

METHODS AND APPARATUSES FOR CODE SNIPPET CORRECTION, COMPUTER DEVICES AND STORAGE MEDIUMS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority to Chinese Patent Application No. 2019102961044, filed with the Chinese Patent Office on April 12, 2019 and entitled "METHODS AND APPARATUSES FOR CODE SNIPPET CORRECTION, COMPUTER DEVICES AND STORAGE MEDIUMS", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present application relates to methods and apparatuses for code snippet correction, computer devices, and storage mediums.

BACKGROUND

[0003] With the development of internationalization, the developed software systems will face the needs of being used in different regions and countries in the world, it is therefore necessary to translate the source code of the software system from the original language to a certain language. In the traditional way, it is usually the business analyst who collects translation requirements and writes the same into a document, and then delivers it to the programmer to modify the source code based on the document. However, the inventors realized that the conventional correction process of code internationalization requires the cooperation between the business analyst and the developer, the time cost and the manpower cost are high, and translation error is likely to happen when the developer implements the translation idea of the business analyst in practice. If the developers are to perform a full verification and modification on the translated source code file manually, the workload is overwhelming and omission is likely to happen, causing that the code snippet correction outcome is unreliable.

SUMMARY

[0004] According to various embodiments disclosed in this application, there is provided methods and apparatuses for code snippet correction, computer devices, and storage mediums.

[0005] A method for code snippet correction applied to a code server, the method includes:

[0006] reading a code correction configuration file uploaded by a terminal; the code correction configuration file includes a path of source code file to be corrected and a path of target translation detail report;

[0007] reading configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verifying the configuration parameters;

[0008] when the configuration parameters pass the pre-verification, acquiring a source code file to be corrected according to the path of source code file to be corrected;

[0009] acquiring a target translation detail report according to the target translation detail report file path; the target translation detail report includes a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

[0010] traversing each target correction item in the target translation detail report, correcting the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generating the corrected source code file.

[0011] An apparatus for code snippet correction includes:

[0012] a reading module configured to a code correction configuration file uploaded by a terminal; the code correction configuration file includes a path of source code file to be corrected and a path of target translation detail report; and read configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verify the configuration parameters;

[0013] an acquiring module configured to, when the configuration parameters pass the pre-verification, acquire a source code file to be corrected according to the path of source code file to be corrected; and acquire a target translation detail report according to the target translation detail report file path; the target translation detail report includes a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

[0014] a correction module configured to traverse each target correction item in the target translation detail report, correct the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generate the corrected source code file.

[0015] A computer device includes a memory and one or more processors, the memory stores computer-readable instructions that, when executed by the one or more processors, causes the one or more processors to perform the following steps:

[0016] reading a code correction configuration file uploaded by a terminal; the code correction configuration file includes a path of source code file to be corrected and a path of target translation detail report;

[0017] reading configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verify the configuration parameters;

[0018] when the configuration parameters pass the pre-verification, acquiring a source code file to be corrected according to the path of source code file to be corrected;

[0019] acquiring a target translation detail report according to the target translation detail report file path; the target translation detail report includes a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

[0020] traversing each target correction item in the target translation detail report, correct the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generate the corrected source code file.

[0021] One or more non-volatile computer-readable storage medium storing computer-readable instructions that, when executed by one or more processors, causes the one or more processors to perform the following steps:

[0022] reading a code correction configuration file uploaded by a terminal; the code correction configuration file includes a path of source code file to be corrected and a path of target translation detail report;

[0023] reading configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verifying the configuration parameters;

[0024] when the configuration parameters pass the pre-verification, acquiring a source code file to be corrected according to the path of source code file to be corrected;

[0025] acquiring a target translation detail report according to the target translation detail report file path; the target translation detail report includes a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

[0026] traversing each target correction item in the target translation detail report, correcting the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generating the corrected source code file.

[0027] The details of at least an embodiment of the present disclosure will be presented with reference to the following drawings and description. Other characteristic and advantages of the present disclosure will be more apparent from the specification, drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] To illustrate the technical solutions according to the embodiments of the present disclosure more clearly, the accompanying drawings for describing the embodiments are introduced briefly in the following. Apparently, the accompanying drawings in the following description are only some embodiments of the present

disclosure, and persons of ordinary skill in the art can derive other drawings from the accompanying drawings without creative efforts.

[0029] FIG. 1 is a schematic diagram of an application scenario of a method for code snippet correction according to one or more embodiments.

[0030] FIG. 2 is a schematic flowchart of a method for code snippet correction according to one or more embodiments.

[0031] FIG. 3 is a schematic flowchart of a method for code snippet correction according to another embodiment.

[0032] FIG. 4 is a block diagram of an apparatus for code snippet correction according to one or more embodiments.

[0033] FIG. 5 is a schematic diagram of a computer device according to one or more embodiments.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0034] The present disclosure will be described in details in combination with the accompanying drawings and embodiments such that the technical solution and advantages of the present disclosure will be more apparent. It should be understood that the particular embodiments are described for the purpose of illustrating as opposed to restricting the present disclosure.

[0035] The method for code snippet correction provided in this application may be applied to the application environment shown in FIG. 1. The terminal 102 communicates with the code server 104 through the network. The terminal 102 may be but is not limited to a variety of personal computers, laptops, smartphones, tablets and portable wearable devices. The code server 104 may be implemented by a separate server or a server cluster consisting of a plurality of servers. The code server 104 reads a code correction configuration file after the developer writes the code correction configuration file to the terminal 102. The code server 104 can obtain the source code file to be corrected according to the path of source code file to be corrected in the code correction configuration file. The code server 104 can also obtain the target translation detail report according to the target translation detail

report file path in the code correction configuration file. The target translation detail report includes a plurality of target correction items and snippet positioning information corresponding to each target correction item. By traversing each target correction item in the target translation detail report, the code server 104 can process the source code file to be corrected according to the snippet positioning information corresponding to each target correction item to generate the corrected source code file.

[0036] In an embodiment, as shown in FIG. 2, a method for code snippet correction is provided and is illustrated being applied to the code server 104 in FIG. 1, which includes the following steps:

[0037] At step 202: a code correction configuration file uploaded by a terminal is read; the code correction configuration file includes a path of source code file to be corrected and a path of target translation detail report.

[0038] The code correction configuration files are configuration files that are relied on for corrective processing of source code files to be corrected. Developers can write code correction configuration files in advance at the terminal, so that the code server can read the code correction configuration files. The path of source code file to be corrected refers to the storage path of the source code file to be corrected. The path of target translation detail report is the storage path of the target translation detail report.

[0039] In an embodiment, the code server can pre-verifying the configuration parameters by reading configuration parameters such as the path of source code file to be corrected and the path of target translation detail report in the code correction configuration file. For example, the integrity and authenticity of the configuration parameters can be verified. When the configuration parameter pre-verification fails, a parameter error message is sent to the terminal. When the configuration parameter pre-verification is passed, a next step is performed.

[0040] At step 204, a source code file to be corrected is acquired according to the path of source code file to be corrected.

[0041] The source code file to be corrected is a source code file that requires code

snippet correction. The source code file to be corrected can be a translated source code file obtained by manual translation of the source code file to be translated, or a translated source code file obtained by automatic translation by a code translation tool. The source code file to be corrected can be stored in a code server or in a terminal or other server, and the code server can acquire the source code file to be corrected from the terminal or other server according to the path of source code file to be corrected.

[0042] At step 206: a target translation detail report is acquired according to the target translation detail report file path; the target translation detail report includes a plurality of target correction items and snippet positioning information corresponding to each target correction item.

[0043] The target translation detail report is a report that records the translation details of the translated source code file obtained by translation processing of the source code file to be translated. The target translation detail report can include a plurality of target correction items, one of which corresponds to a code snippet to be corrected in the source code file to be corrected that needs to be corrected. Each target correction item includes a code snippet to be corrected, a corrected code snippet, as well as a context code snippet, etc. The target translation detail report also includes snippet positioning information corresponding to each target correction item.

[0044] The snippet positioning information refers to the positioning information of a code snippet to be corrected in the source code file to be corrected. For example, the code snippet to be corrected of a specific syntax corresponds to a specific start string and an end string, which can detect the start positioning information of the start string in the source code file to be corrected and the end positioning information of the end string in the source code file to be corrected, and regard the start positioning information and the end positioning information as snippet positioning information.

[0045] At step 208, each target correction item in the target translation detail report is traversed, the source code file to be corrected is corrected according to the snippet positioning information corresponding to each target correction item, and the corrected source code file is generated.

[0046] Based on the snippet positioning information corresponding to each target correction item in the target translation detail report, the code snippet to be corrected in the source code file to be corrected that needs to be corrected can be looked up, and thus the code snippet to be corrected being located is corrected based on the target correction item. A corrected source code file can be generated after all the code snippets to be corrected in the source code file are being corrected.

[0047] In the method for code snippet correction described, by reading the code correction configuration file, the code server acquires the source code file to be corrected according to the path of source code file to be corrected in the code correction configuration file, and acquires the target translation detail report according to the target translation detail report file path in the code correction configuration file. The code server can accurately correct the source code file to be corrected based on the target correction items in the target translation detail report and according to the corresponding snippet positioning information, and generates a corrected source code file. By performing an automated correction of the source code file to be corrected based on the target translation detail report automation, the comprehensiveness and accuracy of the correction can be ensured, thereby improving the reliability of the correction result.

[0048] In one of the embodiments, before reading the code correction configuration file, the method further includes acquiring an initial translation detail report; the initial translation detail report includes a plurality of code snippets to be translated and translated code snippets and snippet positioning information corresponding to each of the code snippets to be translated, and the plurality of code snippets to be translated includes code snippets to be corrected; receiving a corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information and inputted by the terminal; regarding each code snippet to be corrected and corresponding corrected code snippet and context code snippet as a target correction item; and generating a target translation detail report according to the plurality of target correction items.

[0049] The initial translation detail report refers to the report that records the

translation details and obtained from the automatic translation processing of the source code file to be translated. The code snippet to be translated refers to the code snippet in the source code file to be translated that is of the original language type and needs to be translated into the target language type. The translated code snippet refers to the code snippet of the target language type and after translation processing of the code snippet to be translated. In the process of automatic translation, as the direct translation and replacement of the code snippets to be translated do not take into account the context code snippets, it is resulted that some of the translated code snippets are translated inaccurately, those inaccurately translated code snippets are code snippets to be corrected.

[0050] The code snippet to be corrected refers to the code snippet in the source code file to be corrected that is translated incorrectly and needs to be corrected. A corrected code snippet is a code snippet configured to correct a code snippet to be corrected. Developers can input corrected code snippets based on the initial translation detail report. The context code snippets can also be into the target translation detail reports, so that developers can manually check the translated code snippets according to the target translation detail report without having to open the source code file to be corrected, so as to more accurately filter out code snippets to be corrected from the translated code snippets and reduce the time for the developers to browse and look up codes.

[0051] In an embodiment, the initial translation detail report may also include a risk level corresponding to each translated code snippet. The risk levels include, but are not limited to, a low risk level, a potential risk level, and a high risk level, etc. When the context code snippet is checked, it is found that the code snippet to be translated is part of a string concatenation, which indicates that the automatic translation in this case is often incorrect and that the code snippet to be translated can be marked as of a potential risk level. Or when the translation result is checked, it is found that the translated code snippet still includes a string of original language type, which indicates that the translator system did not translate accurately and the code snippet to be translated can be marked as of a potential risk level. When a

translation failure is detected due to a failure in calling the translator interface, the code snippet to be translated can be marked as of a high risk level. Or when no code processor matching the code snippet to be translated is found, the code snippet to be translated is marked as of a high risk level. Developers can focus on verifying translated code snippets of high risk levels to quickly identify code snippets to be corrected, thereby inputting corrected code snippets for code snippets to be corrected.

[0052] In an embodiment, the receiving the corrected code snippet inputted based on the code snippet to be corrected and corresponding snippet positioning information includes: acquiring a code jump instruction; the code jump instruction corresponding to the code snippet to be corrected; acquiring a source code file to be corrected to which the code snippet to be corrected belongs based on the code jump instruction; jumping to show the source code file to be corrected according to the snippet positioning information corresponding to the code snippet to be corrected; detecting a code correction operation acting on the shown source code file to be corrected; and extracting a corrected code snippet based on the code correction operation.

[0053] When a developer is unable to determine the corrected code snippet of a code snippet to be corrected through the initial translation detail report, such as in case of a code logic problem or a string concatenation problem, the developer may trigger a code jump instruction, the code server can open and show the source code file to be corrected based on the code jump instruction, and jump to a portion including the uncertain code snippet to be corrected. The code server can also mark the portion of the code snippet to be corrected in the source code file to be corrected, so that developers can quickly browse through the context snippet of the code snippet to be corrected, thus perform code correction operations on the source code file to be corrected. The code correction operations can be the developers directly performing code modification on the source code file to be corrected, then the code server can compare the source code files to be corrected before and after modification, and extract the code snippet to be corrected and the corrected code snippet. It may also be the developer selecting the portion to be modified in the source code file to be corrected as the code snippet to be corrected, so that the developer can input the

corrected code snippet at the corresponding location of the target translation detail report. By the fast code jump, the developer can save the time to look up the code snippet to be corrected in the source code file to be corrected, thereby improving the generation efficiency of the target translation detail report.

[0054] In an embodiment, the traversing each target correction item in the target translation detail report, correcting the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generating the corrected source code file includes: extracting the code snippet to be corrected corresponding to each target correction item in the target translation detail report and the respective corrected code snippet; looking up the code snippet to be corrected in the source code file to be corrected according to the snippet positioning information corresponding to each target correction item; replacing the code snippet to be corrected in the source code file to be corrected with a corresponding corrected code snippet; and when corrective processing corresponding to all target correction items is detected to be completed, rewriting the source code file to be corrected to obtain the corrected source code file.

[0055] Through the target correction item and according to the corresponding snippet positioning information, a corrective processing is performed one by one on the code snippet to be corrected in the source code file to be corrected, which can ensure that the corrective processing can cover the entire source code file to be corrected and prevent omissions.

[0056] In an embodiment, the acquiring the initial translation detail report includes: acquiring a set of analysis result to be translated; the set of analysis result to be translated includes a code snippet to be translated and a context code snippet corresponding to the code snippet to be translated; looking up a code processor matching the code snippet to be translated; performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target language type and a translation policy of the code snippet to be translated; performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target

language type and a translation policy of the code snippet to be translated; calling a translator interface provided by a translator system by the code processor, the translator system being deployed on a translation server, the translator system translating the code snippet to be translated into a translated code snippet of corresponding target language type based on the translation policy; and generating the initial translation detail report according to the code snippet to be translated and the translated code snippet and context code snippet corresponding to each code snippet to be translated.

[0057] The set of analysis result to be translated refers to the set of analysis results respectively corresponding to a plurality of code snippets to be translated after analysis on the source code file to be translated. The analysis result includes the code snippets to be translated and the related information in the source code file. The context code snippets are code snippets of a preset character length in the beginning and the ending of the code snippets to be translated in source code file to be translated. For example, it is possible to acquire the code snippets of the first and last 50 character length of the code snippet to be translated as the context code snippet of the code snippet to be translated.

[0058] The code processor refers to the processor used to carry out grammatical identification, risk identification, translation processing, and status marking of code snippets to be translated. Different code processors can be set up in advance for different language types of code snippets to be translated, so that the code processor can perform more targeted operations on the code snippets to be translated to achieve more accurate code snippet translation. The code processor can combine context code snippets to analyze the syntax of the code snippets to be translated, thereby identifying translation policies corresponding to the code snippets to be translated. Different translation policies can be preset for different code snippets to be translated. Translation policies include whether to perform a replacement, and whether to perform different translations corresponding to code snippets to be translated of different syntaxes. Through the resulting context code snippets, a syntax analysis can be performed on the code snippets to be translated more accurately.

[0059] The translator interface is an interface provided by a translator system and can be used to implement translation functions by calling. The translator system can be deployed on a translation server. The translator system includes but is not limited to one or more of Baidu or Google translators. The translator system can output a translated source code file of the target language type and a translation detail report according to the translation result. Through an automated translation replacement, the code translation efficiency is improved, and the comprehensiveness and uniformity of the translation result are also improved.

[0060] In an embodiment, the acquiring the set of analysis result to be translated includes: acquiring a source code file to be translated; reading a source code directory in the source code file to be translated; the directory of the source code file to be translated includes a plurality of initial file names; traversing an initial code sub-file corresponding to each initial file name, and filtering out a sub-file of code to be translated; the sub-file of code to be translated matching a preset language type; looking up a parser matching the preset language type; and acquiring snippet positioning information of the code snippet to be translated in the sub-file of code to be translated by the parser, extracting the code snippet to be translated based on the sub-file of code to be translated, and generating the set of analysis result to be translated according to the code snippet to be translated and the snippet positioning information; the set of analysis result to be translated includes the code snippet to be translated in the sub-file of code to be translated and the context code snippet corresponding to the code snippet to be translated.

[0061] The source code to be translated can be pre-stored in the database of the code server, the code server can directly acquire the source code file to be translated from the local database. The code server can also receive source code files to be translated uploaded by terminals or source code files to be translated sent by other servers. The initial code sub-file refers to the source code file in the source code file to be translated that is of the smallest granularity and cannot be further expanded. The sub-file of code to be translated refers to the initial code sub-file matching the preset language type and needs to be translated into the target language type. The

code snippet to be translated in the code to be translated can be obtained by parsing the sub-file of code to be translated with the parser, and performing syntax analysis on the code to be translated in the sub-file of code to be translated to obtain code snippet to be translated in the code to be processed.

[0062] In an embodiment, as shown in FIG. 3, another method for code snippet correction is provided and is illustrated being applied to the code server 104 in FIG. 1, which includes the following steps:

[0063] At step 302, an initial translation detail report is acquired; the initial translation detail report includes a plurality of code snippets to be translated and translated code snippets and snippet positioning information corresponding to each of the code snippets to be translated, and the plurality of code snippets to be translated includes code snippets to be corrected.

[0064] At step 304, an inputted corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information is received.

[0065] At step 306, each code snippet to be corrected and corresponding corrected code snippet are regarded as a target correction item; and a target translation detail report is generated according to the plurality of target correction items and the snippet positioning information corresponding to each target correction item.

[0066] At step 308, the code correction configuration file is read; the Code correction configuration file includes a path of source code file to be corrected and a path of target translation detail report.

[0067] At step 310, the source code file to be corrected is acquired according to the path of source code file to be corrected.

[0068] At step 312, the target translation detail report is acquired according to the target translation detail report file path.

[0069] At step 314, the code snippet to be corrected is looked up in the source code file to be corrected according to the snippet positioning information corresponding to each target correction item.

[0070] At step 316, the code snippet to be corrected in the source code file to be corrected is replaced with the respective corrected code snippet.

[0071] At step 318, when corrective processing corresponding to all target correction items is detected to be completed, the source code file to be corrected is rewritten to obtain the corrected source code file.

[0072] In the described method for code snippet correction, after the code server obtains the initial translation detail report, the developer can filter out the code snippet to be corrected based on the translated code snippet, and input the corrected code snippet. The code server acquires the source code file to be corrected according to the path of source code file to be corrected in the code correction configuration file by reading the code correction configuration file, and acquires the target translation detail report according to the target translation detail report file path in the code correction configuration file. The code server can perform accurate corrective processing on the source code file to be corrected according to the corresponding snippet positioning information based on the target correction items in the target translation detail report. By automating the corrective processing of the source code file to be corrected based on the target translation detail report, the comprehensiveness and accuracy of the correction can be ensured, and the reliability of the code snippet correction result can be improved.

[0073] It should be appreciated that although the various steps in the flowcharts of FIGS. 2 to 3 are shown sequentially as indicated by the arrows, these steps are not necessarily performed sequentially in the order indicated by the arrows. The performance of these steps is not critical to the order in which they are performed unless explicitly stated herein, and the steps may be performed in other orders. Moreover, at least a part of the steps in FIGS. 2 to 3 may include a plurality of sub-steps or stages, which are not necessarily performed at the same time, but may be performed at different times, and the order in which the sub-steps or stages are performed is not necessarily performed sequentially, but may be performed in turns or alternatively with other steps or at least a part of sub-steps or stages of other steps.

[0074] In an embodiment, as shown in FIG. 4, an apparatus for code snippet correction 400 is provided, which includes a reading module 402 configured to a code correction configuration file uploaded by a terminal; the code correction

configuration file includes a path of source code file to be corrected and a path of target translation detail report; and read configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verify the configuration parameters; an acquiring module 404 configured to, when the configuration parameters pass the pre-verification, acquire a source code file to be corrected according to the path of source code file to be corrected; and acquire a target translation detail report according to the target translation detail report file path; the target translation detail report includes a plurality of target correction items and snippet positioning information corresponding to each target correction item; and a correction module 406 configured to traverse each target correction item in the target translation detail report, correct the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generate the corrected source code file.

[0075] In an embodiment, the apparatus further includes a generating module configured to acquire an initial translation detail report; the initial translation detail report includes a plurality of code snippets to be translated and translated code snippets and snippet positioning information corresponding to each of the code snippets to be translated, and the plurality of code snippets to be translated includes code snippets to be corrected; receive a corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information and inputted by the terminal; regard each code snippet to be corrected and corresponding corrected code snippet and context code snippet as a target correction item; and generate a target translation detail report according to the plurality of target correction items.

[0076] In an embodiment, the generation module is further configured to acquire a code jump instruction; the code jump instruction corresponds to a code snippet to be corrected; acquire the source code file to be corrected to which the code snippet belongs based on the code jump instruction; jump to show the source code file to be corrected according to the snippet positioning information corresponding to the code

snippet to be corrected; detect a code correction operation acting on the shown source code file to be corrected; and extract a corrected code snippet based on the code correction operation.

[0077] In an embodiment, the correction module 406 is further configured to extract the code snippet to be corrected corresponding to each target correction item in the target translation detail report and the respective corrected code snippet; look up the code snippet to be corrected in the source code file to be corrected according to the snippet positioning information corresponding to each target correction item; replace the code snippet to be corrected in the source code file to be corrected with a corresponding corrected code snippet; and when corrective processing corresponding to all target correction items is detected to be completed, rewrite the source code file to be corrected to obtain the corrected source code file.

[0078] In an embodiment, the generation module is further configured to acquire a set of analysis result to be translated; the set of analysis result to be translated includes a code snippet to be translated and a context code snippet corresponding to the code snippet to be translated; look up a code processor matching the code snippet to be translated; identify a target language type and a translation policy of the code snippet to be translated through the code processor and according to the context code snippet; call a translator interface provided by the code processor and obtain a translated code snippet of the target language type corresponding to the code snippet to be translated and translated based on the translation policy; and generate the initial translation detail report according to the code snippet to be translated and the translated code snippet and context code snippet corresponding to each code snippet to be translated.

[0079] In an embodiment, the generation module is further configured to acquire a source code file to be translated; read a source code directory in the source code file to be translated; the directory of the source code file to be translated includes a plurality of initial file names; traverse an initial code sub-file corresponding to each initial file name, and filter out a sub-file of code to be translated; the sub-file of code to be translated matches a preset language type; look up a parser matching the preset

language type; obtain the analysis result set through parsing the sub-file of code to be translated by the parser; the set of analysis result to be translated includes the code snippets to be translated in the sub-file of code to be translated and the context code snippets corresponding to the code snippets to be translated.

[0080] For specific definition of the apparatus for code snippet correction, reference may be made to the definition of the above method for code snippet correction, and details are omitted for brevity. Each of the modules in the apparatus for code snippet correction described may be entirely or partially implemented by software, hardware, or a combination thereof. Each of the modules may be embedded in or independent of the processor in the computer device in the form of hardware, or may be stored in the memory in the computer device in the form of software, so that the processor calls and executes the operations corresponding to each of the modules

[0081] In an embodiment, a computer device is provided, which may be a server and an internal structure thereof may be as shown in FIG. 5. The computer device includes a processor, a memory, a network interface, and a database connected through a system bus. The processor of the computer device is configured to provide calculation and control capabilities. The memory of the computer device includes a non-transitory storage medium and a random access memory (RAM). The non-transitory storage medium stores an operating system, computer-readable instructions and the database. The RAM provides an environment for the operation of the operating system and the computer-readable instructions in the non-transitory storage medium. The database of the computer device is configured to store data such as the set of analysis result to be translated. The network interface of the computer device is configured to communicate with an external terminal through a network connection. The computer-readable instructions are executed by the processor to implement the method for code snippet translation.

[0082] Those skilled in the art will appreciate that the structure shown in FIG. 5 is merely a block diagram of a portion of the structure associated with the solution of the present disclosure, and does not constitute a limitation on the computer device to

which the solution of the present disclosure is applied, a particular computer device may include more or less components, or combine certain components, or with a different arrangement of components.

[0083] In an embodiment, a computer device is provided, which includes a memory and one or more processors, the memory store computer-readable instructions that, when executed by the one or more processors, cause the one or more processors to perform the steps of the method for code snippet positioning according to any of the foregoing embodiments.

[0084] In an embodiment, one or more non-volatile computer-readable storage medium is provided, which stores computer-readable instructions that, when executed by one or more processors, causing the one or more processors to perform the steps of the method for code snippet positioning according to any of the foregoing embodiments.

[0085] Persons of ordinary skill in the art understand that all or part of the processes in the methods of the foregoing embodiments may be implemented by a computer program instructing relevant hardware. The computer program may be stored in a non-transitory computer-readable storage medium. When the computer program is executed, flows of embodiments of the methods as described above may be included. Any references to memory, storage, databases, or other media used in the various embodiments provided herein may include non-transitory and/or transitory memory. The non-transitory memory may include a read only memory (ROM), a programmable ROM (PROM), an electrically programmable ROM (EPROM), an electrically erasable programmable ROM (EEPROM), or a flash memory. The transitory memory may include a random access memory (RAM) or an external cache memory. By way of illustration and not limitation, RAM is available in a variety of forms such as static RAM (SRAM), dynamic RAM (DRAM), synchronous DRAM (SDRAM), double data rate SDRAM (DDRSDRAM), enhanced SDRAM (ESDRAM), Synchlink DRAM (SLDRAM), Memory Bus (Rambus) Direct RAM (RDRAM), Direct Memory Bus Dynamic RAM (DRDRAM), Memory Bus Dynamic RAM (RDRAM) etc.

[0086] The foregoing respective technical features involved in the respective embodiments can be combined arbitrarily, for brevity, not all possible combinations of the respective technical features in the foregoing embodiments are described, however, to the extent they have no collision with each other, the combination of the respective technical features shall be considered to be within the scope of the description.

[0087] The foregoing implementations are merely specific embodiments of the present disclosure, and are not intended to limit the protection scope of the present disclosure. It should be noted that any variation or replacement readily figured out by persons skilled in the art within the technical scope disclosed in the present disclosure shall all fall into the protection scope of the present disclosure. Therefore, the protection scope of the present disclosure shall be subject to the protection scope of the claims.

What is claimed is:

1. A method for code snippet correction applied to a code server, the method comprising:

reading a code correction configuration file uploaded by a terminal; the code correction configuration file comprising a path of source code file to be corrected and a path of target translation detail report;

reading configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verifying the configuration parameters;

when the configuration parameters pass the pre-verification, acquiring a source code file to be corrected according to the path of source code file to be corrected;

acquiring a target translation detail report according to the target translation detail report file path; the target translation detail report comprising a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

traversing each target correction item in the target translation detail report, correcting the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generating the corrected source code file.

2. The method according to claim 1, wherein before the reading the code correction configuration file, the method further comprising:

acquiring an initial translation detail report; the initial translation detail report including a plurality of code snippets to be translated and translated code snippets and snippet positioning information corresponding to each of the code snippets to be translated, and the plurality of code snippets to be translated comprising code snippets to be corrected;

receiving a corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information and inputted by the terminal;

regarding each code snippet to be corrected and corresponding corrected code

snippet and context code snippet as a target correction item; and

generating a target translation detail report according to the plurality of target correction items.

3. The method according to claim 2, wherein the receiving the corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information and inputted by the terminal comprises:

acquiring a code jump instruction uploaded by the terminal; the code jump instruction corresponding to the code snippet to be corrected;

acquiring a source code file to be corrected to which the code snippet to be corrected belongs based on the code jump instruction;

jumping to show the source code file to be corrected according to the snippet positioning information corresponding to the code snippet to be corrected;

detecting a code correction operation acting on the shown source code file to be corrected; and

extracting a corrected code snippet based on the code correction operation and inputted by the terminal.

4. The method according to claim 2, wherein the traversing each target correction item in the target translation detail report, correcting the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generating the corrected source code file comprises:

extracting the code snippet to be corrected corresponding to each target correction item in the target translation detail report and the respective corrected code snippet;

looking up the code snippet to be corrected in the source code file to be corrected according to the snippet positioning information corresponding to each target correction item;

replacing the code snippet to be corrected in the source code file to be corrected with a corresponding corrected code snippet; and

when corrective processing corresponding to all target correction items is detected to be completed, rewriting the source code file to be corrected to obtain the corrected source code file.

5. The method according to claim 2, wherein the acquiring the initial translation detail report comprises:

- acquiring a set of analysis result to be translated; the set of analysis result to be translated comprises a code snippet to be translated and a context code snippet corresponding to the code snippet to be translated;

- looking up a code processor matching the code snippet to be translated;

- performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target language type and a translation policy of the code snippet to be translated;

- performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target language type and a translation policy of the code snippet to be translated;

- calling a translator interface provided by a translator system by the code processor, the translator system being deployed on a translation server, the translator system translating the code snippet to be translated into a translated code snippet of corresponding target language type based on the translation policy; and

- generating the initial translation detail report according to the code snippet to be translated and the translated code snippet and context code snippet corresponding to each code snippet to be translated.

6. The method according to claim 5, wherein the acquiring the set of analysis result to be translated comprises:

- acquiring a source code file to be translated;

- reading a source code directory in the source code file to be translated; the directory of the source code file to be translated comprises a plurality of initial file names;

traversing an initial code sub-file corresponding to each initial file name, and filtering out a sub-file of code to be translated; the sub-file of code to be translated matching a preset language type;

looking up a parser matching the preset language type; and

acquiring snippet positioning information of the code snippet to be translated in the sub-file of code to be translated by the parser, extracting the code snippet to be translated based on the sub-file of code to be translated, and generating the set of analysis result to be translated according to the code snippet to be translated and the snippet positioning information; the set of analysis result to be translated comprising the code snippet to be translated in the sub-file of code to be translated and the context code snippet corresponding to the code snippet to be translated.

7. An apparatus for code snippet correction, comprising:

a reading module configured to read a code correction configuration file uploaded by a terminal; the code correction configuration file comprising a path of source code file to be corrected and a path of target translation detail report; and read configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verify the configuration parameters;

an acquiring module configured to, when the configuration parameters pass the pre-verification, acquire a source code file to be corrected according to the path of source code file to be corrected; and acquire a target translation detail report according to the target translation detail report file path; the target translation detail report comprising a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

a correction module configured to traverse each target correction item in the target translation detail report, correct the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generate the corrected source code file.

8. The apparatus according to claim 7, wherein the apparatus further comprises a generating module configured to acquire an initial translation detail report; the initial translation detail report comprising a plurality of code snippets to be translated and translated code snippets and snippet positioning information corresponding to each of the code snippets to be translated, and the plurality of code snippets to be translated comprising code snippets to be corrected; receive a corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information and inputted by the terminal; regard each code snippet to be corrected and corresponding corrected code snippet and context code snippet as a target correction item; and generate a target translation detail report according to the plurality of target correction items.

9. A computer device comprising a memory and one or more processors, the memory storing computer-readable instructions that, when executed by the one or more processors, causing the one or more processors to perform the following steps:

- reading a code correction configuration file uploaded by a terminal; the code correction configuration file comprising a path of source code file to be corrected and a path of target translation detail report;

- reading configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verify the configuration parameters;

- when the configuration parameters pass the pre-verification, acquiring a source code file to be corrected according to the path of source code file to be corrected;

- acquiring a target translation detail report according to the target translation detail report file path; the target translation detail report comprising a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

- traversing each target correction item in the target translation detail report, correct the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generate the corrected

source code file.

10. The computer device according to claim 9, wherein when the computer-readable instructions are executed by the one or more processors, further causing the one or more processors to perform the following steps:

- acquiring an initial translation detail report; the initial translation detail report comprising a plurality of code snippets to be translated and translated code snippets and snippet positioning information corresponding to each of the code snippets to be translated, and the plurality of code snippets to be translated comprising code snippets to be corrected;

- receiving a corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information and inputted by the terminal;

- regarding each code snippet to be corrected and corresponding corrected code snippet and context code snippet as a target correction item; and

- generating a target translation detail report according to the plurality of target correction items.

11. The computer device according to claim 10, wherein when the computer-readable instructions are executed by the one or more processors, further causing the one or more processors to perform the following steps:

- acquiring a code jump instruction uploaded by the terminal; the code jump instruction corresponds to the code snippet to be corrected;

- acquiring a source code file to be corrected to which the code snippet to be corrected belongs based on the code jump instruction;

- jumping to show the source code file to be corrected according to the snippet positioning information corresponding to the code snippet to be corrected;

- detecting a code correction operation acting on the shown source code file to be corrected; and

- extracting a corrected code snippet based on the code correction operation and inputted by the terminal.

12. The method according to claim 10, wherein the computer device, when the computer-readable instructions are executed by the one or more processors, causes the one or more processors to further perform the following steps:

- extracting the code snippet to be corrected corresponding to each target correction item in the target translation detail report and the respective corrected code snippet;

- looking up the code snippet to be corrected in the source code file to be corrected according to the snippet positioning information corresponding to each target correction item;

- replacing the code snippet to be corrected in the source code file to be corrected with a corresponding corrected code snippet; and

- when corrective processing corresponding to all target correction items is detected to be completed, rewriting the source code file to be corrected to obtain the corrected source code file.

13. The computer device according to claim 10, wherein when the computer-readable instructions are executed by the one or more processors, further causing the one or more processors to perform the following steps:

- acquiring a set of analysis result to be translated; the set of analysis result to be translated comprises a code snippet to be translated and a context code snippet corresponding to the code snippet to be translated;

- looking up a code processor matching the code snippet to be translated;

- performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target language type and a translation policy of the code snippet to be translated;

- performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target language type and a translation policy of the code snippet to be translated;

- calling a translator interface provided by a translator system by the code

processor, the translator system being deployed on a translation server, the translator system translating the code snippet to be translated into a translated code snippet of corresponding target language type based on the translation policy; and

generating the initial translation detail report according to the code snippet to be translated and the translated code snippet and context code snippet corresponding to each code snippet to be translated.

14. The computer device according to claim 13, wherein when the computer-readable instructions are executed by the one or more processors, further causing the one or more processors to perform the following steps:

acquiring a source code file to be translated;

reading a source code directory in the source code file to be translated; the directory of the source code file to be translated comprises a plurality of initial file names;

traversing an initial code sub-file corresponding to each initial file name, and filtering out a sub-file of code to be translated; the sub-file of code to be translated matching a preset language type;

looking up a parser matching the preset language type; and

acquiring snippet positioning information of the code snippet to be translated in the sub-file of code to be translated by the parser, extracting the code snippet to be translated based on the sub-file of code to be translated, and generating the set of analysis result to be translated according to the code snippet to be translated and the snippet positioning information; the set of analysis result to be translated comprising the code snippet to be translated in the sub-file of code to be translated and the context code snippet corresponding to the code snippet to be translated.

15. One or more non-volatile computer-readable storage medium storing computer-readable instructions that, when executed by one or more processors, causing the one or more processors to perform the following steps:

reading a code correction configuration file uploaded by a terminal; the code

correction configuration file comprising a path of source code file to be corrected and a path of target translation detail report;

reading configuration parameters corresponding to the path of source code file to be corrected and the path of target translation detail report, and pre-verifying the configuration parameters;

when the configuration parameters pass the pre-verification, acquiring a source code file to be corrected according to the path of source code file to be corrected;

acquiring a target translation detail report according to the target translation detail report file path; the target translation detail report comprising a plurality of target correction items and snippet positioning information corresponding to each target correction item; and

traversing each target correction item in the target translation detail report, correcting the source code file to be corrected according to the snippet positioning information corresponding to each target correction item, and generating the corrected source code file.

16. The storage medium according to claim 15, wherein when the computer-readable instructions are executed by one or more processors, further causing the one or more processors to perform the following steps:

acquiring an initial translation detail report; the initial translation detail report comprising a plurality of code snippets to be translated and translated code snippets and snippet positioning information corresponding to each of the code snippets to be translated, and the plurality of code snippets to be translated comprising code snippets to be corrected;

receiving a corrected code snippet based on the code snippet to be corrected and corresponding snippet positioning information and inputted by the terminal;

regarding each code snippet to be corrected and corresponding corrected code snippet and context code snippet as a target correction item; and

generating a target translation detail report according to the plurality of target correction items.

17. The storage medium according to claim 16, wherein when the computer-readable instructions are executed by one or more processors, further causing the one or more processors to perform the following steps:

- acquiring a code jump instruction uploaded by the terminal; the code jump instruction corresponds to the code snippet to be corrected;

- acquiring a source code file to be corrected to which the code snippet to be corrected belongs based on the code jump instruction;

- jumping to show the source code file to be corrected according to the snippet positioning information corresponding to the code snippet to be corrected;

- detecting a code correction operation acting on the shown source code file to be corrected; and

- extracting a corrected code snippet based on the code correction operation and inputted by the terminal.

18. The storage medium according to claim 16, wherein when the computer-readable instructions are executed by one or more processors, further causing the one or more processors to perform the following steps:

- extracting the code snippet to be corrected corresponding to each target correction item in the target translation detail report and the respective corrected code snippet;

- looking up the code snippet to be corrected in the source code file to be corrected according to the snippet positioning information corresponding to each target correction item;

- replacing the code snippet to be corrected in the source code file to be corrected with a corresponding corrected code snippet; and

- when corrective processing corresponding to all target correction items is detected to be completed, rewriting the source code file to be corrected to obtain the corrected source code file.

19. The storage medium according to claim 16, wherein when the computer-readable instructions are executed by one or more processors, further causing the one or more processors to perform the following steps:

- acquiring a set of analysis result to be translated; the set of analysis result to be translated comprises a code snippet to be translated and a context code snippet corresponding to the code snippet to be translated;

- looking up a code processor matching the code snippet to be translated;

- performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target language type and a translation policy of the code snippet to be translated;

- performing a syntax analysis on the code snippet to be translated according to the context code snippet by the code processor and identifying a target language type and a translation policy of the code snippet to be translated;

- calling a translator interface provided by a translator system by the code processor, the translator system being deployed on a translation server, the translator system translating the code snippet to be translated into a translated code snippet of corresponding target language type based on the translation policy; and

- generating the initial translation detail report according to the code snippet to be translated and the translated code snippet and context code snippet corresponding to each code snippet to be translated.

20. The storage medium according to claim 19, wherein when the computer-readable instructions are executed by one or more processors, further causing the one or more processors to perform the following steps:

- acquiring a source code file to be translated;

- reading a source code directory in the source code file to be translated; the directory of the source code file to be translated comprises a plurality of initial file names;

- traversing an initial code sub-file corresponding to each initial file name, and filtering out a sub-file of code to be translated; the sub-file of code to be translated

matching a preset language type;

looking up a parser matching the preset language type; and

acquiring snippet positioning information of the code snippet to be translated in the sub-file of code to be translated by the parser, extracting the code snippet to be translated based on the sub-file of code to be translated , and generating the set of analysis result to be translated according to the code snippet to be translated and the snippet positioning information; the set of analysis result to be translated comprising the code snippet to be translated in the sub-file of code to be translated and the context code snippet corresponding to the code snippet to be translated.