Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam – 603 110
(An Autonomous Institution, Affiliated to Anna University, Chennai)
Computer Science and Engineering

CAT 1 & CAT2 – Assignments - Regulations – R2021

Course Code	**UCS1601**	Course Name	Internet Programming				
Course Type	**Theory**	Course Category	Professional Core (PC)	**L**	**T**	**P**	**C**
				3	**0**	**0**	**3**
Regulation	**R-2021**		Academic Year	**2023-24 (Even)**			
Degree and Branch	**B.E. Computer Science & Engineering**		Batch	**2021-25**			
Semester	**VI**		Faculty Name	**Mr. S. Raghavendra Kumar** **Dr. B. Prabavathy**			
Department Offering the Course			**Computer Science and Engineering**				

Deadline: 09.05.2024

Design of Recipe Finder Full Stack Web Application

Problem Description

Design a full stack Recipe Finder web application which allows users to search for recipes based on the name of the recipe. The app can fetch data from various recipe APIs, display recipes, and provide additional details such as cooking instructions, nutritional information, and user reviews. Prepare a report containing the design, code, output snapshots, best practices used and learning outcomes.

[CO1, CO2, CO4, CO5, K5, 1.4.1, 2.1.2, 2.2.3, 3.2.1, 10.1.2, 13.3.1]

Here are some key features to consider:

- **Recipe Search:** Incorporate a search feature that empowers users to discover recipes by entering keyword.
- **Filtering and Sorting:** Provide options to filter and sort recipes based on criteria such as cooking time, difficulty level, and cuisine
- **Recipe Details:** Display detailed information about each recipe, including ingredients and step-by-step instructions along with the image.
- **Saved Recipes:** Allow users to save their favorite recipes for future reference. Provide a personal recipe collection where users can manage and organize their saved recipes

Design the following:

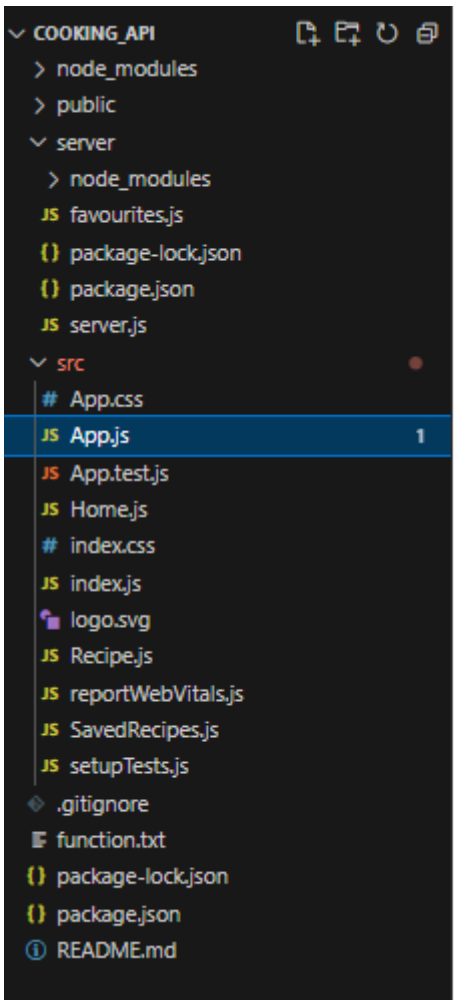
- Most appealing layout template
- Schema of the necessary MongoDB collections
- Necessary endpoints, controllers, collections, and components as a sequence diagram

Do the following operations:

- Sending appropriate GET http requests from front end, to the endpoint in the node server.

Recipe Finder Application using React, React hook, MongoDb, Axios and Express

Project Structure:



CLIENT

App.js

```
import './App.css';
import { useState, useEffect } from "react";
import axios from "axios";
import { BrowserRouter, NavLink, useNavigate } from "react-router-dom";

function App() {
  const [foodlist, setFoodList] = useState([]);
  const [filtered, setFiltered] = useState([]);
  const [currfood, setCurrFood] = useState("");
  const [savedRecipes, setSavedRecipes] = useState([]);

  const navigate = useNavigate();

  useEffect(() => {
    axios.get("http://localhost:3001/getFood")
      .then((response) => {
        setFoodList(response.data);
        setFiltered(response.data);
      })
      .catch((err) => console.log(err));

      axios.get("http://localhost:3001/getSavedRecipes")
      .then((response) => {
        setSavedRecipes(response.data);
      })
      .catch((err) => console.log(err));

  }, []);


  useEffect(() => {
    filterFood(currfood);
  }, [currfood]);

  const filterFood = (searchTerm) => {
    const filteredFood = foodlist.filter(food =>
      food.recipeName.toLowerCase().includes(searchTerm.toLowerCase()) ||
      food.recipeType.toLowerCase().includes(searchTerm.toLowerCase()) ||
      food.recipeArea.toLowerCase().includes(searchTerm.toLowerCase())
    );
    setFiltered(filteredFood);
  };

  const sortRecipes = (letter) => {
```

```
    const sortedFood = filtered ===[] ?
      filtered.filter(food =>
        food.recipeName.toLowerCase().startsWith(letter.toLowerCase())
      ) :
      foodlist.filter(food =>
        food.recipeName.toLowerCase().startsWith(letter.toLowerCase())
      );
    console.log(sortedFood);
    setFiltered(sortedFood);
  };


  const alphabets=[]
  for(let i=65;i<91;i++){
    alphabets.push(String.fromCharCode(i));
  }
  console.log(alphabets);
  const saveRecipe = (id) => {
    const recipeToSave = foodlist.find((food) => food._id === id);
    setSavedRecipes([...savedRecipes, recipeToSave]);

    alert("Recipe added to favourites");
    console.log(typeof(recipeToSave));

    fetch("http://localhost:3001/addSavedRecipe", {
      method: 'POST',
      headers: { 'Content-Type': 'application/json' },
      body: JSON.stringify(recipeToSave)
    })
    .then((res) => {
      if (!res.ok) throw new Error("Unable to add");
      return res.json();
    })
    .catch(err => console.log(err));
  };
  console.log("saved food items :",savedRecipes);

  return (
    <div className="App">
      <h1>Cooking API</h1>
      <input type='text' onChange={(e) => setCurrFood(e.target.value)}
placeholder='Search by name ,type or area name :' />

      <NavLink to={"/saved-recipes"}>
          <button style={{transform:"scale(1.2"}}>Show ⭐</button>
      </NavLink>

      <div id="display-food">
        {filtered.map((food) => (
          <div className="food-items" key={food._id}>
```

```
            <img src={food.thumbnail} height={150} width={150} alt="Food
Thumbnail" />
            <h3>{food.recipeName}</h3>
            <p>Type: {food.recipeType}</p>
            <p>Area: {food.recipeArea}</p>
            <NavLink to={`/recipe/${food._id}`}>
              <button>Get Recipe</button>
            </NavLink>
            <button onClick={()=>{saveRecipe(food._id)}}>☆</button>
          </div>
        ))}
      </div>
      <div className='footer'>
        {
          alphabets.map((alpha,i)=>{
            return <button key={i}
onClick={()=>{sortRecipes(alpha)}}>{alpha}</button>
          })
        }
      </div>
    </div>
  );
}

export default App;
```

index.js

```
import React from 'react';
import ReactDOM from 'react-dom';
import { BrowserRouter, Route, Routes } from 'react-router-dom';
import App from './App';
import Recipe from './Recipe';
import SavedRecipes from './SavedRecipes';

ReactDOM.render(
  <BrowserRouter>
    <Routes>
      <Route path="/" element={<App />} />
      <Route path="/recipe/:id" element={<Recipe />} />
      <Route path="/saved-recipes" element={<SavedRecipes />} />
    </Routes>
  </BrowserRouter>,
  document.getElementById('root')
);
```

Recipe.js

```
import React, { useEffect, useState } from 'react';
import { useParams} from 'react-router-dom'; // Import useParams hook to
access URL parameters
import axios from "axios";
//import { Link } from 'react-router-dom';
function Recipe(){
    const [recipe, setRecipe] = useState(null);
    const { id } = useParams();

    useEffect(() => {
        axios.get(`http://localhost:3001/showRecipe/${id}`).then(
            (response) => {
                setRecipe(response.data);
                console.log(recipe)
            },
        ).catch(
            (error) => {
                console.log(error);
            }
        )


    }, [id]);

    return (
        <div className="recipe" style={{textAlign:'center'}}>
            {/* <div className="navbar">
                <ul style={{listStyle:"none"}}>
                <li><Link to="#ingredients">Ingredients</Link></li>
                <li><Link to="#instructions">Instructions</Link></li>
                </ul>
            </div> */}
            <h2>Recipe Details</h2>
            {recipe ? (
                <div className='recipe_item'>
                    <h3>{recipe.recipeName}</h3>
                    <p>Recipe Type: {recipe.recipeType}</p>
                    <p>Recipe Area: {recipe.recipeArea}</p>
                    <div id='ingredients'>
                        <h4>Ingredients</h4>
                        <ul>
                            {recipe.ingredients.map((ingredient, index) => (
```

```
                            <li key={index}>{ingredient}</li>
                            ))}
                        </ul>
                    </div>
                    <div id='instructions'>
                        <h4>Instructions</h4>
                        <ol>
                            {recipe.instructions.map((instruction, index) => (
                            <li key={index}>{instruction}</li>
                            ))}
                        </ol>
                    </div>
                    <img src={recipe.thumbnail} alt="Food Thumbnail" />
                </div>
            ) : (
                <p>Loading...</p>
            )}
        </div>
    );
};

export default Recipe;
```

App.css

```
body {
  background-color: lightblue;
}

.App {
  text-align: center;
  text-shadow: 1px 1px 2px rgba(0, 0, 0, 0.5);
  text-transform: capitalize;
}
h1{
  font-size:100px;
  color: #fff;
  text-shadow: 2px 5px 5px #000000;
  font-family: cursive;
  transition: transform 1s ease;
  animation: rotateheading 4s infinite;
}

@keyframes rotateheading {
  0% {
    transform:  translateX(0);
  }
  25% {
    transform: translateX(50px);
```

```
  }
  50% {
    transform: translateX(-50px);
  }
  75% {
    transform: translateX(50px);
  }
  100%{
    transform: translateX(0);
  }
}

.food-items {
  border: 1px solid #ddd;
  margin: 10px;
  padding: 10px;
  width: 220px;
  background-color: #fff;
  border-radius: 8px;
  box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);
  transition: transform 1s ease;
}

.food-items:hover {
  transform: translateY(-5px);
}

input[type="text"] {
  width: 70%;
  padding: 8px;
  border: 1px solid #ddd;
  border-radius: 4px;
  margin-bottom: 20px;
  margin-right: 50px;
}

.food-items img {
  display: block;
  margin: 0 auto;
  margin-bottom: 10px;
  border-radius: 4px;
}
p{
  font-size: 20px;
}
.food-items img:hover{
  animation: rotateImg 2s infinite;
}

.food-items h3 {
```

```
  font-size: 20px;
  margin-bottom: 5px;
}

#display-food {
  display: flex;
  flex-wrap: wrap;
  justify-content: center;
}

.recipe {
  background-color: #f9f9f9;
  padding: 20px;
  font-family:Cambria, Cochin, Georgia, Times, 'Times New Roman', serif;
  font-size: 2em;
  animation: colorChange 2s infinite;
}

.recipe_item {
  text-align: left;
}

.recipe h2 {
  font-size: 24px;
  margin-bottom: 20px;
  font-weight: bold;
  text-shadow: 1px 1px 2px rgba(0, 0, 0, 0.5);
  text-transform: uppercase;
  text-decoration: underline;
  font-size: 2em;

}

.recipe p {
  font-size: 30px;
  margin-bottom: 10px;
}

.recipe h4 {
  font-size: 30px;
  margin-bottom: 10px;
}

.recipe img {
  display: block;
  margin: auto;
  margin-top: 20px;
  border-radius: 4px;
  height: 500px;
  width: 500px;
```

```
}


.navbar{
  display: flex;
  justify-content: space-between;
  align-items: center;
  padding: 20px;
}

button{
  margin-right: 10px;
  cursor: pointer;
}

button:hover{
  background-color: lightcyan;
}


@keyframes colorChange {
  0%{
    background-color: lightcoral;
  }
  50%{
    background-color: lightcyan;
  }
  100%{
    background-color: lightskyblue;
  }
}

@keyframes rotateImg{
  0%{
    transform: rotate(0deg);}
  50%{
    transform: rotate(-45deg);
  }
  75%{
    transform: rotate(45deg);
  }
  100%{
    transform: rotate(0deg);
  }
}
```

SavedRecipes.js

```
import React from 'react';
import './App.css';
import { useState, useEffect } from "react";
import axios from "axios";
import { NavLink, useNavigate } from "react-router-dom";


function SavedRecipes() {
    const pageReload=()=>{
        window.location.reload();
    }
    const [savedRecipes, setSavedRecipes] = useState([]);

    useEffect(() => {

        axios.get("http://localhost:3001/getSavedRecipes")
        .then((response) => {
            setSavedRecipes(response.data);
        })
        .catch((err) => console.log(err));
        console.log("reloaded");

    }, []);

    const removeSavedFood=(id)=>{
        const obj={_id:id};
        console.log(id);
        console.log(obj);
        fetch("http://localhost:3001/removeSavedRecipes",{method:'PUT',headers
:{'Content-Type':'application/json'},body:JSON.stringify(obj)})
        .then((result)=>{
            if(!result.ok) throw new Error("Unable to delete")
                return result.json();
        }).catch(err=>{
            console.log(err);
        })
        pageReload();
    }
    return (
        <div className='App'>
        <h2>Saved Recipes</h2>
        <div id="display-food">
            {savedRecipes.map((food) => (
            <div className="food-items" key={food._id}>
                <img src={food.thumbnail} height={150} width={150} alt="Food
Thumbnail" />
                <h3>{food.recipeName}</h3>
                <p>Type: {food.recipeType}</p>
                <p>Area: {food.recipeArea}</p>
                <NavLink to={`/recipe/${food._id}`}>
```

```
                    <button>Get Recipe</button>
                </NavLink>
                <button onClick={()=>{removeSavedFood(food._id)}}>Remove
★</button>
            </div>
            ))}
        </div>
    </div>
    );
}

export default SavedRecipes;
```

SERVER

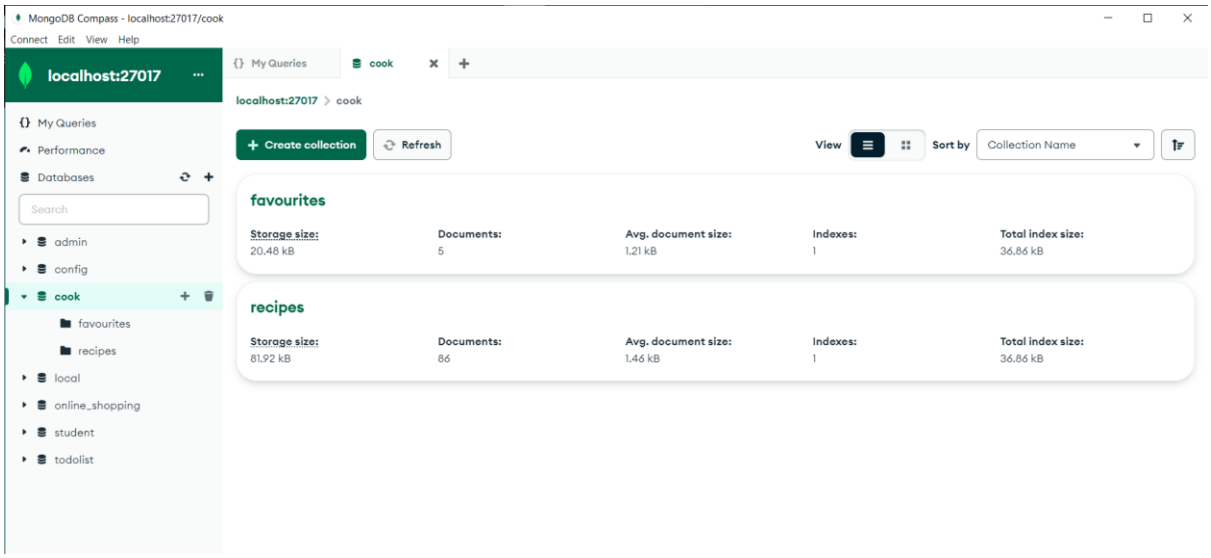
Server.js

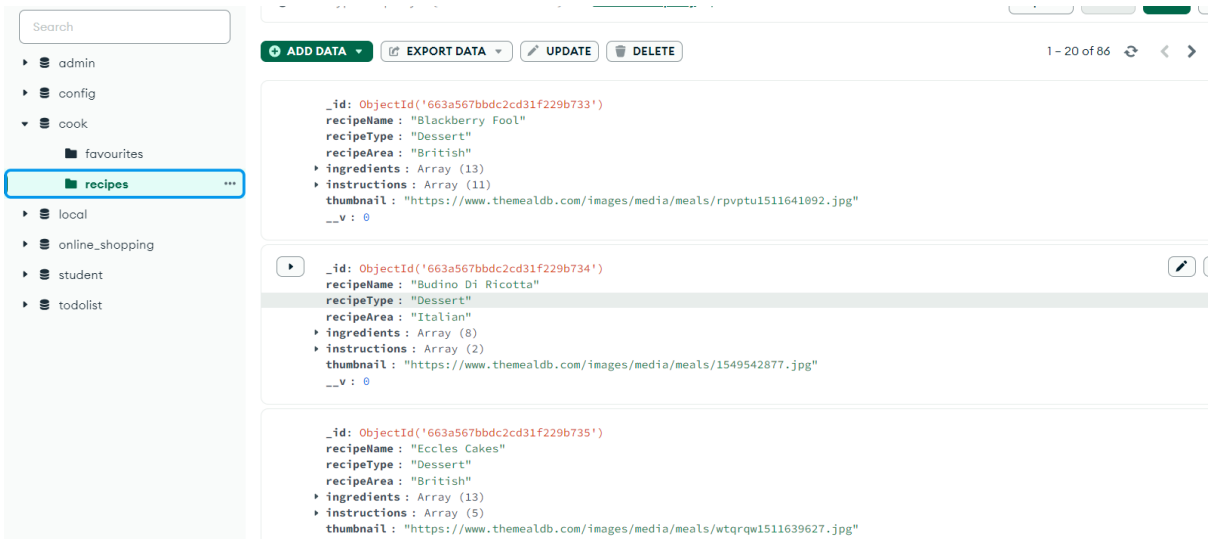
```
const express=require("express");
const mongoose=require("mongoose");
const cors=require("cors");
const app=express();
app.use(express.json());
app.use(cors());
mongoose.connect("mongodb://localhost:27017/cook");

mongoose.connection.on("connected", () => {
    console.log("Connected to MongoDB");
});


const UserSchema=new mongoose.Schema({
    recipeName:{
        type:String,
        required:true
    },
    recipeType:{
        type:String,
        required:true
    },
    recipeArea:{
        type:String,
        required:true
    },
    ingredients:{
        type:[String],
        required:true
    },
```

```
    instructions:{
        type:[String],
        required:true
    },
    thumbnail:{
        type:String,
        required:true
    },
    __v:{
        type:Number,
        default:0
    }
})

const UserModel=mongoose.model("recipes",UserSchema);
const SavedFoodModel=mongoose.model("favourites",UserSchema); //for favourites

app.get("/getFood", (req, res) => {
    UserModel.find({}).then((food) => {
        res.json(food);
    }).catch(err => {
        console.error(err);
        res.json(err);
    });
});

app.get("/showRecipe/:id",(req,res)=>{
    const {id}=req.params;
    UserModel.findById({_id:id}).then(
        (recipe)=>{
            res.json(recipe);
        }
    ).catch(
        (err)=>{
            console.log(err);
            res.json(err);
        }
    )
})


//for saved recipes-----------------------------------------------------------
---------------

app.get("/getSavedRecipes", (req, res) => {
    SavedFoodModel.find({}).then((food) => {
        res.json(food);
    }).catch(err => {
        console.error(err);
        res.json(err);
```

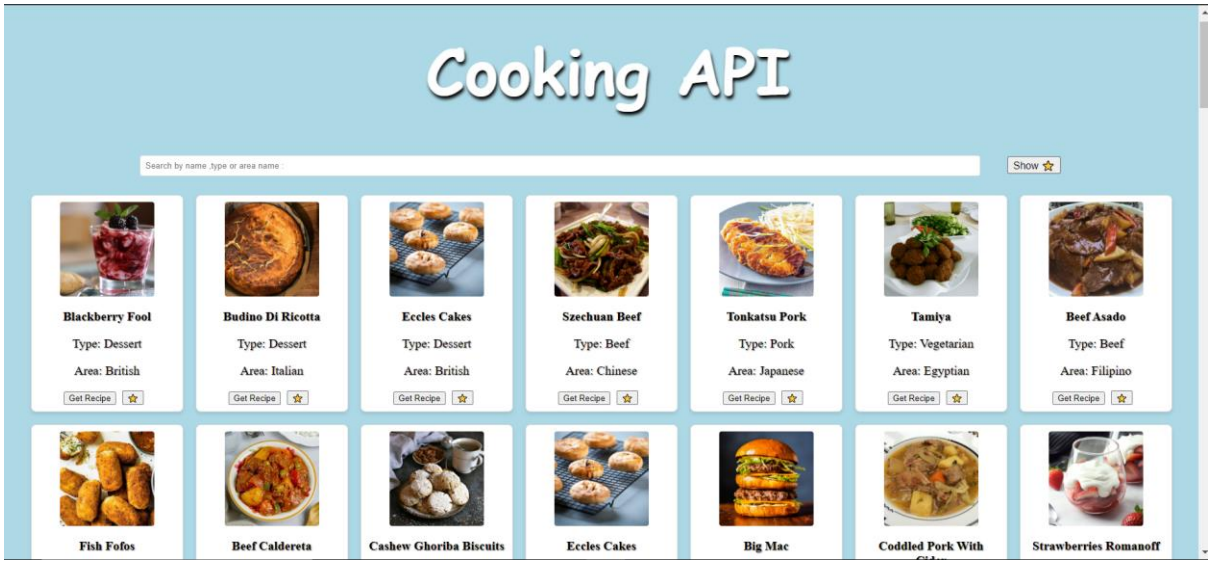
```
    });
});


app.post("/addSavedRecipe", (req, res) => {
    const item = req.body;
    console.log("server side saved ----------------------------------------
---------------:",item);
    const newSavedFood = new SavedFoodModel(item);
    newSavedFood.save()
        .then(result => {
            console.log("saved result :", result);
            return res.json(result);
        })
        .catch(err => {
            console.error("Error saving recipe:", err);
            return res.status(500).json({ error: "Unable to save recipe" });
        });
});

app.put("/removeSavedRecipes", async (req, res) => {
    console.log(req.body);
    console.log(typeof(req.body));
    const { _id } = req.body;
    const result = await SavedFoodModel.deleteOne({ _id: _id });
    if (!result) {
        return res.json({error:"Item not found!!"})
    }
    return res.json({message : "Item deleted successfully!!"});

});

app.listen(3001,()=>{
    console.log("server is running on port 3001");
})
```

MONGODB

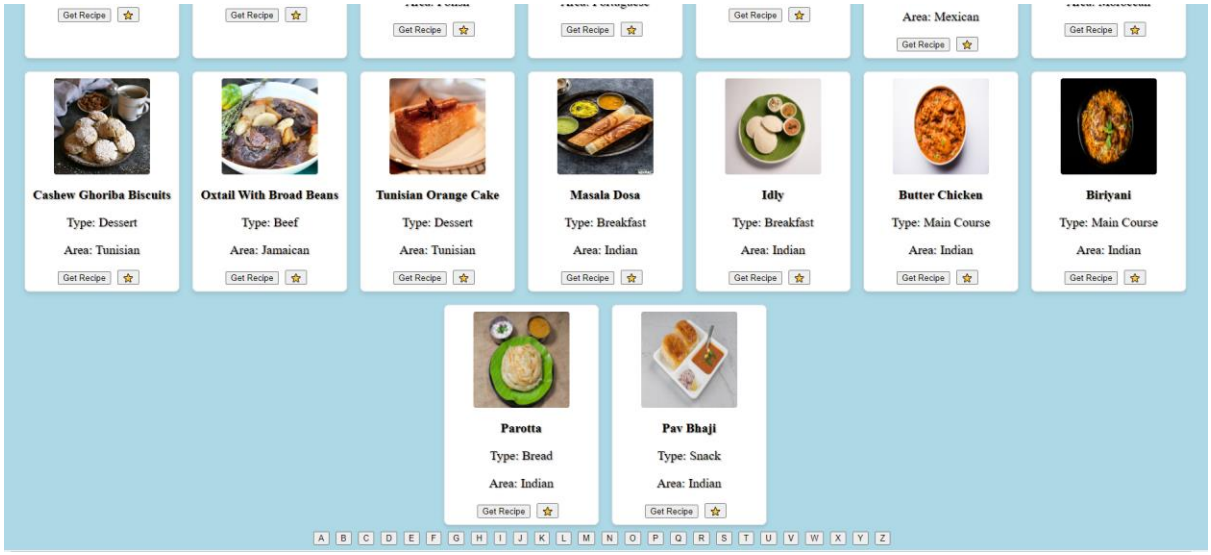

MongoDB Compass - localhost:27017/cook
Connect Edit View Help
localhost:27017
My Queries
Performance
Databases
Search
admin
config
cook
favourites
recipes
local
online_shopping
student
todolist
My Queries
cook
localhost:27017 > cook
Create collection
Refresh
View
Sort by
Collection Name
favourites
Storage size: 20.48 kB
Documents: 5
Avg. document size: 1.21 kB
Indexes: 1
Total index size: 36.86 kB
recipes
Storage size: 81.92 kB
Documents: 86
Avg. document size: 1.46 kB
Indexes: 1
Total index size: 36.86 kB


Search
admin
config
cook
favourites
recipes
local
online_shopping
student
todolist
ADD DATA
EXPORT DATA
UPDATE
DELETE
1 – 20 of 86
_id: ObjectId('663a567bbdc2cd31f229b733')
recipeName : "Blackberry Fool"
recipeType : "Dessert"
recipeArea : "British"
ingredients : Array (13)
instructions : Array (11)
thumbnail : "https://www.themealdb.com/images/media/meals/rpvptu1511641092.jpg"
__v : 0
_id: ObjectId('663a567bbdc2cd31f229b734')
recipeName : "Budino Di Ricotta"
recipeType : "Dessert"
recipeArea : "Italian"
ingredients : Array (8)
instructions : Array (2)
thumbnail : "https://www.themealdb.com/images/media/meals/1549542877.jpg"
__v : 0
_id: ObjectId('663a567bbdc2cd31f229b735')
recipeName : "Eccles Cakes"
recipeType : "Dessert"
recipeArea : "British"
ingredients : Array (13)
instructions : Array (5)
thumbnail : "https://www.themealdb.com/images/media/meals/wtqrqw1511639627.jpg"

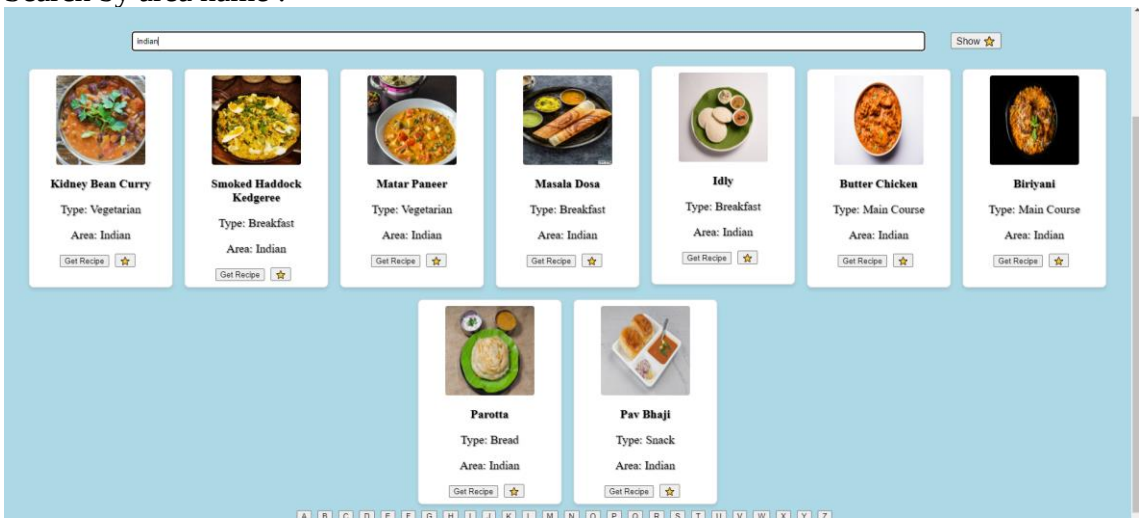
OUTPUT:-



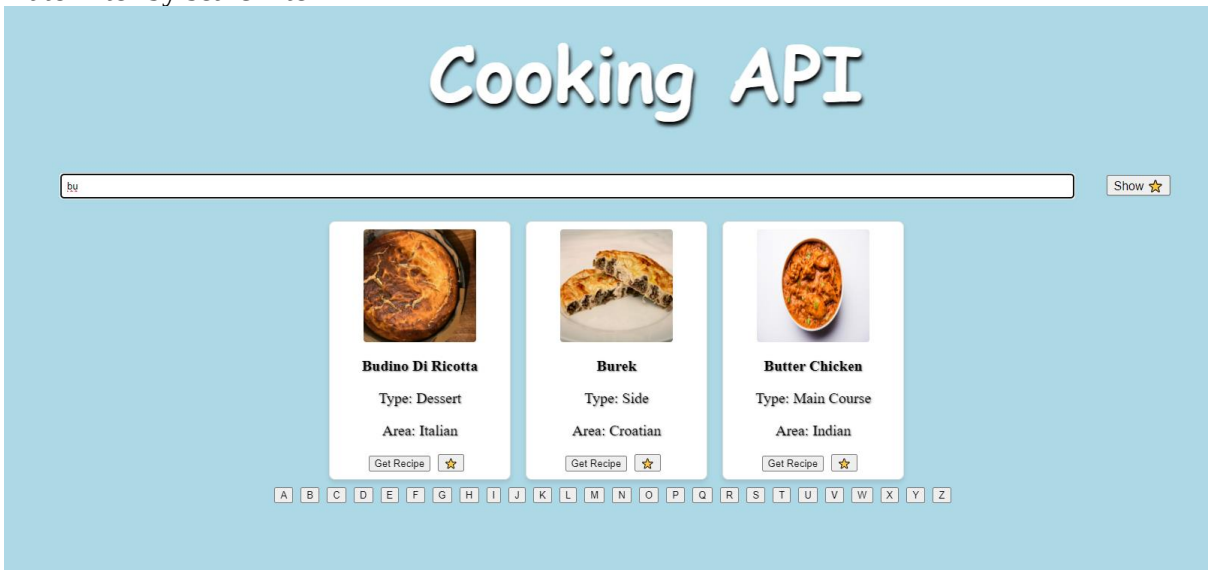
Buttons for sorting



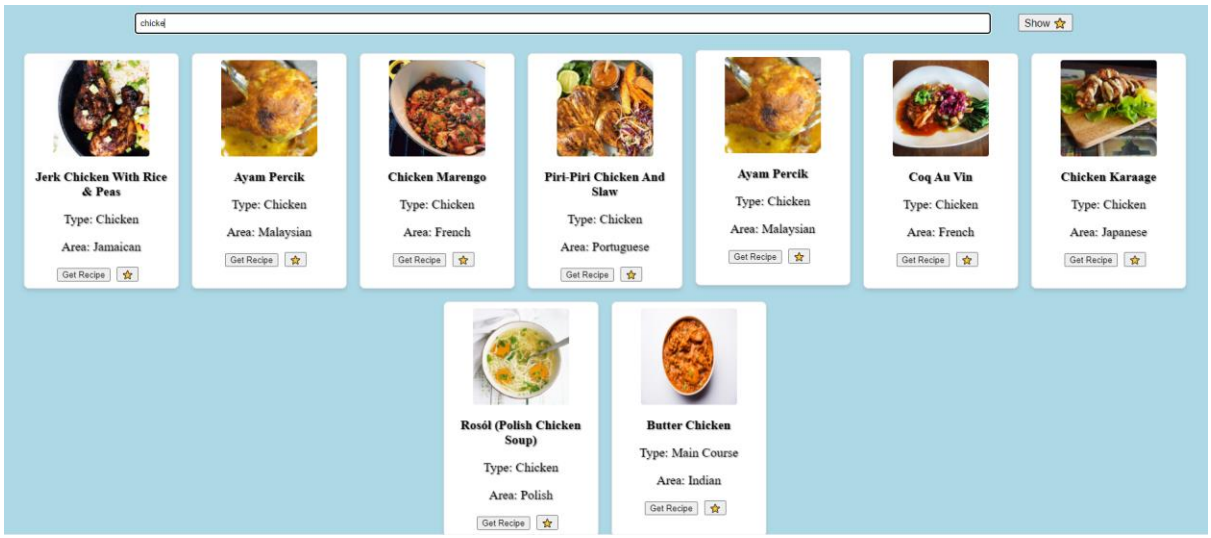
Search by area name :



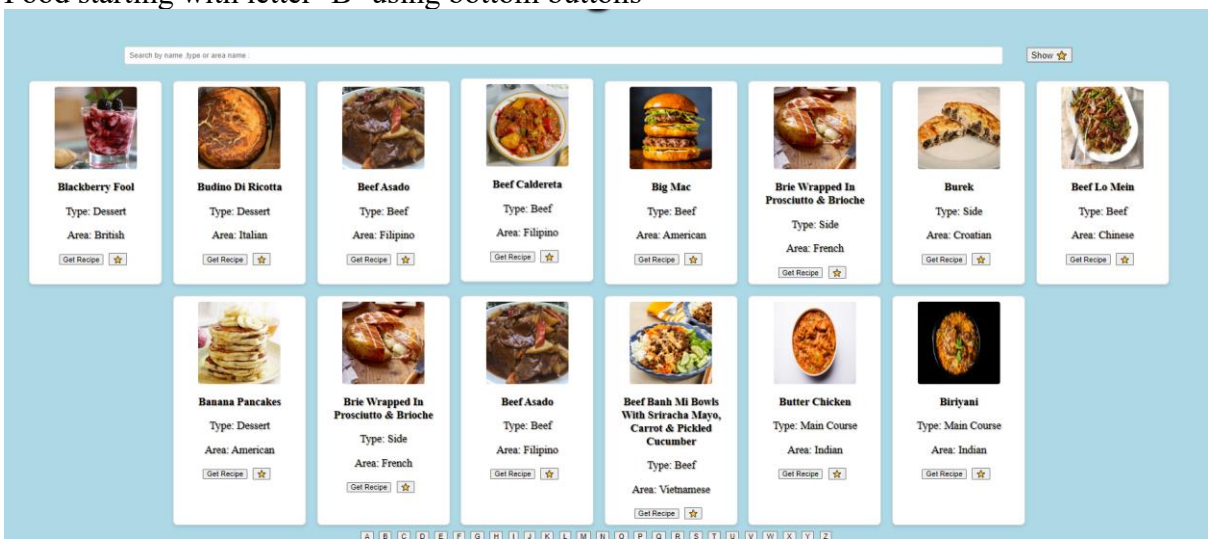
Auto filter by search item



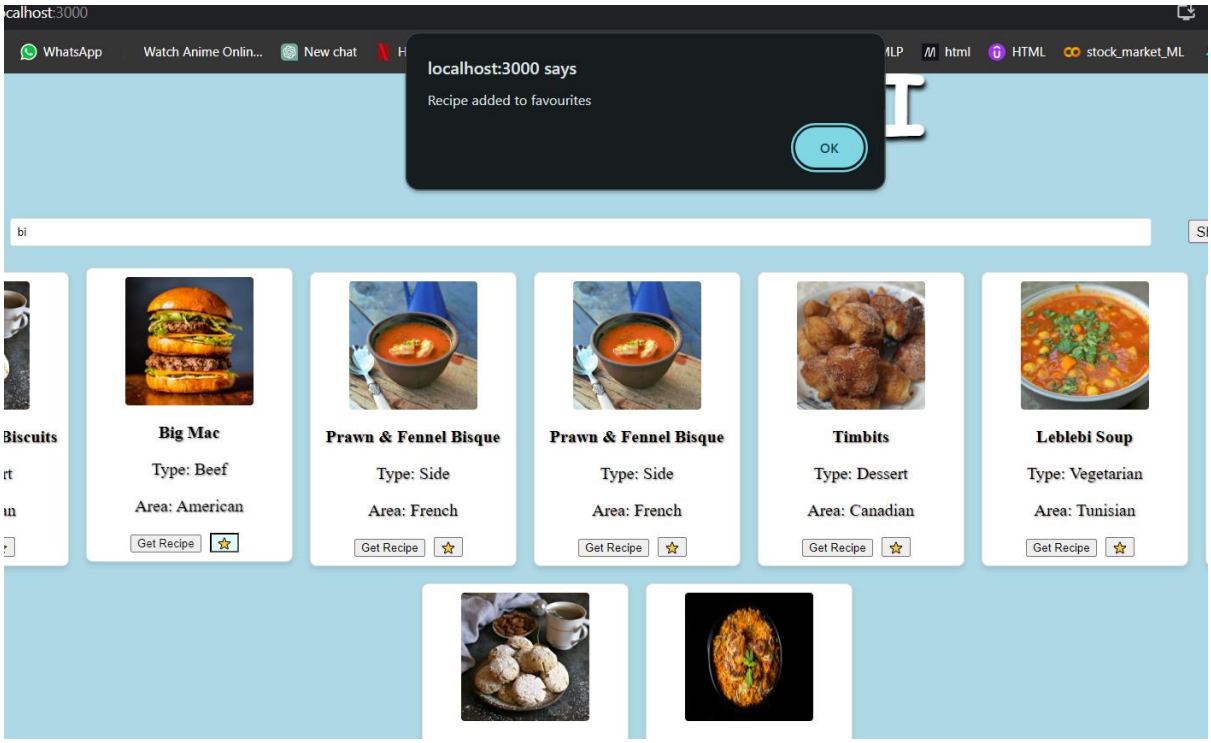
Search by food type :



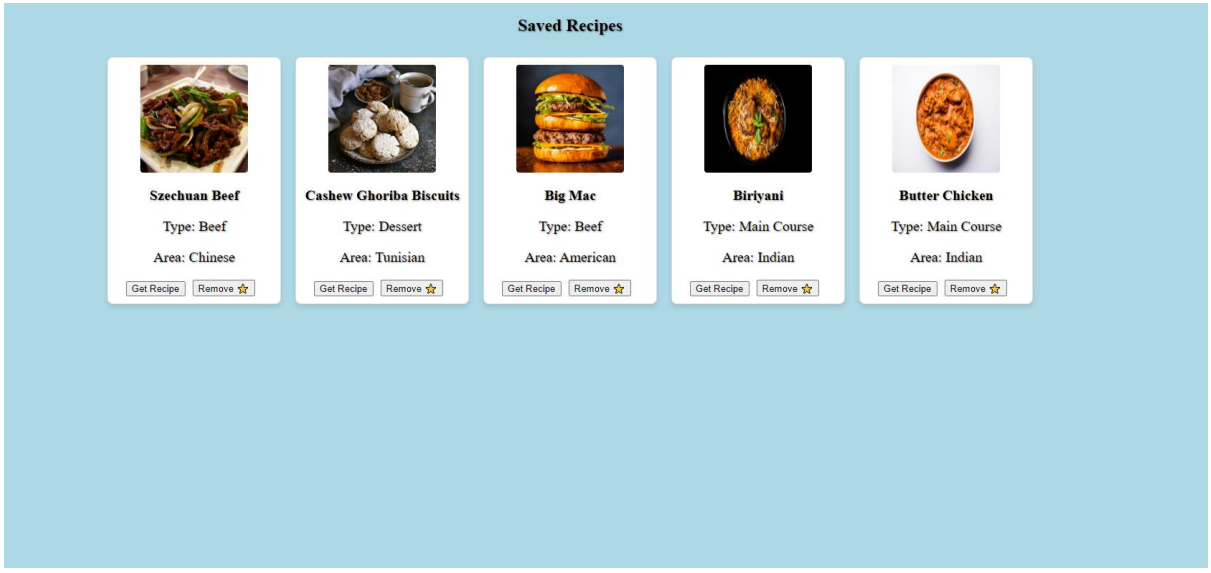
Food starting with letter ‘B’ using bottom buttons



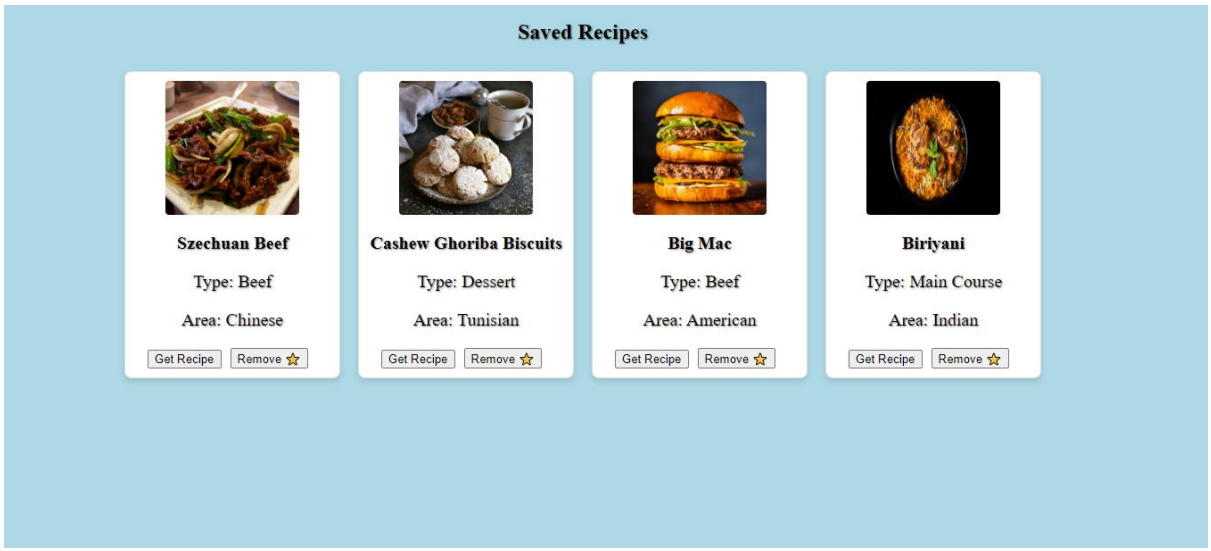
Adding to saved recipes

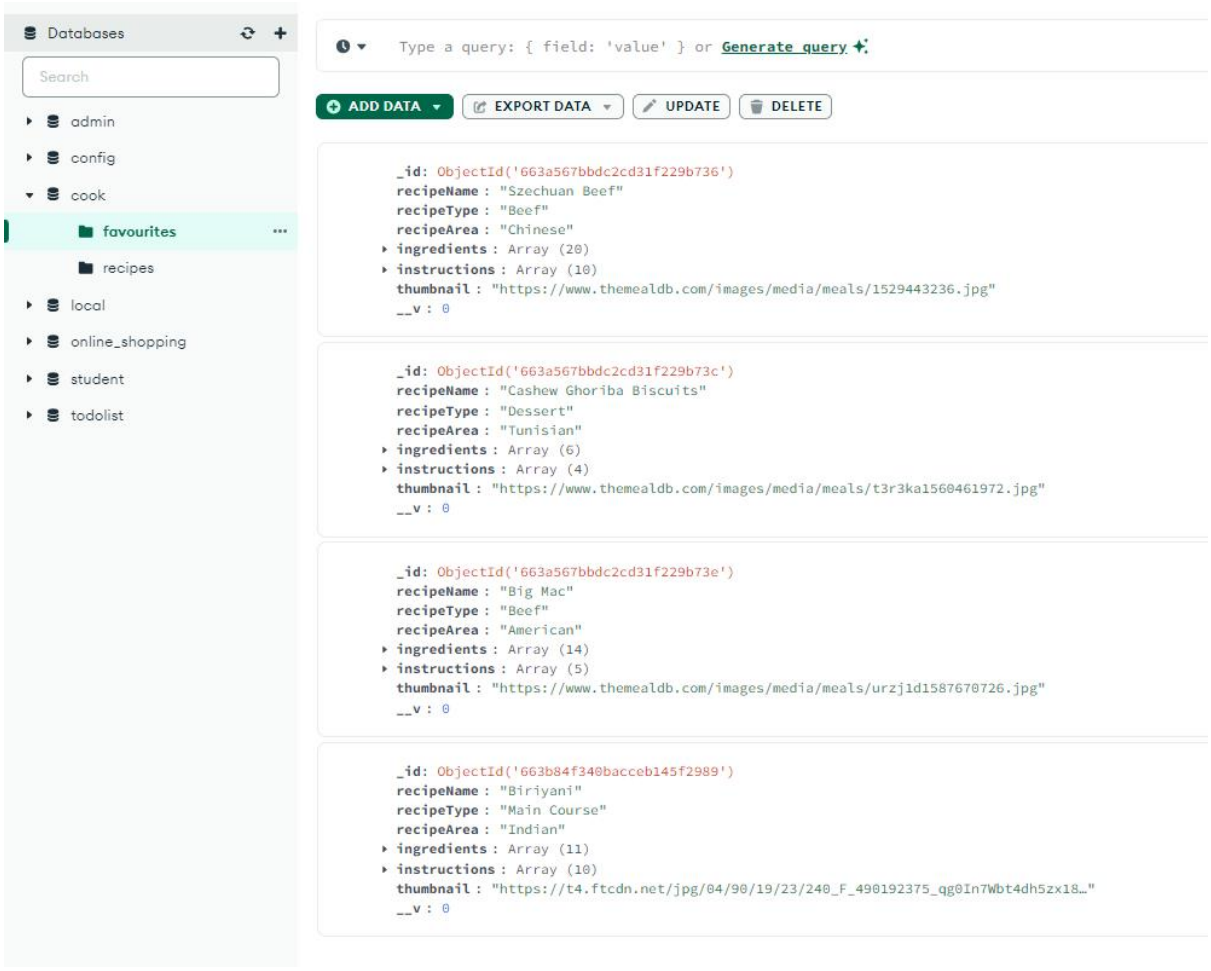


Saved Recipes:



Removing Butter Chicken from saved recipes


Saved Recipes
Szechuan Beef
Type: Beef
Area: Chinese
Get Recipe
Remove
Cashew Ghoriba Biscuits
Type: Dessert
Area: Tunisian
Get Recipe
Remove
Big Mac
Type: Beef
Area: American
Get Recipe
Remove
Biriyani
Type: Main Course
Area: Indian
Get Recipe
Remove


Databases
Search
admin
config
cook
favourites
recipes
local
online_shopping
student
todolist
Type a query: { field: 'value' } or Generate query
ADD DATA
EXPORT DATA
UPDATE
DELETE
_id: ObjectId('663a567bbdc2cd31f229b736')
recipeName : "Szechuan Beef"
recipeType : "Beef"
recipeArea : "Chinese"
ingredients : Array (20)
instructions : Array (10)
thumbnail : "https://www.themealdb.com/images/media/meals/1529443236.jpg"
__v : 0
_id: ObjectId('663a567bbdc2cd31f229b73c')
recipeName : "Cashew Ghoriba Biscuits"
recipeType : "Dessert"
recipeArea : "Tunisian"
ingredients : Array (6)
instructions : Array (4)
thumbnail : "https://www.themealdb.com/images/media/meals/t3r3ka1560461972.jpg"
__v : 0
_id: ObjectId('663a567bbdc2cd31f229b73e')
recipeName : "Big Mac"
recipeType : "Beef"
recipeArea : "American"
ingredients : Array (14)
instructions : Array (5)
thumbnail : "https://www.themealdb.com/images/media/meals/urzj1d1587670726.jpg"
__v : 0
_id: ObjectId('663b84f340bacceb145f2989')
recipeName : "Biriyani"
recipeType : "Main Course"
recipeArea : "Indian"
ingredients : Array (11)
instructions : Array (10)
thumbnail : "https://t4.ftcdn.net/jpg/04/90/19/23/240_F_490192375_qg0In7Wbt4dh5zx18…"
__v : 0

Get Recipe functionality

RECIPE DETAILS

Big Mac

Recipe Type: Beef

Recipe Area: American

Ingredients

- 400g Minced Beef
- 2 tbs Olive Oil
- 2 Sesame Seed Burger Buns
- Chopped Onion
- 1/4 Iceberg Lettuce
- 2 sliced Cheese
- 2 large Dill Pickles
- 1 cup Mayonnaise
- 2 tsp White Wine Vinegar
- Pinch Pepper
- 2 tsp Mustard
- 1 1/2 tsp Onion Salt
- 1 1/2 tsp Garlic Powder
- 1/2 tsp Paprika

Instructions

1. For the Big Mac sauce, combine all the ingredients in a bowl, season with salt and chill until ready to use.
2. 2. To make the patties, season the mince with salt and pepper and form into 4 balls using about 1/3 cup mince each. Place each onto a square of baking paper and flatten to form into four x 15cm circles. Heat oil in a large frypan over high heat. In 2 batches, cook beef patties for 1-2 minutes each side until lightly charred and cooked through. Remove from heat and keep warm. Repeat with remaining two patties.
3. 3. Carefully slice each burger bun into three acrossways, then lightly toast.
4. 4. To assemble the burgers, spread a little Big Mac sauce over the bottom base. Top with some chopped onion, shredded lettuce, slice of cheese, beef patty and some pickle slices. Top with the middle bun layer, and spread with more Big Mac sauce, onion, lettuce, pickles, beef patty and then finish with more sauce. Top with burger lid to serve.
5. 5. After waiting half an hour for your food to settle, go for a jog.