# Potential Failures in implied\_futures\_calculator.py

1. Database Connection Issues:  
 - The database connection may fail due to incorrect DB\_CONFIG, network issues, or if the database server is down. If the database connection is not established properly, all queries and subsequent data fetching will fail, causing the script to terminate with an error.

2. Empty or Incorrect Data:  
 - If the fetch\_data\_from\_db function retrieves empty data or if the data structure doesn't match expectations (e.g., missing columns like timestamp or expiry), this will cause errors during data processing.

3. Incorrect Expiry Calculation:  
 - The get\_nearest\_expiry and get\_monthly\_expiry functions might return None if there are no valid future expiries

4. Date Mismatch:  
 - If the trading\_day or expiry dates are not properly formatted or if there's a mismatch in date formats (e.g., datetime vs. str

5. Data Type Mismatch:  
 - Any unexpected data type in the DataFrames (e.g., str instead of int for strike prices) might cause type-related errors during operations such as filtering or mathematical calculations.

6. Forward Fill Operations:  
 - The forward\_fill\_implied\_futures function might fail if the column to be filled does not exist or if the DataFrame structure changes unexpectedly.

7. Unusual Expiry Detection:  
 - If the code detects unusual current or monthly expiries, the subsequent operations may not handle these cases well, possibly leading to incorrect data processing or script failure.

8 Database Update Issues:  
 - If the script attempts to update the database with implied\_futures data and the connection fails or the database structure has changed, the update\_database function will fail, causing an incomplete execution.

9. File Operations:  
 - Writing the results to CSV may fail if there are file permission issues or if the directory where the file should be saved does not exist.