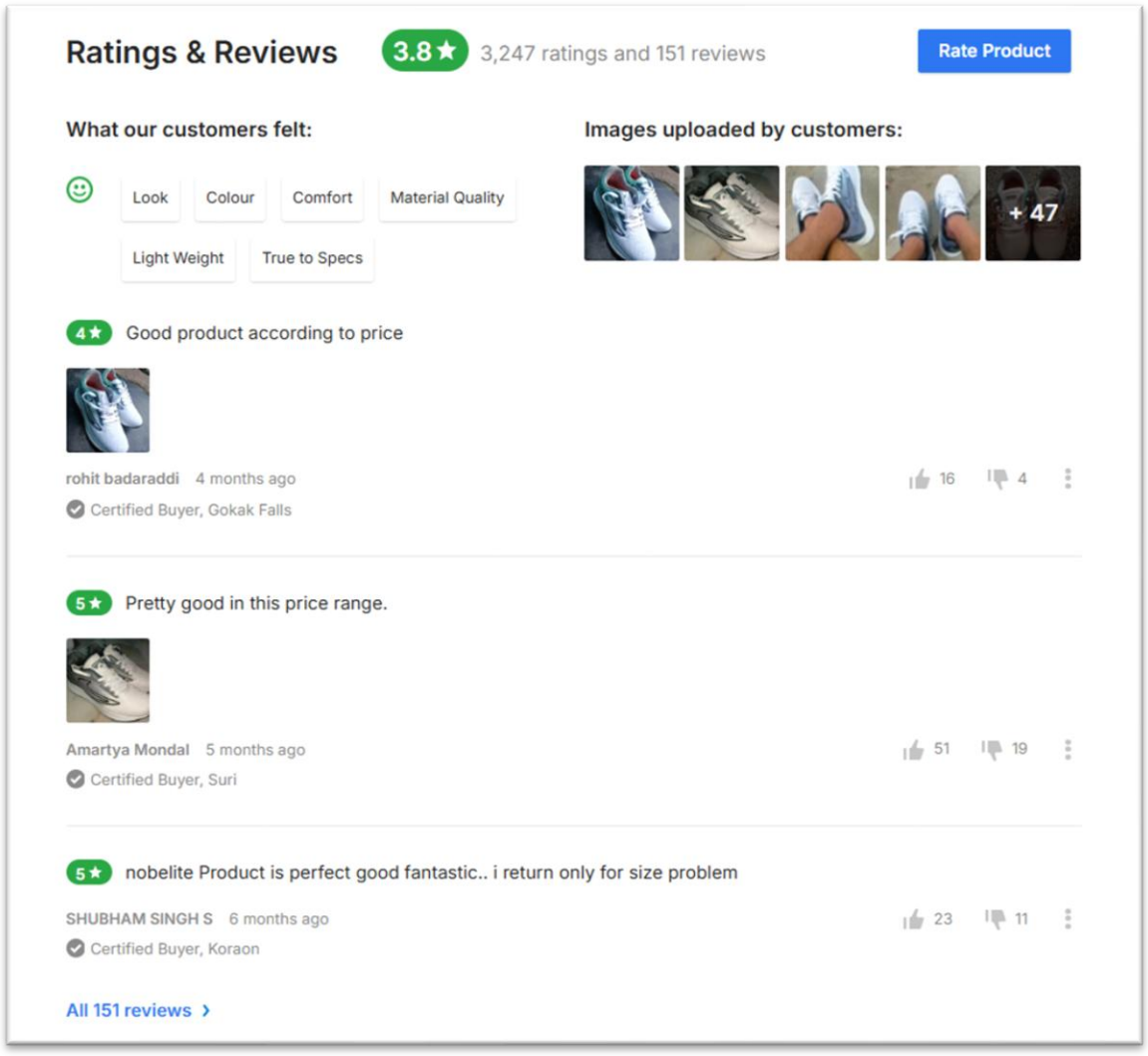


2.Add Review



3.Recent Review





4.All Reviews