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(54) **PROVIDING FINANCIAL PORTFOLIO RISK MEASUREMENT AND ANALYSIS TO REMOTE CLIENT SERVICES VIA A NETWORK-BASED APPLICATION PROGRAMMING INTERFACE**

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(57) **ABSTRACT**

There is provided a computer system having a module for controlling a processor to receive a request via a network for a risk analysis of an investment, pass the request to a risk analysis engine, receive a result of the risk analysis from the risk analysis engine, and send the result to a client device via the network.

FIG. 1

200

SET UP
FOR
REQUEST

205

EXTRACT
CUSTOMER PROFILE

210

SET
DATA PARAMETERS

215

SET
OUTPUT PARAMETER

220

SET
FORMAT PARAMETER

225

ISSUE REQUEST

FIG. 2

300

PROCESSING
A REQUEST

THE API
RECEIVES A REQUEST — 305

API PASSES THE REQUEST
TO THE
ANALYTICAL ENGINE — 310

THE ANALYTICAL ENGINE
DECODES THE REQUEST — 315

320

INDIVIDUAL   RISK   AGGREGATE
              CALCULATION

325   330

CALCULATE   CALCULATE
INDIVIDUAL RISK   AGGREGATE RISK

335

HISTOGRAM   N

Y

GENERATE
HISTOGRAM — 340

RETURN — 345
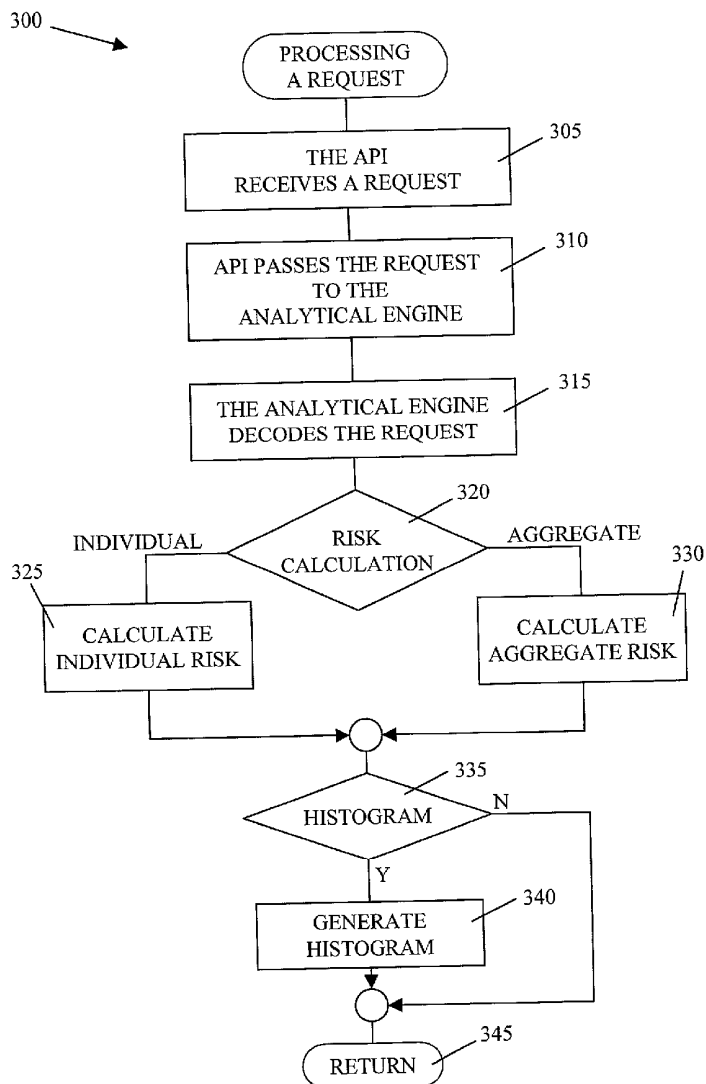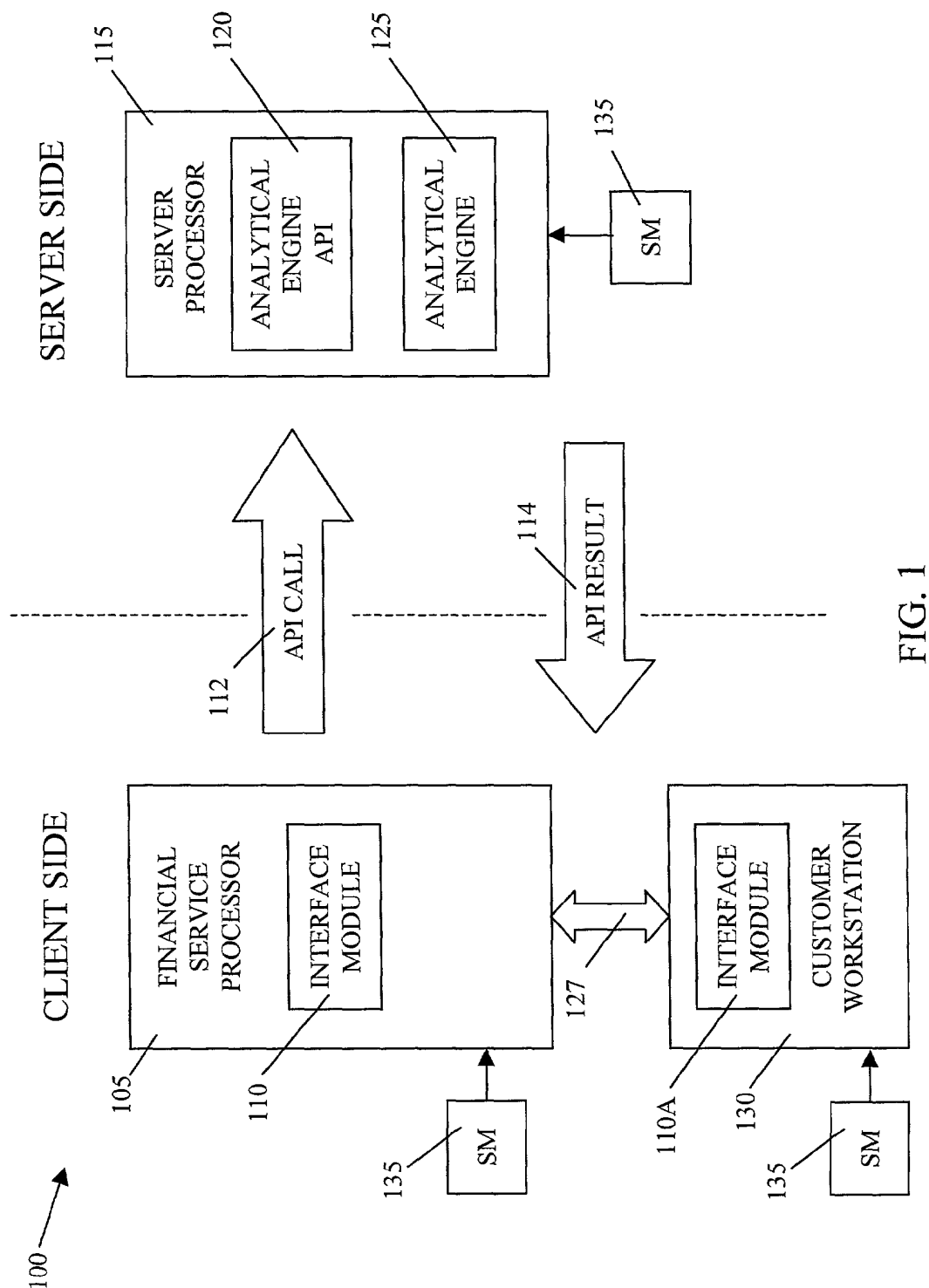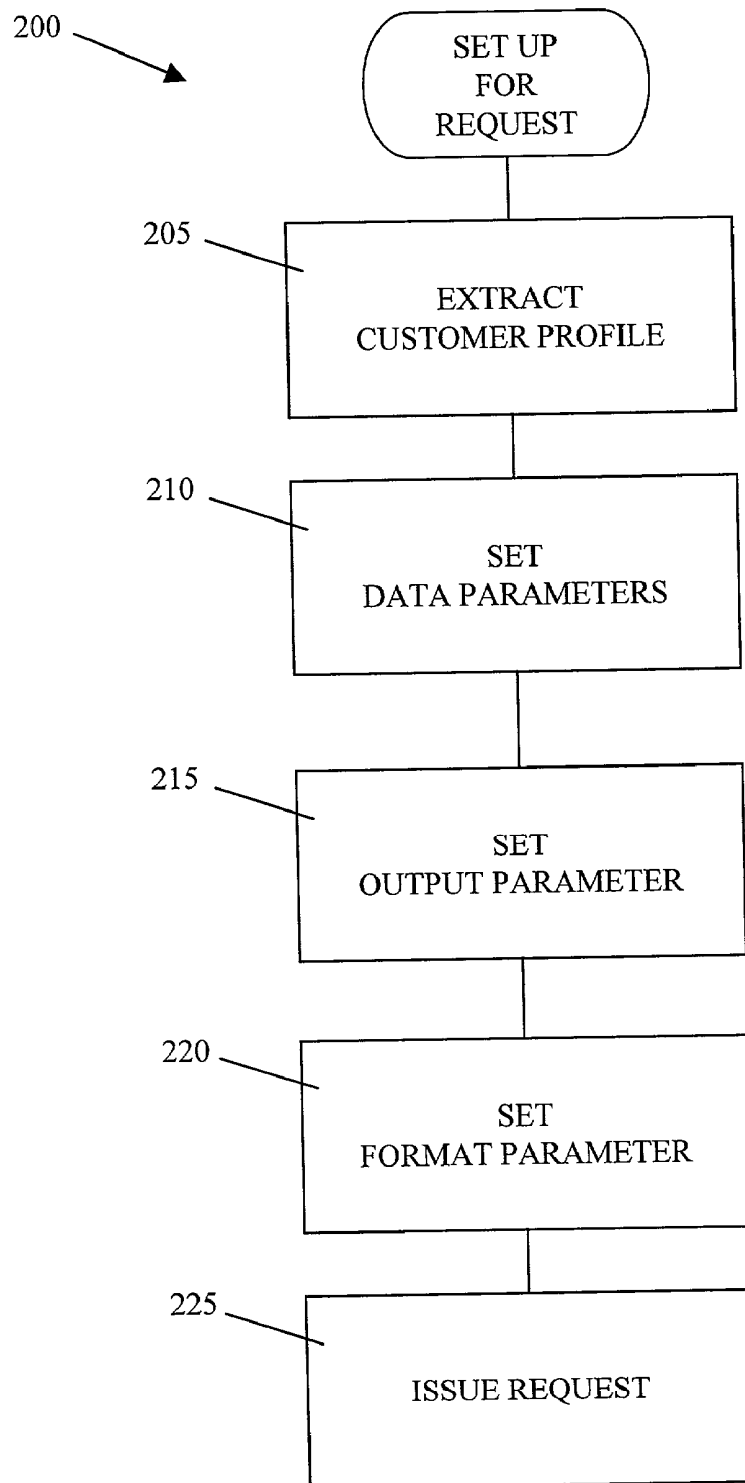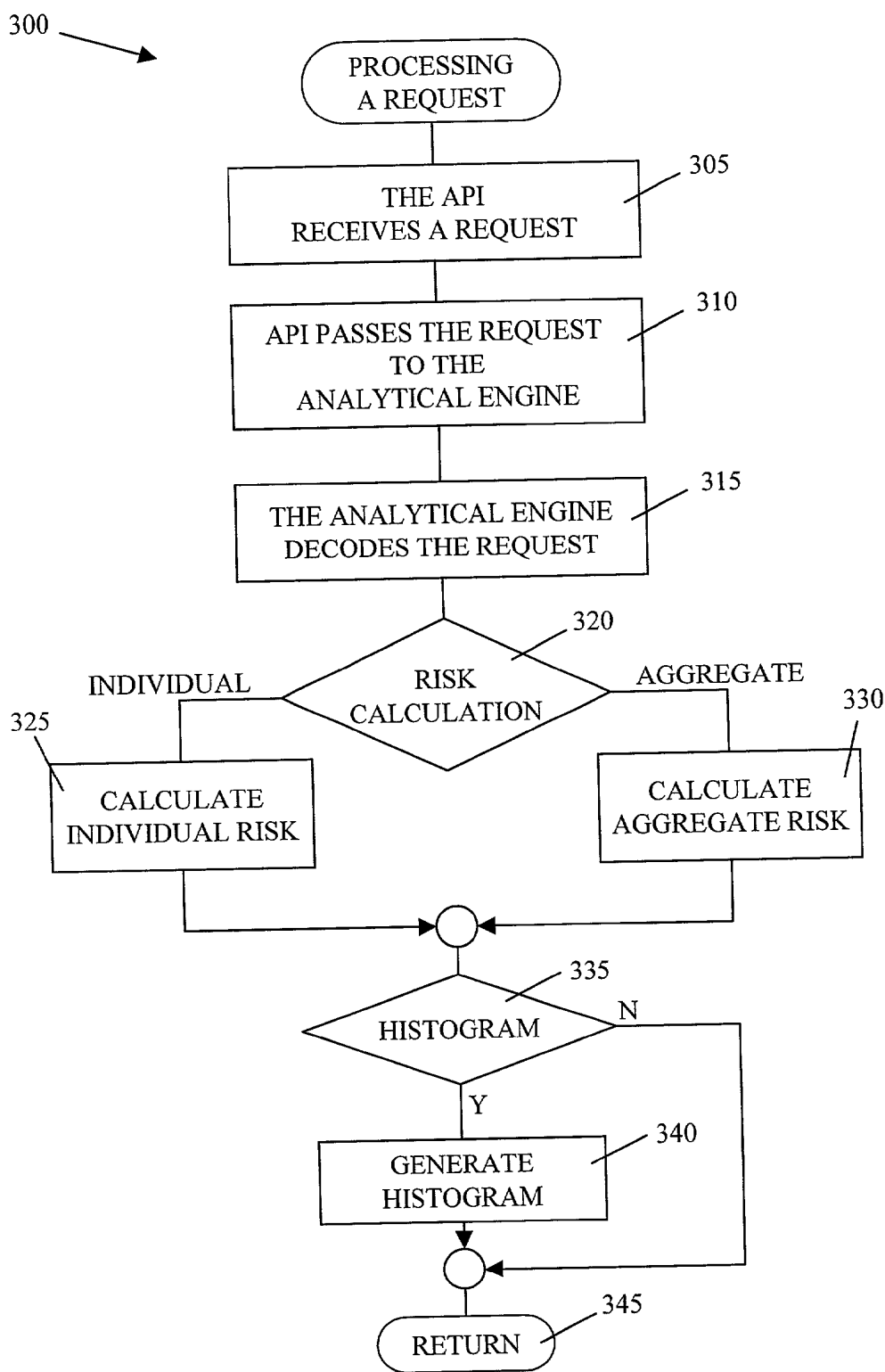
FIG. 3

PROVIDING FINANCIAL PORTFOLIO RISK MEASUREMENT AND ANALYSIS TO REMOTE CLIENT SERVICES VIA A NETWORK-BASED APPLICATION PROGRAMMING INTERFACE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001]   The present application is claiming priority of U.S. Provisional Patent Application Serial No. 60/286,791, which was filed on Apr. 26, 2001.

BACKGROUND OF THE INVENTION

[0002]   1. Field of the Invention

[0003]   The present invention relates to a computer module risk analysis of an investment, and more particularly, to application program interface (API) that provides an interface for a risk analysis engine.

[0004]   2. Description of the Prior Art

[0005]   A financial service entity, such as a securities brokerage, investment advisor, or bank, can provide a variety of investment services to a customer who maintains an investment portfolio within an electronic data processing system. Such investment services include, for example, online trading, reporting current value of a portfolio, and reporting historical performance.

[0006]   In the interest of offering timely service, as well as to avoid the complexity of development, hardware, software, and data management, the financial service entity may wish to dynamically access and embed a set of risk analysis functions provided by a third party Application Service Provider (ASP). This embedding would result in the addition and close integration of these third party functions within the financial service entity's application. As such, the risk management functions would reside on a server processor affiliated with the ASP.

[0007]   Existing risk management systems have been created to reside on the same processors and servers used by the financial service entity. This means that the financial service entity must undergo the time and labor expense of locally installing risk management software as well as supplying additional hardware for it to run on. Additional hardware is often necessary due to processor-intensive calculations, which may not execute in a timely or feasible manner on machines currently used by the financial service entity. In addition to hardware and software, risk management applications require market data inputs, i.e., current and historical security prices. This means that in addition to more software and computers, existing risk management systems require a financial service entity to incur the cost and labor of maintaining and updating a market database.

[0008]   There is a need for an improved method for financial portfolio risk measurement and analysis that accesses portfolio risk analysis features, at runtime, in a networked and distributed manner.

SUMMARY OF THE INVENTION

[0009]   The present invention enables a financial service entity to provide portfolio risk analysis functions to a customer. The customer, as a result, would then be able to access a range of risk measurement functions, and apply the functions to his or her own electronically stored investment portfolio.

[0010]   The primary components of a system in accordance with the present invention include a customer workstation, a financial service processor and a server processor. The server processor includes an analytical engine for performing a risk analysis, and an application program interface (API) that allows a device external to the server processor to access the analytical engine.

[0011]   In one embodiment of the present invention, the customer uses the customer workstation to access the financial service processor, which in turn sends a request to the server processor for a risk analysis. The server processor performs the risk analysis and returns a result to the financial processor, and the financial processor sends the result to the customer workstation. In an alternative embodiment of the invention, the customer workstation sends a request to the server processor for a risk analysis, and the server processor returns the result tot the customer workstation. Regardless of whether the request is sent by the financial service processor or the customer workstation, the request is embedded in an application program interface (API) call to the API on the server processor.

[0012]   An embodiment of the present invention is a computer system having a module for controlling a processor to receive a request via a network for a risk analysis of an investment, pass the request to a risk analysis engine, receive a result of the risk analysis from the risk analysis engine, and send the result to a client device via the network.

[0013]   Another embodiment of the invention is a computer system having (i) a processor, (ii) a risk analysis engine for controlling the processor to perform a risk analysis of an investment; and (iii) an application program interface (API) for controlling the processor to:

[0014]   (a) receive an API call via a network, where the API call includes a request for the risk analysis;

[0015]   (b) pass the request to the risk analysis engine;

[0016]   (c) receive a result of the risk analysis from the risk analysis engine; and

[0017]   (d) send the result to a client device via the network.

[0018]   The request includes data describing the investment. The risk analysis engine includes a plurality of risk analysis functions, and the request includes data that selects a member of the plurality of risk analysis functions.

[0019]   The present invention also includes an embodiment in a storage media containing instructions for controlling a processor. The storage media includes instructions for controlling the processor to receive a request for a risk analysis of an investment, pass the request to a risk analysis engine, receive a result of the risk analysis from the risk analysis engine, and send the result to a client device via the network.

[0020]   Another embodiment of the invention is an application program interface (API) for controlling a processor to (a) receive a an API call via a network, where the API call includes a request for a risk analysis of an investment, (b) pass the request to a risk analysis engine, (c) receive a result of the risk analysis from the risk analysis engine, and (d)

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