

WHAT IS CLAIMED IS:

1. A method implemented by a data processing system for detecting aggregated values for keyed data items, with each keyed data item associating a particular data item with a particular key value, and for each of one or more key values, causing execution of one or more actions, including:

receiving, by a detection sub-system, a queue of keyed data items collected from a plurality of distinct data sources that are each external to the data processing system, with each keyed data item including a data item with a particular data value for an associated key value, with at least a first keyed data item collected from a first one of the distinct data sources having a data format that is distinct from at least a second keyed data item collected from a second one of the distinct data sources, and with a keyed data item in the queue being reformatted from a format of a data source from which that keyed data item is collected to a readable format of the detection sub-system;

storing, in in-memory data store for each of a plurality of key values, one or more data records with a plurality of pre-defined fields each storing one or more aggregated values for that key value, with an aggregated value for that key value being an aggregation of (i) one or more data values for that key value retrieved from another data store, and (ii) one or more data values of one or more respective data items for that key value included in the queue of keyed data items collected from the plurality of distinct data sources;

executing an application for processing keyed data items input into the detection sub-system from the queue, by:

for a particular key value of an input, keyed data item,

identifying a current state of the application for that particular key value;

accessing, from the in-memory data store, a data record for that particular key value;

executing one or more portions of the application designated for execution in that current state against the accessed data record;

upon detecting a specified aggregated value in a specified field of the accessed data record, outputting instructions specifying detection of the specified aggregated value for particular key value;

causing the application, with respect to the particular key value, to transition from its current state to a subsequent state; and

generating one or more data items for one or more indicators, where one or more values of such one or more data items are based on the particular keyed value and based on execution of the application; and
instructing one or more communication channels to perform one or more actions for the particular key value, responsive to receipt of the instructions for the particular key value from the detection sub-system.

2. The method of claim 1, further including: displaying one or more user interface elements for specifying one or more values of the one or more parameters for the application.

3. The method of claim 2, wherein executing the application includes executing the application with one or more values specified by the one or more user interface elements for the one or more parameters of the application.

4. The method of claim 1, wherein a data item includes a data record and wherein the method further includes reformatting the data record in accordance with a specified format.

5. The method of claim 1, wherein a data item is a data record, and wherein the method further includes: enriching the data record with data from a profile of a user associated with the data record, with the enriching being in accordance with instructions specified by application to retrieve, from the in-memory data store, profile data for the user and to populate one or more fields of the data record with the retrieved profile data.

6. The method of claim 1, further including executing a feedback loop to one or more third party systems for requesting confirmation of execution of the one or more actions.

7. The method of claim 1, further including: receiving data for the particular value of the key, with the received data being indicative of feedback with regard to at least one of the one or more actions; and updating a KPI for the particular value of the key with the feedback data by aggregating one or more portions of data included in or associated with the KPI with the received data.

8. The method of claim 1, wherein the one or more actions include one or more of sending a text message to an external device, sending an email to an external system, opening a ticket for a work order in a case management system, cutting a mobile telephone connection, providing a web service to a targeted device, transmitting a data packet of the one or more transformed data items with a notification, and executing a data processing application that is hosted on one or more external computers on the one or more transformed data items.

9. The method of claim 1, wherein one or more instructions are sent from an instruction sub-system via a network connection to cause execution of at least one of the one or more actions on an external device, the method further including: receiving a feedback message indicating whether the at least one of the one or more actions (i) were successfully completed, or (ii) failed.

10. The method of claim 9, wherein the at least one of the one or more actions are considered failed if a portion of the at least one of the one or more actions was not completed, wherein the feedback message indicates which portion of the at least one of the one or more failed actions was not completed.

11. The method of claim 9, wherein the feedback message indicates result data of the successfully completed and/or failed at least one of the one or more actions.

12. The method of claim 3, wherein one or more instructions are sent via a network connection to cause execution of the one or more actions on an external device, the method further including: receiving, from the external device, a feedback message including result data of the executed at least one of the one or more actions; comparing the result data with predetermined data associated with a successful completion of the execution of the at least one of the one or more actions; and determining that the execution of the at least one of the one or more actions was successfully completed, or that the execution of the at least one of the one or more actions failed, based on the comparison.

13. The method of claim 12, further including: changing the one or more specified values for one or more parameters of the f application based on the result data; and re-executing the application with the changed one or more specified values.

14. One or more machine-readable hardware storage devices for detecting aggregated values for keyed data items, with each keyed data item associating a particular data item with a particular key value, and for each of one or more key values, causing execution of one or more actions, the one or more machine-readable hardware storage devices storing instructions that are executable by one or more processing devices to perform the steps of the method of any one of claims 1 to 13.

15. A data processing system for detecting aggregated values for keyed data items, with each keyed data item associating a particular data item with a particular key value, and for each of one or more key values, causing execution of one or more actions, the data processing system including one or more processors; and one or more machine-readable hardware storage devices storing instructions that are executable by the one or more processors to perform the steps of the method of any one of claims 1 to 13.

16. A method implemented by a data processing system for detecting aggregated values for keyed data items, with each keyed data item associating a particular data item with a particular key value, and for each of one or more key values, causing execution of one or more actions, including:

receiving keyed data items collected from a plurality of data sources, with a keyed data item including a data item associated with a particular data value for a key value;

maintaining, for respective key values, states of an application, with a state specifying one or more portions of the application to be executed in that state, wherein a state of the application for a key value is based on a state previously reached from executing one or more portions of the application on one or more data items associated with the key value;

storing, in a first data store, for each of a plurality of key values, one or more aggregated values for that key value, with an aggregated value for that key value based on (i) one or more data values for that key value retrieved from a second data store, and (ii) one or more data values of one or more respective data items for that key value included in the keyed data items collected from the data sources;

displaying one or more user interface elements for specifying one or more properties or one or more parameter values for processing keyed data items;
executing the application with the one or more properties or the one or more parameter values specified by the one or more user interface elements, by:
for a particular key value of an input, keyed data item,
identifying a current state of the application for that particular key value;
accessing data for that particular key value;
in accordance with the one or more properties or one or more parameter values specified by the one or more user interface elements, executing one or more portions of the application designated for execution in that current state against the accessed data for that particular key value;
detecting a specified aggregated value for the particular key value in accessed data, with the specified aggregated value for the particular key value based on (i) one or more data values for that particular key value retrieved from a second data store, and (ii) one or more data values of one or more respective data items for that particular key value included in the keyed data items collected from the data sources;
upon detecting the specified aggregated value for the particular key value in the accessed data, outputting instructions specifying detection of the specified aggregated value for the particular key value; and
causing the application, with respect to the particular key value, to transition from its current state to a subsequent state; and
instructing one or more communication channels to perform one or more actions for the particular key value, responsive to receipt of the instructions for the particular key value.

17. The method of claim 16, wherein a data item includes a data record and wherein the method further include reformatting the data record in accordance with a specified format.

18. The method of claim 16, wherein a data item is a data record, and wherein the method further includes:

enriching the data record with data from a profile of a user associated with the data record, with the enriching being in accordance with instructions specified by the application

to retrieve profile data for the user and to populate one or more fields of the data record with the profile data.

19. The method of claim 16, further including executing a feedback loop to one or more third party systems for requesting confirmation of execution of the one or more actions.

20. The method of claim 16, further including receiving data for the particular key value, with the received data being indicative of feedback with regard to at least one of the one or more actions; and updating a KPI for the particular key value based on the received data indicative of the feedback by aggregating one or more portions of data included in or associated with the KPI with the received data.

21. The method of claim 16, wherein the one or more actions include one or more of sending a text message to an external device, sending an email to an external system, opening a ticket for a work order in a case management system, cutting a mobile telephone connection, providing a web service to a targeted device, transmitting a data packet of the keyed data items with a notification, and executing a data processing application that is hosted on one or more external computers on the keyed data items.

22. The method of claim 16, wherein one or more instructions are sent via a network connection to cause execution of at least one of the one or more actions on an external device, the method further including:

receiving a feedback message indicating whether the at least one of the one or more actions (i) were successfully completed, or (ii) failed.

23. The method of claim 16, including: based on the one or more properties, determining a range of values for processing the keyed data items and executing the application in accordance with the range of values.

24. The method of claim 16, wherein the one or more parameter values are a range of values.

25. One or more non-transitory machine-readable hardware storage devices for detecting aggregated values for keyed data items, with each keyed data item associating a particular data item with a particular key value, and for each of one or more key values, causing execution of one or more actions, the one or more non-transitory machine-readable hardware storage devices storing instructions that are executable by one or more processing devices to perform the steps of the method of any one of claims 16 to 24.

26. A data processing system for detecting aggregated values for keyed data items, with each keyed data item associating a particular data item with a particular key value, and for each of one or more key values, causing execution of one or more actions, the data processing system including:

at least one processing device; and

at least one memory in communication with the at least one processing device, the at least one memory storing instructions that, when executed by the at least one processing device, cause the at least one processing device to perform the steps of the method of any one of claims 16 to 24.

27. A method performed by a data processing system for executing a computer program for processing one or more keyed data items associated with one or more key values, and, for a particular key value, selecting, from among one or more rules, a particular rule to be applied, if the computer program is in a particular state with respect to the particular key value, the method including:

identifying a computer program that processes one or more data items, with the one or more data items being associated with the one or more key values,

wherein at least one of the one or more data items includes a data record that is being processed by the data processing system;

maintaining, for respective key values, states of an application, with a state specifying one or more portions of the application to be executed in that state, wherein a state of the application for a key value is based on a state previously reached from executing one or more portions of the application on one or more data items associated with the key value;

enriching the data record by combining data from a profile associated with the data record, with the enriching being in accordance with instructions based on the computer program including instructions to retrieve, from a data store associated with the computer

program, profile data and to populate one or more fields of the data record with the profile data; and

executing the computer program to process the one or more data items, wherein one or more states of the computer program are maintained for the one or more key values, the executing including:

for one or more data items associated with the particular key value,

identifying a state of the computer program, with the state being associated with the particular key value;

based on the identified state, with respect to the particular key value, identifying one or more rules;

wherein a rule specifies one or more attributes and further specifies one or more actions to be performed upon selection of the rule, with the rule being selected at least if the computer program is in the identified state, with respect to the particular key value;

selecting, from among the one or more rules in accordance with the computer program being in the identified state with respect to the particular key value, a rule specifying one or more attributes of the one or more data items associated with the particular key value;

causing the one or more actions specified by the identified one or more rules to be performed; and

causing the computer program, with respect to the particular key value, to transition from a first state to a second state.

28. The method of claim 27, wherein the particular key value includes a user identifier associated with a particular user.

29. The method of claim 27, wherein the one or more attributes specify a population segment associated with the particular key value.

30. The method of claim 27, wherein the one or more rules are configured based on a parameterized application.

31. The method of claim 27, further including:

displaying one or more user interface elements for specifying one or more values of the one or more attributes.

32. The method of claim 27, wherein the one or more actions include one or more of sending a text message to an external device, sending an email to an external system, opening a ticket for a work order in a case management system, cutting a mobile telephone connection, providing a web service to a targeted device, transmitting a data packet of the one or more data items with a notification, and executing a data processing application that is hosted on one or more external computers on the one or more data items.

33. One or more non-transitory machine-readable hardware storage devices for storing a computer program for processing one or more keyed data items associated with one or more key values, and, for a particular key value, selecting, from among one or more rules, a particular rule to be applied, if the computer program is in a particular state with respect to the particular key value, the one or more non-transitory machine-readable hardware storage devices storing instructions that are executable by one or more processing devices to perform the steps of the method of any one of claims 27 to 32.

34. A data processing system for executing a computer program for processing one or more keyed data items associated with one or more key values, and, for a particular key value, selecting, from among one or more rules, a particular rule to be applied, if the computer program is in a particular state with respect to the particular key value, the data processing system including:

at least one processing device; and

at least one memory in communication with the at least one processing device, the at least one memory storing instructions that, when executed by the at least one processing device, cause the at least one processing device to perform the steps of the method of any one of claims 27 to 32.