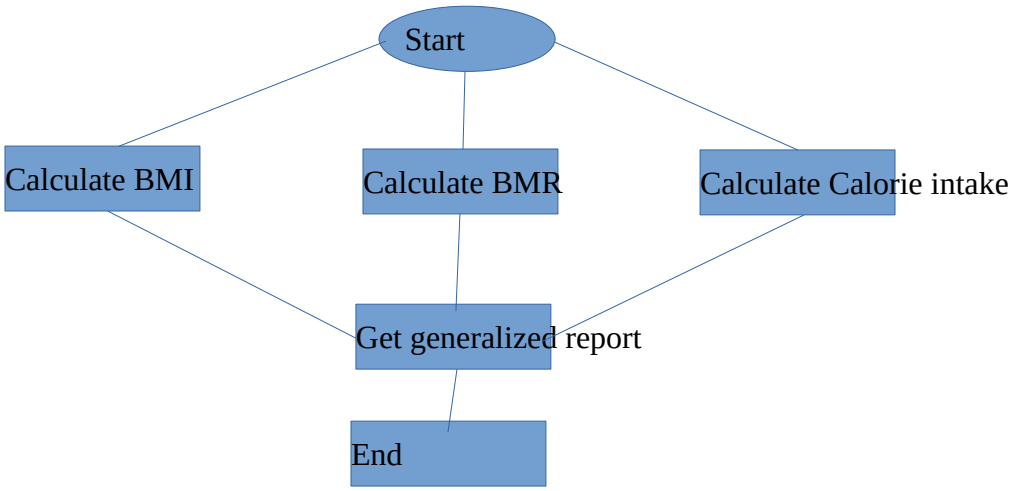
LangGraph parallel flow:

General note: Never go for the latest version of libraries

LangGraph is easy, we need to know the workflow and control the inside logic

If we are restricted to do certain tasks in sequence, then we don’t have a choice. Can we do certain tasks in parallel?

health-report.py



why we are doing calculations in parallel? Because all these calculations can be done individually on the state.

Output

{'age': 35, 'weight': 83.0, 'height': 183.0, 'activity_level': 'moderate', 'bmi_feedback': "BMI (Body Mass Index) is a measure used to determine if a person has a healthy body weight for a given height. It is calculated by dividing a person's weight in kilograms by the square of their height in meters. A BMI between 18.5 and 24.9 is considered normal, suggesting a healthy weight. Beyond this range, individuals may be classified as underweight, overweight, or obese, indicating potential health risks.", 'bmr_feedback': 'The Basal Metabolic Rate (BMR) is an estimate of how many calories your body would burn if you were at rest all day. It is a crucial metric for understanding the minimum calorie intake needed to maintain basic physiological functions such as breathing, circulation, and cell production. BMR varies based on several factors, including age, weight, height, and sex.', 'calories_feedback': "This estimate is based on the Mifflin-St Jeor Equation and considers the person's Basal Metabolic Rate (BMR) combined with their activity level. Given: Age = 35 years, Weight = 83 kg, Height = 183 cm, Activity Level = Moderate (1.55 activity factor). Formula: BMR = (10 x weight [kg]) + (6.25 x height [cm]) - (5 x age [years]) + 5, BMR = (10 x 83) + (6.25 x 183) - (5 x 35) + 5, BMR = 1905.25 calories/day. Adjusting for moderate activity (i.e., typical occupational walking and office work): Daily Calorie Needs = BMR x Activity Factor, 2843.45 calories/day.", 'overall_report': '**Comprehensive Health Report**\n\n**1. Body Mass Index (BMI) Analysis:**\n\n- **BMI Calculation:**\n - BMI = Weight (kg) / (Height (m))²\n - Height in meters = 183 cm / 100 = 1.83 m\n - BMI = 83 kg / (1.83 m)² = 24.77\n\n- **BMI Interpretation:**\n - With a BMI of 24.77, you are classified within the "normal" weight range, which is between 18.5 and 24.9. This suggests that your

weight is generally considered healthy for your height, and you are likely at a reduced risk of conditions often associated with being overweight or underweight.\n\n**2. Basal Metabolic Rate (BMR) Evaluation:**\n\n- **BMR Calculation:**\n - Formula: BMR = (10 x Weight [kg]) + (6.25 x Height [cm]) - (5 x Age [years]) + 5\n - BMR = (10 x 83) + (6.25 x 183) - (5 x 35) + 5 = 1905.25 calories/day\n\n- **BMR Interpretation:**\n - Your BMR of 1905.25 calories/day represents the number of calories your body requires at rest to maintain essential physiological functions. This includes activities such as breathing, circulation, and cell production. Understanding your BMR is vital for establishing a baseline for caloric needs.\n\n**3. Daily Caloric Needs:**\n\n- **Calorie Calculation:**\n - The Mifflin-St Jeor Equation provides a reliable estimate of daily caloric needs based on your BMR and activity level.\n - Activity Level = Moderate (Activity Factor: 1.55)\n - Daily Calorie Needs = BMR x Activity Factor\n - Daily Calorie Needs = 1905.25 x 1.55 = 2953.14 calories/day\n\n- **Calorie Needs Interpretation:**\n - To maintain your current weight and support your daily activities — which involve a moderate level of activity like typical workplace activities combined with regular physical movement — you require approximately 2953 calories per day. Adjusting your intake above or below this level can result in weight gain or loss, respectively.\n\n**Overall Health Recommendations:**\n\n- **Weight Management:**\n - Maintaining a BMI within the normal range is beneficial for overall health. Your current BMI suggests that you are at a healthy weight. Continue balancing your caloric intake with your energy expenditure to maintain this.\n\n- **Diet and Nutrition:**\n - Aim for a balanced diet that includes a variety of nutrients: proteins, carbohydrates, healthy fats, vitamins, a*Calorie Calculation:**\n - The Mifflin-St Jeor Equation provides a reliable estimate of daily caloric needs based on your BMR and activity level.\n - Activity Level = Moderate (Activity Factor: 1.55)\n - Daily Calorie Needs = BMR x Activity Factor\n - Daily Calorie Needs = 1905.25 x 1.55 = 2953.14 calories/day\n\n- **Calorie Needs Interpretation:**\n - To maintain your current weight and support your daily activities — which involve a moderate level of activity like typical workplace activities combined with regular physical movement — you require approximately 2953 calories per day. Adjusting your intake above or below this level can result in weight gain or loss, respectively.\n\n**Overall Health Recommendations:**\n\n- **Weight Managemenn - Daily Calorie Needs = 1905.25 x 1.55 = 2953.14 calories/day\n\n- **Calorie Needs Interpretation:**\n - To maintain your current weight and support your daily activities — which involve a moderate level of activity like typical workplace activitiecurrent weight and support your daily activities — which involve a moderate level of activity like typical workplace activities combined with regular physical movement — you require approximately 2953 calories per day. Adjusting your intake above or below this level can result in weight gain or loss, respectively.\n\n**Overall Health Recommendations:**\n\n- **Weight Management:**\n - Maintaining a BMI within the normal range is beneficial for overall health. Your current BMI suggests that you are at a healthy weight. Continue balancing your caloric intake with your energy expenditure to maintain this.\n\n- **Diet and Nutrition:**\n - Aim for a balanced diet that includes a variety of nutrients: proteins, carbohydrates, healthy fats, vitamins, and minerals. Incorporating fruits, vegetables, whole grains, and lean proteins can support your energy levels and overall well-being.\n\n- **Exercise and Physical Activity:**\n - Staying physically active is crucial for maintaining a healthy weight and supporting cardiovascular health. Aim for at least 150 minutes of moderate aerobic activity, such as brisk walking or cycling, each week, along with muscle-strengthening activities on two or more days a week.\n\n- **Regular Health Check-ups:**\n - Continuing regular medical check-ups can help monitor key health indicators like blood pressure, cholesterol levels, and other vital signs. These checks are important for catching potential health issues early.\n\nBy regularly assessing and adjusting your dietary habits and physical activity levels, you can maintain good health and prevent lifestyle-related health issues. Always consider consulting healthcare professionals for personalized advice tailored to your specific health needs and goals.', 'individual_values': [24.77, 1877.1, 2843.45]}

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