Scenario Overview:

Business Context:
You are a data analyst at **Healthy Poultry Farms**, a research facility specializing in developing high-quality feed supplements for chickens. The farm wants to evaluate the effectiveness of various feed types on chicken growth. A research study was conducted using different feed supplements, and chicken weights were recorded at the end of a set period.

The dataset `chickwts` has the following columns:

- **`weight`**: Final weight of each chicken (in grams).
- **`feed`**: Type of feed supplement used (e.g., 'horsebean', 'linseed', 'soybean', etc.).

Each row in the dataset represents a unique chicken, its weight, and the feed type it consumed. The objective is to analyze the data to answer key research questions about the relationship between feed types and chicken weights, including determining which feeds are most effective for weight gain and whether any significant weight differences exist between groups.

Scenario Details:

You are asked to provide a detailed report answering the following questions using SQL queries. This will require various data aggregation techniques, such as grouping data, using aggregate functions, applying filtering conditions, and performing subqueries.

Questions to Be Answered:

1. **Which feed type resulted in the highest average chicken weight?**
2. **Which feed types have more than 5 chickens weighing over 300 grams?**
3. **What is the total weight and the percentage contribution of each feed type to the overall chicken weight?**
4. **Which feed type has the lowest variability in chicken weights?**
5. **Find the feed type that has the most consistent performance by checking the proportion of chickens within ±10% of the mean weight of that feed group.**
6. **For feed types with an average weight above the overall mean, what is the average weight gain per chicken?**