CLAIMS

1. A computer-implemented method for generating content for data records to cause execution of a processing rule during processing of the data records, the method including:

processing a first set of data records by a data processing application that includes a processing rule, wherein a processing rule operates on at least one input value and generates at least one output value, and wherein whether the processing rule is executed by the data processing application during processing of a particular data record depends directly or indirectly on a value in each of one or more data fields of the particular data record;

receiving execution information indicative of a first number of times the processing rule was executed by the data processing application during processing of the first set of records;

when the first number of times the processing rule was executed is less than a threshold number of times, determining a content criterion characterizing content to be generated for each of one or more fields;

generating content for each of one or more fields of a second set of data records according to the content criterion; and

processing the second set of data records by the data processing application, wherein when the second set of data records is processed by the data processing application, the processing rule is executed by the data processing application a second number of times, and wherein the second number of times is equal to or greater than the threshold number of times.

2. The method of claim 1, wherein generating content includes generating content based on a format specification for each of the fields.

3. The method of claim 2, wherein the format specification indicates a type of content.

4. The method of claim 3, wherein the type of content includes one or more of a string, a decimal, an integer, a date, or a datetime.

5. The method of any of the claims 2 to 4, including receiving the format specification through a user interface.

6. The method of any of the preceding claims, including:

creating a new data record including one or more of the fields; and

populating the one or more fields for the new data record.

7. The method of any of the preceding claims, wherein populating the one or more data fields with the generated content includes modifying pre-existing content for one or more of the data fields of the second set of data records.

8. The method of any of the preceding claims, wherein populating the one or more of the data fields includes creating a data field for one or more pre-existing records.

9. The method of any of the preceding claims, wherein the content criterion includes one or more of a target value, a target range of values, a target distribution of values, a maximum value, or a minimum value.

10. The method of any of the preceding claims, wherein the content criterion includes particular values for the generated content.

11. The method of any of the preceding claims, wherein the content criterion is indicative of a target combination of content to be included in two or more of the one or more data fields.

12. The method of any of the preceding claims, including receiving the content criterion through a user interface.

13. The method of any of the preceding claims, wherein generating content includes generating content based on a generation mode.

14. The method of claim 13, wherein the generation mode includes one or more of (i) generation of random content for one or more of the data fields for each of multiple data records, (ii) generation of unique content for one or more of the data fields for each of multiple data records, and (iii) selection of content for one or more of the data fields for each of multiple data records from a set of available content.

15. The method of any of the preceding claims, including providing the second set of data records including the generated content to the data processing application.

16. The method of any of the preceding claims, wherein determining the content criterion includes determining the content criterion to cause a particular rule to be executed at least the target number of times.

17. A non-transitory computer readable medium storing instructions for causing a computer system to carry out the method of any of the preceding claims.

18. A computing system including at least one processor configured to execute the method of any of claims 1 to 16.

19. A computing system including:

means for processing a first set of data records by a data processing application that includes a processing rule, wherein a processing rule operates on at least one input value and generates at least one output value, and wherein whether the processing rule is executed by the data processing application during processing of a particular data record depends directly or indirectly on a value in each of one or more data fields of the particular data record;

means for receiving execution information indicative of a first number of times the processing rule was executed by the data processing application during processing of the first set of records;

means for when the first number of times the processing rule was executed is less than a threshold number of times, determining a content criterion characterizing content to be generated for each of one or more fields;

means for generating content for each of one or more fields of a second set of data records according to the content criterion; and

means for processing the second set of data records by the data processing application, wherein when the second set of data records is processed by the data processing application, the processing rule is executed by the data processing application a second number of times, and wherein the second number of times is equal to or greater than the threshold number of times.

20. A computer-implemented method for testing a data processing application during development of the data processing application, the method including:

processing first data records using the data processing application, the data processing application implementing one or more rules, each first data record having multiple fields, wherein a rule operates on at least one input value and generates at least one output value, and wherein whether a given rule is executed by the data processing application during processing of a particular data record depends directly or indirectly on a value in each of one or more of the multiple fields of the particular data record;

during or after the processing of the first data records using the data processing application, receiving execution information indicative of a number of times each of the one or more rules was executed during the processing of the first data records;

for each rule of the data processing application, comparing the number of times the rule was executed during the processing of the first data records with a target number of times for the rule;

when the number of times a given rule was executed is less than the target number of times for the rule , determining a content criterion indicative of a target characteristic for data, wherein a data record having data with the target characteristic will cause the given rule to be executed when the data record is processed using the data processing application;

generating content according to a format of the first data records and according to the content criterion;

populating one or more fields of second data records with the generated content;

processing the second data records including the generated content using the data processing application;

during or after processing of the second data records using the data processing application, receiving execution information indicative of a number of times each of the one or more rules was executed during the processing of the second data records;

for each rule of the data processing application, comparing the number of times the rule was executed during the processing of the second data records with the target number of times for the rule;

based on the comparing, determining that each rule of the data processing application was executed at least the target number of times for the rule during the processing of the second data records; and

testing the data processing application using the second data records including the generated content.

21. The method of claim 20, including receiving the first data records at a client device, wherein the data processing application is executed on the client device.

22. The method of claim 21, wherein the client device comprises a computing device.

23. The method of claim 20 or 21, including receiving the first data records from a remote server.

24. The method of claim 23, including receiving the first data records at a client device that is communicatively coupled to the remote server via a LAN or WAN connection.

25. The method of any of claims 20 to 24, wherein generating content includes modifying content in one or more fields of the first data records, and wherein the modified first data records are the second data records.

26. The method of any of claims 20 to 25, wherein generating content for one or more fields of the second data records includes creating a new data record.

27. The method of any of claims 20to 26, including storing the second data records in a storage device.

28. The method of any of claims 20 to 27, including modifying the data processing application based on a result of the testing.

29. The method of any of claims 20 to 28, wherein testing the data processing application includes modifying the data processing application based on a result of processing the second data records using the data processing application.

30. The method of any of claims 20 to 29, including determining the content criterion such that the data in the second data records is substantially similar to data expected to be processed by the data processing application in a production environment.

31. A computer-implemented method for generating content for data records to cause execution of a processing rule during processing of the data records, the method including:

receiving execution information indicative of a first number of times a processing rule of a data processing application was executed during processing of a first set of data records by the data processing application, wherein whether the processing rule is executed by the data processing application during processing of a particular data record depends directly or indirectly on a value in each of one or more data fields of the particular data record;

when the first number of times the processing rule was executed is less than a threshold number of times, determining a content criterion indicative of a characteristic of content to be generated for each of one or more fields;

generating content for each of one or more fields of a second set of data records according to the content criterion; and

populating one or more data fields of a second set of data records with the content generated according to the content criterion, wherein the second set of data records populated with the generated content is sufficient to cause execution of the processing rule a second number of times equal to or greater than the threshold number of times when the second set of data records populated with the generated content is processed by the data processing application.

32. The method of claim 31, in which generating content includes generating content based on a format specification for each of the fields.

33. The method of any of claims 31 to 32, in which populating the one or more data fields of the second set of data records includes:

creating a new data record including the one or more fields; and

populating the one or more fields for the new data record.

34. The method of any of claims 31 to 33, in which populating the one or more data fields with the generated content includes modifying pre-existing content for one or more of the data fields of the second set of data records.

35. The method of any of claims 31 to 34, in which populating the one or more data fields includes creating a data field for one or more pre-existing data records.

36. The method of any of claims 31 to 35, in which the content criterion includes one or more of a target value, a target range of values, a target distribution of values, a maximum value, or a minimum value.

37. The method of any of claims 31 to 36, in which the content criterion includes particular values for the generated content.

38. The method of any of claims 31 to 37, in which the content criterion is indicative of a target combination of content to be included in two or more of the one or more data fields.

39. The method of one of claims 31 to 38, in which generating content includes generating content based on a generation mode.

40. The method of claim 39, in which the generation mode includes one or more of (i) generation of random content for one or more of the data fields for each of multiple data records, (ii) generation of unique content for one or more of the data fields for each of multiple data records, and (iii) selection of content for one or more of the data fields for each of multiple data records from a set of available content.

41. The method of any of claims 31 to 40, including providing the second set of data records including the generated content to the data processing application.

42. The method of any of claims 31 to 41, in which determining the content criterion includes determining the content criterion to cause the processing rule to be executed a number of times equal to or greater than the threshold number of times.

43. A non-transitory computer readable storage medium storing instructions for causing a computing system to carry out the method of any of claims 31 to 42.

44. A computing system including at least one processor configured to execute the method of any of claims 31 to 42:

45. A computing system for generating content for data records to cause execution of a processing rule during processing of the data records, the computing system including:

means for receiving execution information indicative of a first number of times a processing rule of a data processing application was executed during processing of a first set of data records by the data processing application, wherein whether the processing rule is executed by the data processing application during processing of a particular data record depends directly or indirectly on a value in each of one or more data fields of the particular data record;

means for, when the first number of times the processing rule was executed is less than a threshold number of times, determining a content criterion indicative of a characteristic of content to be generated for each of one or more fields;

generating content for each of one or more fields of a second set of data records according to the content criterion; and

means for populating one or more data fields of a second set of data records with the content generated according to the content criterion, wherein the second set of data records populated with the generated content is sufficient to cause execution of the processing rule a second number of times equal to or greater than the threshold number of times when the second set of data records populated with the generated content is processed by the data processing application.