

AC 215: Milestone 2 Model Evaluation I (before and after RAG+fine-tuning the LLM)

This evaluation compares a basic “gemini-1.5-flash-001” generative model against our fine-tuned LLM with RAG integration. The LLM Response (with RAG and after Fine-Tuning) is divided by the **RAG chunking type**. The two chunking_types are “**entire_recipe**” and “**sliding_window**”.

Please see the “src/llm_rag” directory in our GitHub repository for more details.

Note: The format of the input and output has been slightly altered for readability purposes.

Insights:

The different chunking types don’t seem to have any significant impact on the performance of the model. The ranking of the recipes ends up being slightly different, but that is most likely due to the inherent random nature of LLMs.

Analyzing these outputs, however, does expose an area for improvement: RAG works based on cosine similarity, meaning that the recipes it outputs do not necessarily contain *all* the ingredients the user specified. This means that we’ll have to do some computation to filter out some recipes (i.e. the ones that just use a proper subset of the specified ingredients) before including all the fetched documents in the input prompt.

Example 1:

(Base) Input Prompt:

I want to use beef, butter, and mushrooms to cook a recipe.

Here are the ingredients I have available in my pantry: beef, mushrooms, butter, salt, pepper, garlic, onion, olive oil, flour, sugar, soy sauce, tomato paste, oregano, thyme, basil, parsley, paprika, cumin, cinnamon, baking powder, baking soda, eggs, milk, pasta, rice, canned tomatoes, chicken broth, vinegar, honey, mustard, chili powder, cornstarch, brown sugar, bread crumbs, parmesan cheese, bay leaves, lemon, carrots, potatoes, bell peppers, spinach, zucchini, celery, broccoli, cauliflower, peas, green beans, kale.

LLM Response (without RAG and before Fine-Tuning):

You have a great selection of ingredients to work with! Here are a few ideas for recipes using beef, butter, mushrooms, and some of your other pantry staples:

****Classic Beef Dishes:****

- ****Beef Stroganoff:**** This classic dish is creamy and comforting. Use beef tenderloin or sirloin, sautéed mushrooms, onions, and garlic in butter. Then add a creamy sauce made with sour cream, cream cheese, or heavy cream, and seasonings like paprika, salt, and pepper. Serve over egg noodles or rice.
- ****Beef Bourguignon:**** A rich and flavorful French stew. Brown beef cubes in butter, then add onions, carrots, and mushrooms. Deglaze the pan with red wine, add beef broth, and simmer until the beef is tender. Add pearl onions, bacon, and herbs like thyme, parsley, and bay leaves. Serve over mashed potatoes or crusty bread.
- ****Beef Stew:**** A hearty and satisfying meal. Brown beef cubes in butter, then add diced carrots, potatoes, onions, and mushrooms. Add beef broth, tomato paste, and seasonings like salt, pepper, thyme, and oregano. Simmer until the vegetables are tender and the beef is falling apart. Serve with a side of crusty bread.

****Beef and Mushroom Pastas:****

- ****Beef and Mushroom Pasta with Creamy Garlic Sauce:**** Sauté sliced mushrooms, onions, and garlic in butter. Add sliced beef and cook until browned. Deglaze the pan with white wine or chicken broth, and then add heavy cream, Parmesan cheese, and seasonings like salt, pepper, and parsley. Toss with cooked pasta of your choice.
- ****Beef and Mushroom Bolognese:**** A hearty and flavorful sauce for pasta. Brown ground beef in butter, then add chopped onions, carrots, celery, and mushrooms. Add canned tomatoes, tomato paste, and seasonings like oregano, basil, garlic, and salt. Simmer until the sauce is thick and flavorful. Serve over spaghetti or other pasta.

****Tips for Success:****

- ****Use quality ingredients:**** Start with good quality beef and mushrooms for the best flavor.
- ****Don't be afraid to experiment:**** Feel free to adjust the recipes to your liking. Add different herbs and spices, or substitute ingredients as needed.
- ****Don't overcook the beef:**** Beef should be cooked to an internal temperature of 145 degrees Fahrenheit for medium-rare. Overcooked beef will be tough and dry.
- ****Don't be afraid to use butter:**** Butter adds richness and flavor to beef dishes.

Let me know if you'd like more ideas for specific recipes!

Input Prompt with RAG output (chunking_type=entire_recipe):

I want to use beef, butter, and mushrooms to cook a recipe.

Here are the ingredients I have available in my pantry: beef, mushrooms, butter, salt, pepper, garlic, onion, olive oil, flour, sugar, soy sauce, tomato paste, oregano, thyme, basil, parsley, paprika, cumin, cinnamon, baking powder, baking soda, eggs, milk, pasta, rice, canned tomatoes, chicken broth, vinegar, honey, mustard, chili powder, cornstarch, brown sugar, bread crumbs, parmesan cheese, bay leaves, lemon, carrots, potatoes, bell peppers, spinach, zucchini, celery, broccoli, cauliflower, peas, green beans, kale.

Possible Recipes:

Recipe: Mushroom Beef (Low Fat)

Recipe Servings: 4.0

Total Time: 6 hours 25 minutes

Ingredients:

- 1 1/2 sirloin tip steaks, 1 Worcestershire sauce, 1 Dijon mustard, 1 fresh mushrooms, 1 all-purpose flour, 2 water, 2 baking potatoes

Calories: 538.6

Sugar Content: 3.0

Protein Content: 42.7

Instructions:

1. In 3 to 3 1/2 quart slow cooker, mix all ingredients except flour, water and potatoes.
2. Cover, cook on low heat 6 to 8 hours.
3. In small bowl, mix flour and water; stir into beef mixture. Increase heat setting to high. Cover; cook 15 to 20 minutes or until thickened.
4. Meanwhile, pierce potatoes all over with fork. In microwave oven, arrange potatoes in spoke pattern with narrow ends in center. Microwave 12 to 14 minutes, turning once, until tender. Cover, let stand 5 minutes.
5. Split potatoes; mash slightly with fork. Spoon beef and mushroom mixture over potatoes.

Recipe: Beefsteak and Mushroom Pie

Recipe Servings: 8.0

Total Time: 2 hours 30 minutes

Ingredients:

- 2 bacon, 2 butter, 6 onions, 2 mushrooms, 2 tomato paste, 12 flour, 2 beer, 2 grainy mustard, 1 puff pastry, 1 egg

Calories: 490.3

Sugar Content: 2.6

Protein Content: 30.0

Instructions:

1. Cut beef into 1 inch cubes and brown in batches in the vegetable oil over medium high heat.
2. Transfer to bowl with a slotted spoon.
3. Add bacon to pan and cook until crisp.
4. Add to beef.
5. Drain the fat from the pan and melt the butter over medium heat.

6. Add onions and mushrooms; cook for about 15 minutes, until the liquid has evaporated.
7. Stir in tomato paste and cook, stirring, for 2 minutes.
8. Sprinkle with flour and cook, stirring, for 1 minute.
9. Whisk in beer, mustard, salt and pepper until smooth.
10. Return beef mixture with any juices to pan.
11. Cover and bake in 350 oven for 1 hour or until beef is tender.
12. Let cool for 30 minutes and proceed or refrigerate up to one day and reheat.
13. Put mixture into an 8 cup (2 L oval casserole.
14. On floured surface, roll out pastry to fit top of dish plus 1 inch extra.
15. Trim edges.
16. Brush edge of dish with water and centre pastry over filling, gently pressing edges to adhere to the casserole dish.
17. Brush with egg and make 4 slashes for steam vents.
18. Bake in 400 oven for 30 minutes until puffed and golden, about 30 minutes.

Recipe: Garlic Mushrooms

Recipe Servings: 4.0

Total Time: 13 minutes

Ingredients:

- 1/2 beef broth, 1/8 salt, 1 canola oil, 5 mushrooms, NA garlic, 1/4 black pepper, 10 fresh parsley

Calories: 42.9

Sugar Content: 1.5

Protein Content: 3.5

Instructions:

1. Heat oil in a large (nonstick skillet coated with cooking spray.
2. Heat over medium to high heat until hot.
3. Add the mushrooms, red pepper, salt and garlic into the skillet and saute for 3 minutes.
4. Reduce heat to medium and then add the broth and black pepper and cook for 5 minutes.
5. Remove from heat and then sprinkle with parsley.

Recipe: Quick and Easy Mushrooms

Recipe Servings: 10.0

Total Time: 24 hours 30 minutes

Ingredients:

- 2 button mushrooms, 2 beef broth, 2 garlic, 1 hot ketchup

Calories: 217.7

Sugar Content: 12.4

Protein Content: 20.5

Instructions:

1. Puncture sausage with a fork and put in large pot and add water to cover. Boil sausage for at least 10 minutes.

2. *drain and rinse sausage.*
3. *When cool peel off casings and cut into bite size pieces.*
4. *In a large saucepan mix beef broth, italian seasonings, and garlic and mushrooms.*
5. *Bring to a boil and let boil for 5 minutes.*
6. *Add sausage and cook for 5 minutes.*
7. *Remove from heat and let cool.*
8. *Let stand overnight in refridgerator.*
9. *The next day put into large crockpot or roaster and add ketchup.*
10. *Bring to serving temperature and keep on low heat, Serve.*
11. *(NOTE-Do not wash mushrooms it will make them watery, just wipe with damp cloth to clean. Leave mushrooms whole, I always look for mushrooms that aren't to large so that I get more and then they are just one bite when they eat them. If you want you can use half beef broth and half beer or wine but you should use at least half the beef broth. I always serve these with toothpicks for a great appetizer..*
12. *This is really easy to double or even triple just keep equal amounts of sausage and mushrooms.*
13. *Also if you have leftover sauce after the mushrooms and sausages are gone you can freeze this and use this for your sauce the next time by just adding more mushrooms ans sausage. It actually gets beter with time.*

Recipe: Tournedos Au Poivre Et Champignons(Filet Au Poivre W/Mushrooms)

Recipe Servings: 6.0

Total Time: 1 hour 20 minutes

Ingredients:

- *6 peppercorn, 1/4 butter, 1 1/2 cognac, 3 salt, NA butter, 1 1/2 mushroom, 6 parsley*

Calories: 120.2

Sugar Content: 1.3

Protein Content: 2.8

Instructions:

1. *Mash peppercorns with a mallet or the back of a heavy pan.*
2. *Press each side of the fillets into the cracked peppercorns and let the beef stand about an hour to absorb the flavor.*
3. *Heat the butter and add the beef and sear about 8 minutes per side for rare, 10 for medium, 12 for well done.*
4. *Remove the steaks to a platter and allow to rest.*
5. *Add cognac to the pan and heat for just a few seconds and then set ablaze.*
6. *Option 1: Boil the liquid about a minute then stir in additional butter, salt and cream.*
7. *Bring to a boil, reduce heat, add mushrooms and saute till mushrooms are soft.*
8. *Pour over fillets and sprinkle with parsley.*
9. *Option 2: Skip the cream (but it's better with.*

Recipe: Cooked Mushrooms

Recipe Servings: 4.0

Total Time: 13 minutes

Ingredients:

- 1/2 butter, 1 whole mushroom

Calories: 228.4

Sugar Content: 2.3

Protein Content: 3.8

Instructions:

1. Cook the mushrooms in the butter, in a covered saucepan on low heat until done.
2. You can use the butter for omelets or other cooking like vegetables.

Recipe: Beef With Cabbage and Mushrooms

Recipe Servings: 4.0

Total Time: 25 minutes

Ingredients:

- 1 garlic cloves, 4 small mushroom, 1 green cabbage, 1 onion, 4 beef broth, 1 beef broth, 2 cornstarch, 3/4 low sodium soy sauce, 2 ground ginger, 2 sugar, 1/2 pepper, 1/4 salt

Calories: 312.1

Sugar Content: 7.2

Protein Content: 29.0

Instructions:

1. In a small bowl whisk together the 3/4 cup beef broth, cornstarch, soy sauce, ginger, sugar, pepper and optional salt; SET ASIDE.
2. In a large skillet or wok, heat oil until hot. Add the flank steak and crushed garlic cloves; saute until almost cooked, about 2 to 3 minutes; remove and set aside.
3. To the hot empty skillet/wok, add the mushrooms, cabbage, sliced onion, and 2 tablespoons beef broth. Cook and stir until tender-crisp, about 4-6 minutes.
4. Pour the set aside soysauce mixture into the skillet with the veggie mixture and cook; stir until thickened, about 2 minutes.
5. Stir in the set aside beef and heat through.

Recipe: Roasted Mushrooms for a Crowd

Recipe Servings: 10.0

Total Time: 1 hour 10 minutes

Ingredients:

- 5 mushrooms, 8 shallots, 3 garlic cloves, 1 dried thyme, 1 black pepper, 1 red wine, 6 beef bouillon powder, 1 hot water, 2 butter, 2 olive oil, 1/3 dark soy sauce, NA reduced sodium soy sauce

Calories: 133.4

Sugar Content: 3.9

Protein Content: 7.8

Instructions:

1. *Preheat oven to 400 degrees F.*
2. *Place cleaned mushrooms in a large roaster and set aside.*
3. *In a skillet melt the butter with the oil.*
4. *Add minced shallots and saute until translucent.*
5. *Add garlic, pepper, and dried thyme. Saute until fragrant and garlic is softened.*
6. *Add wine. Bring to a boil, and allow to bubble until some of the alcohol cooks off and the wine reduces a bit.*
7. *Mix beef bouillon powder, soy sauce and hot water. Add to skillet, stirring well.*
8. *Allow to simmer for a minute or two to blend flavours.*
9. *Pour mixture over the mushrooms in the roaster. Cover with the roaster lid.*
10. *Roast in 400 degree F oven for 20 minutes, then stir. Place back in oven uncovered and roast an additional 20 minutes.*
11. *Taste the liquid. Moisture from the mushrooms has diluted it some. Season with salt and pepper to taste.*
12. *If you like you can strain out the mushrooms and reduce the cooking liquid by about half, then pour over the mushrooms in a serving container.*

Recipe: Inspired Steakhouse Mushrooms

Recipe Servings: 4.0

Total Time: 55 minutes

Ingredients:

- *3 green onions, 1/4 onion, 2 garlic cloves, 1/4 butter, 1 fresh mushrooms, 1/4 wine, 1 Worcestershire sauce, 2 beef broth*

Calories: 160.5

Sugar Content: 3.5

Protein Content: 5.4

Instructions:

1. *Melt butter in a 2-quart saucepan.*
2. *Saute green onions, diced onions and garlic in butter over a medium flame for about 2 minutes, taking care not to burn the garlic.*
3. *Add rest of ingredients to pan and simmer uncovered for at least 20 minutes (longer simmering just means more tender and flavorful mushrooms, so I usually let these go for 30-45 minutes while I prep the rest of dinner.*

Recipe: Beef and Pasta With Mushroom Sauce and Vegetables

Recipe Servings: 6.0

Total Time: 40 minutes

Ingredients:

- *1 beef, 1 water, 2 nutmeg, 2 bow tie pasta, 1 rotini pasta, 1 sugar snap peas, 4 parmesan cheese*

Calories: 906.3

Sugar Content: 2.5

Protein Content: 14.9

Instructions:

1. *Cook pasta in a large pot.*
2. *Strain and run cold water through.*
3. *Cook beef in large non-stick skillet over medium heat with a little oil for about 5 minutes.*
4. *Dissolve soup mix in water and add 2 cans mushroom soup to lipton soup mixture and mix.*
5. *Pour over beef, add nutmeg and mix well.*
6. *Cover, bring to boil and simmer 10 minutes, stir often.*
7. *Stir in cooked pasta, mushrooms and peas or your choice of vegetables.*
8. *(As an alteration, you can cook the pasta in the pot with the beef and soup. Add 3 cups of water instead of 2 and simmer until pasta is cooked, stirring often Cook 10 minutes or until heated through stirring often.*
9. *Remove from heat and toss with Grated Parmesan cheese.*
10. *Leftovers can be used as a side dish for the next day's dinner.*
11. *I served it with sliced london broil the next night.*
12. *You can also substitute chicken for the beef or vegetarians can omit the meat altogether.*

LLM Response (with RAG and after Fine-Tuning; chunking_type=entire_recipe):

Rank 1: Beef With Cabbage and Mushrooms

Rank 1 has been chosen for this recipe because you have 7 out of 12 ingredients in your pantry! Here are the ingredients you still need: mushroom, green cabbage, beef broth, beef broth, ground ginger.

Rank 2: Roasted Mushrooms for a Crowd

Rank 2 has been chosen for this recipe because you have 6 out of 12 ingredients in your pantry! Here are the ingredients you still need: shallots, black pepper, red wine, beef bouillon powder, hot water.

Rank 3: Inspired Steakhouse Mushrooms

Rank 3 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry! Here are the ingredients you still need: green onions, wine, worcestershire sauce, beef broth.

Rank 4: Beefsteak and Mushroom Pie

Rank 4 has been chosen for this recipe because you have 5 out of 10 ingredients in your pantry! Here are the ingredients you still need: bacon, onions, beer, pastry, egg.

Rank 5: Tournedos Au Poivre Et Champignons(Filet Au Poivre W/Mushrooms)

Rank 5 has been chosen for this recipe because you have 3 out of 7 ingredients in your pantry! Here are the ingredients you still need: peppercorn, cognac, mushroom.

Rank 6: Cooked Mushrooms

Rank 6 has been chosen for this recipe because you have 1 out of 2 ingredients in your pantry!
Here are the ingredients you still need: mushroom.

Rank 7: Quick and Easy Mushrooms

Rank 7 has been chosen for this recipe because you have 1 out of 4 ingredients in your pantry!
Here are the ingredients you still need: button mushrooms, beef broth, ketchup.

Rank 8: Mushroom Beef (Low Fat)

Rank 8 has been chosen for this recipe because you have 1 out of 6 ingredients in your pantry!
Here are the ingredients you still need: worcestershire sauce, fresh mushrooms, all-purpose, water, baking potatoes.

Rank 9: Beef and Pasta With Mushroom Sauce and Vegetables

Rank 9 has been chosen for this recipe because you have 2 out of 7 ingredients in your pantry!
Here are the ingredients you still need: water, nutmeg, rotini pasta, sugar snap peas.

Input Prompt with RAG output (chunking_type=sliding_window):

I want to use beef, butter, and mushrooms to cook a recipe.

Here are the ingredients I have available in my pantry: beef, mushrooms, butter, salt, pepper, garlic, onion, olive oil, flour, sugar, soy sauce, tomato paste, oregano, thyme, basil, parsley, paprika, cumin, cinnamon, baking powder, baking soda, eggs, milk, pasta, rice, canned tomatoes, chicken broth, vinegar, honey, mustard, chili powder, cornstarch, brown sugar, bread crumbs, parmesan cheese, bay leaves, lemon, carrots, potatoes, bell peppers, spinach, zucchini, celery, broccoli, cauliflower, peas, green beans, kale.

Possible Recipes:

Recipe: Mushroom Beef (Low Fat)

Recipe Servings: 4.0

Total Time: 6 hours 25 minutes

Ingredients:

- 1 1/2 sirloin tip steaks, 1 Worcestershire sauce, 1 Dijon mustard, 1 fresh mushrooms, 1 all-purpose flour, 2 water, 2 baking potatoes*

Calories: 538.6

Sugar Content: 3.0

Protein Content: 42.7

Instructions:

- 1. In 3 to 3 1/2 quart slow cooker, mix all ingredients except flour, water and potatoes.*
- 2. Cover, cook on low heat 6 to 8 hours.*
- 3. In small bowl, mix flour and water; stir into beef mixture. Increase heat setting to high. Cover; cook 15 to 20 minutes or until thickened.*

4. Meanwhile, pierce potatoes all over with fork. In microwave oven, arrange potatoes in spoke pattern with narrow ends in center. Microwave 12 to 14 minutes, turning once, until tender. Cover, let stand 5 minutes.

5. Split potatoes; mash slightly with fork. Spoon beef and mushroom mixture over potatoes.

Recipe: Beefsteak and Mushroom Pie

Recipe Servings: 8.0

Total Time: 2 hours 30 minutes

Ingredients:

- 2 bacon, 2 butter, 6 onions, 2 mushrooms, 2 tomato paste, 12 flour, 2 beer, 2 grainy mustard, 1 puff pastry, 1 egg

Calories: 490.3

Sugar Content: 2.6

Protein Content: 30.0

Instructions:

1. Cut beef into 1 inch cubes and brown in batches in the vegetable oil over medium high heat.
2. Transfer to bowl with a slotted spoon.
3. Add bacon to pan and cook until crisp.
4. Add to beef.
5. Drain the fat from the pan and melt the butter over medium heat.
6. Add onions and mushrooms; cook for about 15 minutes, until the liquid has evaporated.
7. Stir in tomato paste and cook, stirring, for 2 minutes.
8. Sprinkle with flour and cook, stirring, for 1 minute.
9. Whisk in beer, mustard, salt and pepper until smooth.
10. Return beef mixture with any juices to pan.
11. Cover and bake in 350 oven for 1 hour or until beef is tender.
12. Let cool for 30 minutes and proceed or refrigerate up to one day and reheat.
13. Put mixture into an 8 cup (2 L oval casserole).
14. On floured surface, roll out pastry to fit top of dish plus 1 inch extra.
15. Trim edges.
16. Brush edge of dish with water and centre pastry over filling, gently pressing edges to adhere to the casserole dish.
17. Brush with egg and make 4 slashes for steam vents.
18. Bake in 400 oven for 30 minutes until puffed and golden, about 30 minutes.

Recipe: Garlic Mushrooms

Recipe Servings: 4.0

Total Time: 13 minutes

Ingredients:

- 1/2 beef broth, 1/8 salt, 1 canola oil, 5 mushrooms, NA garlic, 1/4 black pepper, 10 fresh parsley

Calories: 42.9

Sugar Content: 1.5

Protein Content: 3.5

Instructions:

1. Heat oil in a large (nonstick skillet coated with cooking spray.
2. Heat over medium to high heat until hot.
3. Add the mushrooms, red pepper, salt and garlic into the skillet and saute for 3 minutes.
4. Reduce heat to medium and then add the broth and black pepper and cook for 5 minutes.
5. Remove from heat and then sprinkle with parsley.

Recipe: Quick and Easy Mushrooms

Recipe Servings: 10.0

Total Time: 24 hours 30 minutes

Ingredients:

- 2 button mushrooms, 2 beef broth, 2 garlic, 1 hot ketchup

Calories: 217.7

Sugar Content: 12.4

Protein Content: 20.5

Instructions:

1. Puncture sausage with a fork and put in large pot and add water to cover. Boil sausage for at least 10 minutes.
2. drain and rinse sausage.
3. When cool peel off casings and cut into bite size pieces.
4. In a large saucepan mix beef broth, italian seasonings, and garlic and mushrooms.
5. Bring to a boil and let boil for 5 minutes.
6. Add sausage and cook for 5 minutes.
7. Remove from heat and let cool.
8. Let stand overnight in refridgerator.
9. The next day put into large crockpot or roaster and add ketchup.
10. Bring to serving temperature and keep on low heat, Serve.
11. (NOTE-Do not wash mushrooms it will make them watery, just wipe with damp cloth to clean. Leave mushrooms whole, I always look for mushrooms that aren't too large so that I get more and then they are just one bite when they eat them. If you want you can use half beef broth and half beer or wine but you should use at least half the beef broth. I always serve these with toothpicks for a great appetizer..
12. This is really easy to double or even triple just keep equal amounts of sausage and mushrooms.
13. Also if you have leftover sauce after the mushrooms and sausages are gone you can freeze this and use this for your sauce the next time by just adding more mushrooms and sausage. It actually gets better with time.

Recipe: Tournedos Au Poivre Et Champignons(Filet Au Poivre W/Mushrooms)

Recipe Servings: 6.0

Total Time: 1 hour 20 minutes

Ingredients:

- 6 peppercorn, 1/4 butter, 1 1/2 cognac, 3 salt, NA butter, 1 1/2 mushroom, 6 parsley

Calories: 120.2

Sugar Content: 1.3

Protein Content: 2.8

Instructions:

1. Mash peppercorns with a mallet or the back of a heavy pan.
2. Press each side of the fillets into the cracked peppercorns and let the beef stand about an hour to absorb the flavor.
3. Heat the butter and add the beef and sear about 8 minutes per side for rare, 10 for medium, 12 for well done.
4. Remove the steaks to a platter and allow to rest.
5. Add cognac to the pan and heat for just a few seconds and then set ablaze.
6. Option 1: Boil the liquid about a minute then stir in additional butter, salt and cream.
7. Bring to a boil, reduce heat, add mushrooms and saute till mushrooms are soft.
8. Pour over fillets and sprinkle with parsley.
9. Option 2: Skip the cream (but it's better with.

Recipe: Cooked Mushrooms

Recipe Servings: 4.0

Total Time: 13 minutes

Ingredients:

- 1/2 butter, 1 whole mushroom

Calories: 228.4

Sugar Content: 2.3

Protein Content: 3.8

Instructions:

1. Cook the mushrooms in the butter, in a covered saucepan on low heat until done.
2. You can use the butter for omelets or other cooking like vegetables.

Recipe: Beef With Cabbage and Mushrooms

Recipe Servings: 4.0

Total Time: 25 minutes

Ingredients:

- 1 garlic cloves, 4 small mushroom, 1 green cabbage, 1 onion, 4 beef broth, 1 beef broth, 2 cornstarch, 3/4 low sodium soy sauce, 2 ground ginger, 2 sugar, 1/2 pepper, 1/4 salt

Calories: 312.1

Sugar Content: 7.2

Protein Content: 29.0

Instructions:

- 1. In a small bowl whisk together the 3/4 cup beef broth, cornstarch, soy sauce, ginger, sugar, pepper and optional salt; SET ASIDE.*
- 2. In a large skillet or wok, heat oil until hot. Add the flank steak and crushed garlic cloves; saute until almost cooked, about 2 to 3 minutes; remove and set aside.*
- 3. To the hot empty skillet/wok, add the mushrooms, cabbage, sliced onion, and 2 tablespoons beef broth. Cook and stir until tender-crisp, about 4-6 minutes.*
- 4. Pour the set aside soysauce mixture into the skillet with the veggie mixture and cook; stir until thickened, about 2 minutes.*
- 5. Stir in the set aside beef and heat through.*

Recipe: Roasted Mushrooms for a Crowd

Recipe Servings: 10.0

Total Time: 1 hour 10 minutes

Ingredients:

- 5 mushrooms, 8 shallots, 3 garlic cloves, 1 dried thyme, 1 black pepper, 1 red wine, 6 beef bouillon powder, 1 hot water, 2 butter, 2 olive oil, 1/3 dark soy sauce, NA reduced sodium soy sauce*

Calories: 133.4

Sugar Content: 3.9

Protein Content: 7.8

Instructions:

- 1. Preheat oven to 400 degrees F.*
- 2. Place cleaned mushrooms in a large roaster and set aside.*
- 3. In a skillet melt the butter with the oil.*
- 4. Add minced shallots and saute until translucent.*
- 5. Add garlic, pepper, and dried thyme. Saute until fragrant and garlic is softened.*
- 6. Add wine. Bring to a boil, and allow to bubble until some of the alcohol cooks off and the wine reduces a bit.*
- 7. Mix beef bouillon powder, soy sauce and hot water. Add to skillet, stirring well.*
- 8. Allow to simmer for a minute or two to blend flavours.*
- 9. Pour mixture over the mushrooms in the roaster. Cover with the roaster lid.*
- 10. Roast in 400 degree F oven for 20 minutes, then stir. Place back in oven uncovered and roast an additional 20 minutes.*
- 11. Taste the liquid. Moisture from the mushrooms has diluted it some. Season with salt and pepper to taste.*
- 12. If you like you can strain out the mushrooms and reduce the cooking liquid by about half, then pour over the mushrooms in a serving container.*

Recipe: Inspired Steakhouse Mushrooms

Recipe Servings: 4.0

Total Time: 55 minutes

Ingredients:

- 3 green onions, 1/4 onion, 2 garlic cloves, 1/4 butter, 1 fresh mushrooms, 1/4 wine, 1 Worcestershire sauce, 2 beef broth

Calories: 160.5

Sugar Content: 3.5

Protein Content: 5.4

Instructions:

1. Melt butter in a 2-quart saucepan.
2. Saute green onions, diced onions and garlic in butter over a medium flame for about 2 minutes, taking care not to burn the garlic.
3. Add rest of ingredients to pan and simmer uncovered for at least 20 minutes (longer simmering just means more tender and flavorful mushrooms, so I usually let these go for 30-45 minutes while I prep the rest of dinner.

Recipe: Beef and Pasta With Mushroom Sauce and Vegetables

Recipe Servings: 6.0

Total Time: 40 minutes

Ingredients:

- 1 beef, 1 water, 2 nutmeg, 2 bow tie pasta, 1 rotini pasta, 1 sugar snap peas, 4 parmesan cheese

Calories: 906.3

Sugar Content: 2.5

Protein Content: 14.9

Instructions:

1. Cook pasta in a large pot.
2. Strain and run cold water through.
3. Cook beef in large non-stick skillet over medium heat with a little oil for about 5 minutes.
4. Dissolve soup mix in water and add 2 cans mushroom soup to lipton soup mixture and mix.
5. Pour over beef, add nutmeg and mix well.
6. Cover, bring to boil and simmer 10 minutes, stir often.
7. Stir in cooked pasta, mushrooms and peas or your choice of vegetables.
8. (As an alteration, you can cook the pasta in the pot with the beef and soup. Add 3 cups of water instead of 2 and simmer until pasta is cooked, stirring often Cook 10 minutes or until heated through stirring often.
9. Remove from heat and toss with Grated Parmesan cheese.
10. Leftovers can be used as a side dish for the next day's dinner.
11. I served it with sliced london broil the next night.
12. You can also substitute chicken for the beef or vegetarians can omit the meat altogether.

LLM Response (with RAG and after Fine-Tuning; chunking_type=sliding_window):

Rank 1: Beef With Cabbage and Mushrooms

Rank 1 has been chosen for this recipe because you have 7 out of 12 ingredients in your pantry!
Here are the ingredients you still need: mushroom, green cabbage, beef broth, beef broth, ground ginger.

Rank 2: Roasted Mushrooms for a Crowd

Rank 2 has been chosen for this recipe because you have 7 out of 12 ingredients in your pantry!
Here are the ingredients you still need: shallots, black pepper, red wine, bouillon powder, hot water.

Rank 3: Garlic Mushrooms

Rank 3 has been chosen for this recipe because you have 4 out of 7 ingredients in your pantry!
Here are the ingredients you still need: beef broth, canola oil, black pepper.

Rank 4: Tournedos Au Poivre Et Champignons(Filet Au Poivre W/Mushrooms)

Rank 4 has been chosen for this recipe because you have 3 out of 7 ingredients in your pantry!
Here are the ingredients you still need: peppercorn, cognac, mushroom.

Rank 5: Inspired Steakhouse Mushrooms

Rank 5 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry!
Here are the ingredients you still need: green onions, wine, worcestershire sauce, beef broth.

Rank 6: Cooked Mushrooms

Rank 6 has been chosen for this recipe because you have 1 out of 2 ingredients in your pantry!
Here are the ingredients you still need: mushroom.

Rank 7: Mushroom Beef (Low Fat)

Rank 7 has been chosen for this recipe because you have 2 out of 6 ingredients in your pantry!
Here are the ingredients you still need: worcestershire sauce, fresh mushrooms, water, baking potatoes.

Rank 8: Beefsteak and Mushroom Pie

Rank 8 has been chosen for this recipe because you have 4 out of 10 ingredients in your pantry!
Here are the ingredients you still need: bacon, onions, beer, grainy mustard, pastry, egg.

Rank 9: Quick and Easy Mushrooms

Rank 9 has been chosen for this recipe because you have 1 out of 4 ingredients in your pantry!
Here are the ingredients you still need: button mushrooms, beef broth, ketchup.

Rank 10: Beef and Pasta With Mushroom Sauce and Vegetables

Rank 10 has been chosen for this recipe because you have 2 out of 7 ingredients in your pantry! Here are the ingredients you still need: beef, water, nutmeg, rotini pasta, sugar snap peas.

Example 2:

(Base) Input Prompt:

I want to use chicken, celery, and carrots to cook a recipe.

Here are the ingredients I have available in my pantry: chicken, mushrooms, butter, salt, pepper, garlic, onion, olive oil, flour, sugar, soy sauce, tomato paste, oregano, thyme, basil, parsley, paprika, cumin, cinnamon, baking powder, baking soda, eggs, milk, pasta, rice, canned tomatoes, chicken broth, vinegar, honey, mustard, chili powder, cornstarch, brown sugar, bread crumbs, parmesan cheese, bay leaves, lemon, carrots, potatoes, bell peppers, spinach, zucchini, celery, broccoli, cauliflower, peas, green beans, kale.

LLM Response (without RAG and before Fine-Tuning):

You have a fantastic selection of ingredients to work with! Since you mentioned chicken, celery, and carrots, here are a few recipe ideas you can create using your available pantry items:

****Chicken, Celery, and Carrot Recipes:****

1. Creamy Chicken and Vegetable Soup:
 - a. ****Ingredients:**** Chicken, celery, carrots, potatoes, onion, garlic, butter, olive oil, flour, chicken broth, milk, salt, pepper, parsley, bay leaves
 - b. ****Instructions:**** Sauté onion and garlic in butter and olive oil. Add diced chicken, celery, carrots, and potatoes. Cook until softened. Stir in flour, then slowly add chicken broth and milk. Simmer until vegetables are tender. Season with salt, pepper, parsley, and bay leaves.
2. Chicken and Vegetable Stir-Fry:
 - a. ****Ingredients:**** Chicken, celery, carrots, broccoli, bell peppers, onion, garlic, soy sauce, ginger (if you have some), cornstarch, olive oil, sesame oil (optional)
 - b. ****Instructions:**** Marinate chicken in soy sauce, ginger, and cornstarch. Stir-fry chicken in hot oil until cooked through. Add diced vegetables, and stir-fry until crisp-tender. Season with salt and pepper.
3. Chicken, Celery, and Carrot Curry:
 - a. ****Ingredients:**** Chicken, celery, carrots, onion, garlic, ginger (if you have some), curry powder, tomato paste, coconut milk (or cream), chicken broth, salt, pepper, cilantro (optional)
 - b. ****Instructions:**** Sauté onion, garlic, and ginger in oil. Add chicken and cook until browned. Stir in curry powder, tomato paste, and coconut milk. Add chicken broth

and simmer until chicken is cooked through and sauce has thickened. Add diced celery and carrots, and cook until tender. Garnish with cilantro.

4. Roasted Chicken with Carrots and Celery:

- a. ****Ingredients:**** Chicken, celery, carrots, onion, garlic, olive oil, salt, pepper, thyme, rosemary, lemon
- b. ****Instructions:**** Preheat oven to 400°F. Combine diced celery and carrots with olive oil, salt, pepper, thyme, and rosemary. Arrange vegetables around chicken in a roasting pan. Roast until chicken is cooked through and vegetables are tender. Serve with a squeeze of lemon juice.

****Tips:****

- ****Adjust seasonings:**** Feel free to add more of your favorite spices to any of these recipes.
- ****Get creative:**** Use your other available ingredients to add more flavor and texture to your dishes. For example, you could add mushrooms to the soup, or spinach to the stir-fry.
- ****Leftovers:**** Any of these recipes can be easily made in advance and reheated.

Enjoy experimenting with your pantry ingredients!

Input Prompt with RAG output (chunking_type=entire_recipe):

I want to use chicken, celery, and carrots to cook a recipe.

Here are the ingredients I have available in my pantry: chicken, mushrooms, butter, salt, pepper, garlic, onion, olive oil, flour, sugar, soy sauce, tomato paste, oregano, thyme, basil, parsley, paprika, cumin, cinnamon, baking powder, baking soda, eggs, milk, pasta, rice, canned tomatoes, chicken broth, vinegar, honey, mustard, chili powder, cornstarch, brown sugar, bread crumbs, parmesan cheese, bay leaves, lemon, carrots, potatoes, bell peppers, spinach, zucchini, celery, broccoli, cauliflower, peas, green beans, kale.

Possible Recipes:

Recipe: Carrot, Chickpea, Celery, and Cilantro Salad

Recipe Servings: 6.0

Total Time: 25 minutes

Ingredients:

- 2 carrots, 1 chickpeas, 1 garbanzo beans, 2 celery, 2 lemon juice, 1/2 olive oil, 1/4 lemon-pepper seasoning, 1/2 salt

Calories: 116.6

Sugar Content: 2.1

Protein Content: 4.0

Instructions:

- 1. Steam carrots for 5-6 minutes or until crisp-tender; immediately place in bowl of ice water.*
- 2. Combine chickpeas and celery in separate bowl, then drain carrots and add to chickpea mixture.*
- 3. Whisk lemon juice, oil, lemon-pepper, and salt together in small bowl.*
- 4. Pour over carrot mixture, tossing to coat; cover and chill at least 4 hours, and stir in cilantro just before serving.*

Recipe: Carrot, Onion and Celery Soup by ME!

Recipe Servings: 8.0

Total Time: 1 hour 20 minutes

Ingredients:

- 1 sweet onion, 1 celery, 1 butter, 2 dried tarragon, 1 vegetable broth, 2 chicken broth, 3 dry white wine*

Calories: 88.8

Sugar Content: 2.5

Protein Content: 5.2

Instructions:

- 1. Slice the carrots fine, mince the onion, slice the celery thin.*
- 2. In a big pot saute the onion in butter until softened.*
- 3. Stir in the carrot, celery and tarragon.*
- 4. Add broth and wine.*
- 5. Bring to a boil.*
- 6. Simmer until done.*

Recipe: Winter Warmer Carrot, Celery and Potato Soup

Recipe Servings: 2.0

Total Time: 40 minutes

Ingredients:

- 1 carrot, 1 onion, 1 celery, 1 paprika, 2 ground cumin, 1/2 turmeric powder, 1/2 milk, 1/2 cilantro*

Calories: 260.7

Sugar Content: 14.2

Protein Content: 7.0

Instructions:

- 1. Heat the vegetable oil.*
- 2. Saute the onions till soft.*
- 3. Add the celery and the potato.*
- 4. Saute for a minute or so.*
- 5. Add the carrots.*

6. Lower the heat and cook covered for 10 minutes. Keep stirring every 3-4 minutes so that it doesn't stick to the pot.
7. Add the 2 cups of vegetable stock.
8. Add the herbs rubbing them between your fingers to make the more fragrant.
9. Stir in the cumin, turmeric and paprika.
10. Bring to a boil and cook for 10 minutes more.
11. Let it cool then blend it in a blender or food processer.
12. Stir in the milk.
13. Add salt and pepper to taste.

Recipe: Margaret's Casserole Carrots

Recipe Servings: 6.0

Total Time: 1 hour 15 minutes

Ingredients:

- 2 carrots, 3 butter, 3 margarine, 3/4 all-purpose flour, 1/2 dry mustard, 1/4 salt, 1/8 paprika, 3 pepper, 1/4 parmesan cheese, 1/2 parmesan cheese

Calories: 256.1

Sugar Content: 13.5

Protein Content: 10.7

Instructions:

1. Peel Carrots; slice crosswise on the bias.
2. Cook, covered, in boiling salted water, until just tender, about twenty minutes.
3. Drain thoroughly (this is really important.
4. Set aside.
5. In a medium saucepan melt butter,blend in flour, dry mustard, salt, paprika and pepper.
6. Add milk all at once.
7. Cook and stir until thickened and bubbly (This requires a bit of time.
8. Stir in 1/4 cup of the grated parmesan cheese.
9. Combine cooked carrots and sauce.
10. Turn into a one and a half quart casserole dish.
11. Bake, covered, at 350 degrees for 30 minutes.
12. Uncover, and sprinkle with up to one half cup of additional parmesan cheese (depending on your taste.
13. Bake,uncovered, for five more minutes or until desired browning is achieved.

Recipe: Celery & Cabbage Bake

Recipe Servings: 4.0

Total Time: 51 minutes

Ingredients:

- 4 cabbage, 1 cheddar cheese, 3 celery, 1/2 beer, 1 caraway seed, 2 milk, 2 butter, 1/2 flour

Calories: 307.5

Sugar Content: 4.1

Protein Content: 14.4

Instructions:

- 1. Bring water to boil in large pot.*
- 2. Add cabbage, celery, salt& caraway.*
- 3. Boil 5 minutes, drain well.*
- 4. Sauce: melt butter, add flour& cook, stirring 1 minute.*
- 5. Slowly add milk in stream, stirring continuously till sauce is smooth& thick.*
- 6. Add beer& continue stirring till foam disappears.*
- 7. Cook till heated through.*
- 8. Add cheddar, stir till melted.*
- 9. Season sauce with salt& pepper.*
- 10. Transfer to buttered 2 quart casserole and pour sauce over.*
- 11. Heat at 350 degrees for 30 minutes.*
- 12. Can add chunks of cooked ham or corned beef to vegetables.*

Recipe: Carrot and Cauliflower Medley

Recipe Servings: 8.0

Total Time: 30 minutes

Ingredients:

- 8 carrots, 1 cauliflower, 2 butter, 2 flour, 1/2 prepared mustard, 1 chicken broth, 1/2 swiss cheese, 1 1/2 green onions*

Calories: 210.0

Sugar Content: 5.0

Protein Content: 8.7

Instructions:

- 1. Cut carrots 1/4 inch slanting slices (approx 4 cups and break cauliflower into flowerlets. Cook in boiling salted water 10 mins til tender. Plunge into cold water.*
- 2. Melt butter, mix in flour and mustard. Cook til bubbly. Remove from heat and add chicken broth and cream.*
- 3. Cook, stirring til thickened.*
- 4. Gradually add 1 cup of cheese, stirring til melted.*
- 5. Combine veggies and sauce in 2 qt casserole. Sprinkle with remaining cheese. Bake 350 15 mins (35 mins if chilled before baking.*

Recipe: Carrots and Celery Tarragon

Recipe Servings: 8.0

Total Time: 30 minutes

Ingredients:

- 6 butter, 2 water, 6 carrots, 3 celery ribs, 1 garlic clove, 2 tarragon, 1/4 black pepper, 1/8 salt*

Calories: 99.3

Sugar Content: 2.4

Protein Content: 0.8

Instructions:

- 1. In a large skillet, melt butter over medium heat.*
- 2. Add all remaining ingredients.*
- 3. Reduce heat to medium-low; cover and cook (stirring occasionally for about 20 minutes or until veggies are to your desired tenderness.*

Recipe: Carrot Casserole

Recipe Servings: 6.0

Total Time: 50 minutes

Ingredients:

- 4 carrots, 10 3/4 onion, 1 cheddar cheese, 1 butter*

Calories: 198.4

Sugar Content: 4.6

Protein Content: 6.2

Instructions:

- 1. Combine first 5 ingredients.*
- 2. Place in a 1 1/2 quart baking dish.*
- 3. Bake at 350°F for 25 minutes.*
- 4. Remove and sprinkle with the fried onions.*
- 5. Put back in oven for 2-3 minutes until onions start to brown.*

Recipe: A Bit of Chicken, Lemon, Squash & Leek Rice

Recipe Servings: 2.0

Total Time: 1 hour 25 minutes

Ingredients:

- 6 chicken drumsticks, 3 garlic cloves, 1 onion, 100 bacon, 2 squash, 1 leek, 1 celery, 3/4 arborio rice, 2 thyme, 1 1/2 lemons, 1/2 dry white wine, 1 1/2 bay leaves, 2 lemon, 1/2 parmesan cheese, 2 fresh ground black pepper*

Calories: 1029.7

Sugar Content: 8.4

Protein Content: 59.4

Instructions:

- 1. Heat the oven to 180 degrees Celsius.*
- 2. Heat a stovetop to oven pan on medium heat. Once heated, add the oil.*
- 3. Put the drumsticks in the pan & brown on all sides. Remove from the pan.*
- 4. Add the squash & saute for 3 minutes or until just starting to soften.*
- 5. Add the celery, leek, onion & garlic & saute for 5 minutes. Add the bacon & fry for a further 2 minutes.*
- 6. Add the rice & thyme & saute for 1 minute.*

7. Add the wine, stock & lemons and stir to combine. Add the chicken & stir again. Try to make sure that all of the rice is immersed in the liquid.
8. Put into the oven & bake for 1 hour, or until the rice & chicken is cooked. Stir every so often during cooking.
9. Garnish with the lemon & parmesan & grind over some fresh black pepper.

Recipe: One Pot Creamy Noodles With Chicken and Broccoli

Recipe Servings: 4.0

Total Time: 35 minutes

Ingredients:

- 2 boneless chicken breasts, 4 onion, 1 garlic, 1 broccoli florets, 3 sour cream, 3 fresh parsley

Calories: 581.6

Sugar Content: 4.2

Protein Content: 31.2

Instructions:

1. In large stock pot, heat oil over medium high heat. Add chicken pieces, onion and garlic; saute for 6 minutes or until chicken is no longer pink inside. Transfer chicken mixture to bowl and set aside.
2. Add stock to frypan. Cover and increase heat to high; bring to a boil. Add noodles and boil, uncovered for 6 minutes, stirring occasionally. Add broccoli and reduce heat to medium; cover partially and cook for 2 - 3 minutes or until noodles are tender and broccoli is cooked, stirring occasionally.
3. Remove about 2 T of liquid from pot and discard.
4. Reduce heat to low. Stir in sour cream. Return chicken mixture to pot; stir and heat through. Add salt and pepper to taste.
5. Options: The veggies are inter-changeable. I have used red bell peppers, mushrooms, snap peas instead of the broccoli -- or you can use a mixture of all.

LLM Response (with RAG and after Fine-Tuning; (chunking_type=entire_recipe)):

Rank 1: Margaret's Casserole Carrots

Rank 1 has been chosen for this recipe because you have 7 out of 10 ingredients in your pantry! Here are the ingredients you still need: margarine, all-purpose flour.

Rank 2: Carrot and Cauliflower Medley

Rank 2 has been chosen for this recipe because you have 6 out of 8 ingredients in your pantry! Here are the ingredients you still need: swiss cheese, green onions.

Rank 3: Carrot Casserole

Rank 3 has been chosen for this recipe because you have 3 out of 4 ingredients in your pantry! Here are the ingredients you still need: cheddar cheese.

Rank 4: Carrots and Celery Tarragon

Rank 4 has been chosen for this recipe because you have 5 out of 8 ingredients in your pantry!
Here are the ingredients you still need: water, tarragon, black pepper.

Rank 5: Winter Warmer Carrot, Celery and Potato Soup

Rank 5 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry!
Here are the ingredients you still need: carrot, ground cumin, turmeric powder, cilantro.

Rank 6: Celery & Cabbage Bake

Rank 6 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry!
Here are the ingredients you still need: cabbage, cheddar cheese, beer, caraway seed.

Rank 7: Carrot, Onion and Celery Soup by ME!

Rank 7 has been chosen for this recipe because you have 3 out of 7 ingredients in your pantry!
Here are the ingredients you still need: sweet onion, tarragon, vegetable broth, white wine.

Rank 8: A Bit of Chicken, Lemon, Squash & Leek Rice

Rank 8 has been chosen for this recipe because you have 8 out of 14 ingredients in your pantry!
Here are the ingredients you still need: bacon, arborio rice, lemons, white wine, ground black pepper.

Rank 9: One Pot Creamy Noodles With Chicken and Broccoli

Rank 9 has been chosen for this recipe because you have 3 out of 6 ingredients in your pantry!
Here are the ingredients you still need: chicken breasts, broccoli florets, sour cream.

Rank 10: Carrot, Chickpea, Celery, and Cilantro Salad

Rank 10 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry!
Here are the ingredients you still need: chickpeas, garbanzo beans, lemon juice, lemon-pepper seasoning.

Input Prompt with RAG output (chunking_type=sliding_window):

I want to use chicken, celery, and carrots to cook a recipe.

Here are the ingredients I have available in my pantry: chicken, mushrooms, butter, salt, pepper, garlic, onion, olive oil, flour, sugar, soy sauce, tomato paste, oregano, thyme, basil, parsley, paprika, cumin, cinnamon, baking powder, baking soda, eggs, milk, pasta, rice, canned tomatoes, chicken broth, vinegar, honey, mustard, chili powder, cornstarch, brown sugar, bread crumbs, parmesan cheese, bay leaves, lemon, carrots, potatoes, bell peppers, spinach, zucchini, celery, broccoli, cauliflower, peas, green beans, kale.

Possible Recipes:

Recipe: Carrot, Chickpea, Celery, and Cilantro Salad

Recipe Servings: 6.0

Total Time: 25 minutes

Ingredients:

- 2 carrots, 1 chickpeas, 1 garbanzo beans, 2 celery, 2 lemon juice, 1/2 olive oil, 1/4 lemon-pepper seasoning, 1/2 salt

Calories: 116.6

Sugar Content: 2.1

Protein Content: 4.0

Instructions:

1. Steam carrots for 5-6 minutes or until crisp-tender; immediately place in bowl of ice water.
2. Combine chickpeas and celery in separate bowl, then drain carrots and add to chickpea mixture.
3. Whisk lemon juice, oil, lemon-pepper, and salt together in small bowl.
4. Pour over carrot mixture, tossing to coat; cover and chill at least 4 hours, and stir in cilantro just before serving.

Recipe: Carrot, Onion and Celery Soup by ME!

Recipe Servings: 8.0

Total Time: 1 hour 20 minutes

Ingredients:

- 1 sweet onion, 1 celery, 1 butter, 2 dried tarragon, 1 vegetable broth, 2 chicken broth, 3 dry white wine

Calories: 88.8

Sugar Content: 2.5

Protein Content: 5.2

Instructions:

1. Slice the carrots fine, mince the onion, slice the celery thin.
2. In a big pot saute the onion in butter until softened.
3. Stir in the carrot, celery and tarragon.
4. Add broth and wine.
5. Bring to a boil.
6. Simmer until done.

Recipe: Winter Warmer Carrot, Celery and Potato Soup

Recipe Servings: 2.0

Total Time: 40 minutes

Ingredients:

- 1 carrot, 1 onion, 1 celery, 1 paprika, 2 ground cumin, 1/2 turmeric powder, 1/2 milk, 1/2 cilantro

Calories: 260.7

Sugar Content: 14.2

Protein Content: 7.0

Instructions:

- 1. Heat the vegetable oil.*
- 2. Saute the onions till soft.*
- 3. Add the celery and the potato.*
- 4. Saute for a minute or so.*
- 5. Add the carrots.*
- 6. Lower the heat and cook covered for 10 minutes. Keep stirring every 3-4 minutes so that it doesn't stick to the pot.*
- 7. Add the 2 cups of vegetable stock.*
- 8. Add the herbs rubbing them between your fingers to make the more fragrant.*
- 9. Stir in the cumin, turmeric and paprika.*
- 10. Bring to a boil and cook for 10 minutes more.*
- 11. Let it cool then blend it in a blender or food processer.*
- 12. Stir in the milk.*
- 13. Add salt and pepper to taste.*

Recipe: Margaret's Casserole Carrots

Recipe Servings: 6.0

Total Time: 1 hour 15 minutes

Ingredients:

- 2 carrots, 3 butter, 3 margarine, 3/4 all-purpose flour, 1/2 dry mustard, 1/4 salt, 1/8 paprika, 3 pepper, 1/4 parmesan cheese, 1/2 parmesan cheese*

Calories: 256.1

Sugar Content: 13.5

Protein Content: 10.7

Instructions:

- 1. Peel Carrots; slice crosswise on the bias.*
- 2. Cook, covered, in boiling salted water, until just tender, about twenty minutes.*
- 3. Drain thoroughly (this is really important.*
- 4. Set aside.*
- 5. In a medium saucepan melt butter,blend in flour, dry mustard, salt, paprika and pepper.*
- 6. Add milk all at once.*
- 7. Cook and stir until thickened and bubbly (This requires a bit of time.*
- 8. Stir in 1/4 cup of the grated parmesan cheese.*
- 9. Combine cooked carrots and sauce.*
- 10. Turn into a one and a half quart casserole dish.*
- 11. Bake, covered, at 350 degrees for 30 minutes.*
- 12. Uncover, and sprinkle with up to one half cup of additional parmesan cheese (depending on your taste.*

13. Bake,uncovered, for five more minutes or until desired browning is achieved.

Recipe: Celery & Cabbage Bake

Recipe Servings: 4.0

Total Time: 51 minutes

Ingredients:

- 4 cabbage, 1 cheddar cheese, 3 celery, 1/2 beer, 1 caraway seed, 2 milk, 2 butter, 1/2 flour

Calories: 307.5

Sugar Content: 4.1

Protein Content: 14.4

Instructions:

1. Bring water to boil in large pot.
2. Add cabbage, celery, salt& caraway.
3. Boil 5 minutes, drain well.
4. Sauce: melt butter, add flour& cook, stirring 1 minute.
5. Slowly add milk in stream, stirring continuously till sauce is smooth& thick.
6. Add beer& continue stirring till foam disappears.
7. Cook till heated through.
8. Add cheddar, stir till melted.
9. Season sauce with salt& pepper.
10. Transfer to buttered 2 quart casserole and pour sauce over.
11. Heat at 350 degrees for 30 minutes.
12. Can add chunks of cooked ham or corned beef to vegetables.

Recipe: Carrot and Cauliflower Medley

Recipe Servings: 8.0

Total Time: 30 minutes

Ingredients:

- 8 carrots, 1 cauliflower, 2 butter, 2 flour, 1/2 prepared mustard, 1 chicken broth, 1/2 swiss cheese, 1 1/2 green onions

Calories: 210.0

Sugar Content: 5.0

Protein Content: 8.7

Instructions:

1. Cut carrots 1/4 inch slanting slices (approx 4 cups and break cauliflower into flowerlets. Cook in boiling salted water 10 mins til tender. Plunge into cold water.
2. Melt butter, mix in flour and mustard. Cook til bubbly. Remove from heat and add chicken broth and cream.
3. Cook, stirring til thickened.
4. Gradually add 1 cup of cheese, stirring til melted.

5. Combine veggies and sauce in 2 qt casserole. Sprinkle with remaining cheese. Bake 350 15 mins (35 mins if chilled before baking).

Recipe: Carrots and Celery Tarragon

Recipe Servings: 8.0

Total Time: 30 minutes

Ingredients:

- 6 butter, 2 water, 6 carrots, 3 celery ribs, 1 garlic clove, 2 tarragon, 1/4 black pepper, 1/8 salt

Calories: 99.3

Sugar Content: 2.4

Protein Content: 0.8

Instructions:

1. In a large skillet, melt butter over medium heat.
2. Add all remaining ingredients.
3. Reduce heat to medium-low; cover and cook (stirring occasionally for about 20 minutes or until veggies are to your desired tenderness).

Recipe: Carrot Casserole

Recipe Servings: 6.0

Total Time: 50 minutes

Ingredients:

- 4 carrots, 10 3/4 onion, 1 cheddar cheese, 1 butter

Calories: 198.4

Sugar Content: 4.6

Protein Content: 6.2

Instructions:

1. Combine first 5 ingredients.
2. Place in a 1 1/2 quart baking dish.
3. Bake at 350°F for 25 minutes.
4. Remove and sprinkle with the fried onions.
5. Put back in oven for 2-3 minutes until onions start to brown.

Recipe: A Bit of Chicken, Lemon, Squash & Leek Rice

Recipe Servings: 2.0

Total Time: 1 hour 25 minutes

Ingredients:

- 6 chicken drumsticks, 3 garlic cloves, 1 onion, 100 bacon, 2 squash, 1 leek, 1 celery, 3/4 arborio rice, 2 thyme, 1 1/2 lemons, 1/2 dry white wine, 1 1/2 bay leaves, 2 lemon, 1/2 parmesan cheese, 2 fresh ground black pepper

Calories: 1029.7

Sugar Content: 8.4

Protein Content: 59.4

Instructions:

- 1. Heat the oven to 180 degrees Celsius.*
- 2. Heat a stovetop to oven pan on medium heat. Once heated, add the oil.*
- 3. Put the drumsticks in the pan & brown on all sides. Remove from the pan.*
- 4. Add the squash & saute for 3 minutes or until just starting to soften.*
- 5. Add the celery, leek, onion & garlic & saute for 5 minutes. Add the bacon & fry for a further 2 minutes.*
- 6. Add the rice & thyme & saute for 1 minute.*
- 7. Add the wine, stock & lemons and stir to combine. Add the chicken & stir again. Try to make sure that all of the rice is immersed in the liquid.*
- 8. Put into the oven & bake for 1 hour, or until the rice & chicken is cooked. Stir every so often during cooking.*
- 9. Garnish with the lemon & parmesan & grind over some fresh black pepper.*

Recipe: One Pot Creamy Noodles With Chicken and Broccoli

Recipe Servings: 4.0

Total Time: 35 minutes

Ingredients:

- 2 boneless chicken breasts, 4 onion, 1 garlic, 1 broccoli florets, 3 sour cream, 3 fresh parsley*

Calories: 581.6

Sugar Content: 4.2

Protein Content: 31.2

Instructions:

- 1. In large stock pot, heat oil over medium high heat. Add chicken pieces, onion and garlic; saute for 6 minutes or until chicken is no longer pink inside. Transfer chicken mixture to bowl and set aside.*
- 2. Add stock to frypan. Cover and increase heat to high; bring to a boil. Add noodles and boil, uncovered for 6 minutes, stirring occasionally. Add broccoli and reduce heat to medium; cover partially and cook for 2 - 3 minutes or until noodles are tender and broccoli is cooked, stirring occasionally.*
- 3. Remove about 2 T of liquid from pot and discard.*
- 4. Reduce heat to low. Stir in sour cream. Return chicken mixture to pot; stir and heat through. Add salt and pepper to taste.*
- 5. Options: The veggies are inter-changeable. I have used red bell peppers, mushrooms, snap peas instead of the broccoli -- or you can use a mixture of all.*

LLM Response (with RAG and after Fine-Tuning; chunking_type=sliding_window):

Rank 1: Carrot and Cauliflower Medley

Rank 1 has been chosen for this recipe because you have 6 out of 8 ingredients in your pantry!
Here are the ingredients you still need: swiss cheese, green onions.

Rank 2: Margaret's Casserole Carrots

Rank 2 has been chosen for this recipe because you have 7 out of 10 ingredients in your pantry!
Here are the ingredients you still need: margarine, all-purpose, parmesan cheese.

Rank 3: Carrot Casserole

Rank 3 has been chosen for this recipe because you have 3 out of 4 ingredients in your pantry!
Here are the ingredients you still need: cheddar cheese.

Rank 4: Carrots and Celery Tarragon

Rank 4 has been chosen for this recipe because you have 5 out of 8 ingredients in your pantry!
Here are the ingredients you still need: water, tarragon, black pepper.

Rank 5: One Pot Creamy Noodles With Chicken and Broccoli

Rank 5 has been chosen for this recipe because you have 4 out of 6 ingredients in your pantry!
Here are the ingredients you still need: chicken breasts, sour cream.

Rank 6: Carrot, Chickpea, Celery, and Cilantro Salad

Rank 6 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry!
Here are the ingredients you still need: chickpeas, garbanzo beans, lemon juice, lemon-pepper seasoning.

Rank 7: Celery & Cabbage Bake

Rank 7 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry!
Here are the ingredients you still need: cabbage, cheddar cheese, beer, caraway seed.

Rank 8: Winter Warmer Carrot, Celery and Potato Soup

Rank 8 has been chosen for this recipe because you have 4 out of 8 ingredients in your pantry!
Here are the ingredients you still need: carrot, ground cumin, turmeric powder, cilantro.

Rank 9: Carrot, Onion and Celery Soup by ME!

Rank 9 has been chosen for this recipe because you have 3 out of 7 ingredients in your pantry!
Here are the ingredients you still need: sweet onion, tarragon, vegetable broth, white wine.

Rank 10: A Bit of Chicken, Lemon, Squash & Leek Rice

Rank 10 has been chosen for this recipe because you have 8 out of 15 ingredients in your pantry!
Here are the ingredients you still need: bacon, squash, arborio rice, lemons, white wine, fresh ground black pepper.