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(54) Title: SYSTEM FOR EXTRACTING, TRANSFORMING, AND STANDARDIZING PET-RELATED DATA INTO A USE-ABLE AND SHAREABLE FORMAT FOR USE IN A CONNECTED NETWORK OF PROFESSIONALS

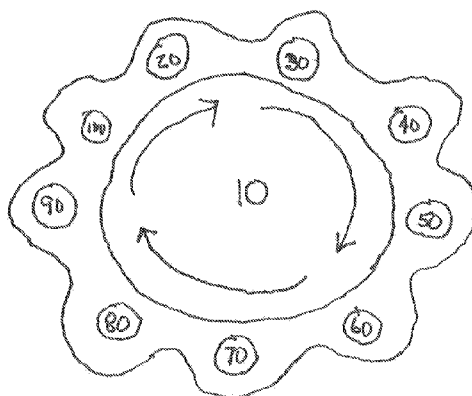


Fig. 1

(57) Abstract: A computer implemented method for standardizing at least one set of data from at least one location is provided. The method includes receiving, at a network system, from a first device, a request for the at least one set of data. The method further includes extracting the at least one set of data from a first location and transferring the at least one set of data to the network system. The method also includes standardizing the at least one set of data into a proprietary language.



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SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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**SYSTEM FOR EXTRACTING, TRANSFORMING, AND STANDARDIZING PET-
RELATED DATA INTO A USEABLE AND SHAREABLE FORMAT FOR USE IN A
CONNECTED NETWORK OF PROFESSIONALS**

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 63/535,723 filed August 31, 2023, the disclosure of which is incorporated herein by reference.

FIELD OF THE INVENTION

[0002] This disclosure relates generally to network systems and, more particularly, to a system utilizing proprietary software and a cloud-based server for extracting, transforming, and standardizing pet-related data from a plurality of fields and/or professionals in a useable, shareable, and storable format to a connected network for pet owners, pet-related professionals, and possible others to access and use.

BACKGROUND OF THE INVENTION

[0003] It is well known that pets, such as dogs and cats have a vast amount of data associated with them, including but not limited to health, wellness, and life style data. For example, every pet may have the following data associated with it: (i) personal information (name, birth date, breed, color, and ownership information, i.e., address and contact information); (ii) pet health information (veterinarian, medical history, vaccination history, and medications); (iii) boarding information (preferred boarding location, eating habits, dietary restrictions, exercise information, pet visit invoices and payments, and ability to play with others); (iv) grooming information (preferred groomer, cut, shampoo, pet visit invoices and payments, and nail preferences; and (v) subscriptions, wellness plans, insurance policies, concierge plans/service retainer plans for pet health, wellness and lifestyle related needs.

[0004] There are a number of problems associated with this type of pet-related data, such as each piece of data information may come from a different source and, thus, the terminology

and format of the associated data can come in many different forms depending on the source of the data even though it is the same data. For example, one veterinarian practice may use a code of RAB1YR with a description of Rabies 1 year, while a different veterinarian practice may use a code of 00134 and a description of 1 year Rabies vaccination. Despite both descriptions
5 meaning the same thing to the individual veterinarian practice, the lack of standardization makes it difficult to understand and use in practice. Furthermore, veterinary data is notoriously messy and lacks any true standard for code sets and protocols.

[0005] Accordingly, there is a need for a system or platform that allows for extracting, transforming, and standardizing a wide variety of pet-related data relating to both pet medical
10 records and lifestyle data from a plethora of different sources into a standardized, storable, and portable format that is easy to access, understand, and use by pet owners, pet related professionals, and others in a variety of different applications in order to greatly improve medical outcomes, practice efficiencies and profitability, and the pet related lifestyle experience in terms of time, expense, and simplicity.

SUMMARY OF THE INVENTION

[0006] In accordance with the purposes and benefits described herein, a computer implemented method for standardizing at least one set of data from at least one location is provided. The method includes receiving, at a network system, from a first device, a
20 request for the at least one set of data. The method further includes extracting the at least one set of data from a first location and transferring the at least one set of data to the network system. The method also includes standardizing the at least one set of data into a proprietary language.

[0007] In one embodiment, the standardizing step includes initially normalizing
25 the at least one set of data. The network system may be a cloud-based network system. The first device may be a first computing device. In another embodiment may include storing the at least one set of data in the proprietary language such that it may be accessed via a second device. The second device is a second computing device. The at least one set of data is pet-related data, which may be personal information about a pet,
30 health information about a pet, boarding information about a pet, grooming information

about a pet, subscriptions, wellness plans, insurance policies, and concierge plans for a pet.

[0008] In yet another embodiment, the method includes receiving, at the network system, from the first device, another request for at least another set of data. The method
5 also includes extracting the at least another set of data from a second location. The method further includes transferring the at least another set of data to the network system. The method further includes standardizing the at least another set of data into the proprietary language.

[0009] In accordance with another aspect of the disclosure, a method of displaying
10 a plurality of data related to a specific animal using a cloud-based network is provided. The method includes providing a first computing device to extract one of the plurality of data from a first location. The method also includes transferring the extracted data into the cloud-based network. The method further includes normalizing the transferred data. The method also includes utilizing a standardization engine to standardize the normalized
15 data. The method further includes storing the standardized data in a second location.

[0010] In one embodiment, the storing step includes transforming the standardized data into a proprietary language such that it may be accessed via a second device. In another embodiment, the plurality of data may be personal information about the specific animal, health information about the specific animal, is boarding information about the
20 specific animal, grooming information about the specific animal, or subscriptions, wellness plans, insurance policies, and concierge plans for about the specific animal.

[0011] In yet another embodiment, the method includes receiving, at the network, from the first device, another request for another one of the plurality of data. The method further includes extracting the another one of the plurality of data from a second location.
25 The method further includes transferring the another one of the plurality of data to the network. The method further includes standardizing the another one of the plurality of data into a proprietary language. The method further includes allowing a user via a second computing device to access the stored standardized data.

[0012] In accordance with yet another aspect of this disclosure, a non-transitory
30 tangible machine readable medium comprising instructions configured to cause at least one

processor to perform a process is provided. The medium includes: (i) receiving an input over a network from a first computing device to access one or more data points located on a remote computing device; (ii) allowing the first computing device to access the remote computing device and extract one or more data points; (iii) transferring the extract one or more data points to the network; (iv) standardizing the transferred one or more data points; and (v) providing a user via a second computing device to access the standardized one or more data points.

[0013] In one embodiment, the one or more data points is personal information, health information, grooming information, boarding information or subscriptions, wellness plans, insurance policies, and concierge plans for a pet.

[0014] In accordance with still yet another aspect of this disclosure, a system for extracting, transforming, and standardizing pet-related data from a plurality of professionals in a useable, shareable, and storable format to a connected network for others to access. The system includes a memory and one or more processors associated with the memory. The system further includes an extraction component executable by the one or more processors configured to extract the pet-related data from the plurality of professionals and transfer said pet-related data to the connected network. The system also includes a standardization component executable by the one or more processors configured to standardize the extracted pet-related data into a proprietary format. The system further includes a user input allowing a plurality of different users, after verification, to access a specified portion of the standardized pet-related data in the proprietary format specific to a particular one of the plurality of different users.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

[0015] The accompanying drawings incorporated in and forming a part of the specification, illustrate several aspects of this disclosure, and together with the description serve to explain the principles of the disclosure. In the drawings:

[0016] Figure 1 is a chart illustrating a number of different sources of pet-related data that may be extracting, transforming, and standardizing by the system forming one aspect of this disclosure; and

[0017] Figure 2 is a diagram illustrating the steps of the system, including connection,

extraction, transferring, transforming, normalizing, standardizing, and storing the data forming one aspect of this disclosure.

5 DETAILED DESCRIPTION

[0018] In the following detailed description, reference is made to the accompanying drawings that form a part hereof, and in which is shown by way of illustration, specific embodiments in which the invention may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the embodiments and like numerals represent like details in the various figures. Also, it is to be understood that other embodiments may be utilized and that process or other changes may be made without departing from the scope of the disclosure. The following detailed description is not to be taken in a limiting sense, and the scope of the invention is defined only by the appended claims and their equivalents. In accordance with the disclosure, a system for extracting, transforming, and standardized pet-related data from a plurality of professionals in a useable and shareable format to a connected network for a pet owner to access and use is hereinafter described.

[0019] Reference is now made to Figures 1 and 2, which illustrate a network system 10 utilizing proprietary software and a cloud-based server for extracting, transforming, and standardizing pet-related data from a plurality of professionals in a useable and shareable format to a connected network for a pet owner to access and use. Proprietary software may be loaded on one computing device, such as a mobile application on a cellular phone or tablet or a stand-alone computing device, mobile or otherwise, which connects virtually to data sources located on one or more additional computing devices. The data sources may be information from veterinary practices, i.e., a pet's complete medical history, including laboratory tests, vaccination records and current and past use of medications. Importantly, this medical information may be collected by being pulled or extracted, and standardized from multiple veterinary practices into one place.

[0020] Furthermore, this information may be pulled or extracted by an extraction component, and standardized from other sources, such as: (i) personal information about the pet, including name, birth date, breed, color, and ownership information, i.e., address and contact information; (ii) pet health information, including veterinarian, medical history, vaccination

history, and medications; (iii) boarding information, including preferred boarding location, eating habits, dietary restrictions, exercise information, pet visit invoices and payments, and ability to play with others; (iv) grooming information, including preferred groomer, cut, shampoo, pet visit invoices and payments, and nail preferences; and (v) subscriptions, wellness plans, insurance policies, concierge plans/service retainer plans for pet health, wellness and lifestyle related needs.

[0021] In addition to these broader fields discussed above, Figure 1 illustrates other data may include but not limited to general practice data 20, alternative care data 30, pet retail data 40, diagnostics 50, Software as a Service (SaaS) solutions 60, Internet of Things (IoT) devices 70, boarding data 80, grooming data 90, and specialty data 100 that may be accessed and standardized by the system. In more detail, the proprietary software connects to these remote data sources, extracts exact copies of the data, and then dumps the data into a holding place such that it may be organized and put into records. The data may be extracted by utilizing advanced delta compression and remote file synchronization to minimize use of practice bandwidth and maximize transfer speed. In one particularly embodiment, the data is transferred to the system's cloud-based network or "cloud."

[0022] As shown in Figure 2, in the cloud, the extracted data is transformed and normalized into a proprietary structure or schema for further processing. For example, data from PMS 110, lab data 120, retail data 130 and IOT data 140 is extracted into the cloud 150. Within the cloud, the data is first normalized and then may be standardized utilizing a software or data standardization engine or component, such as DAYLIGHT™ (as discussed in more detail below). A user may then access the standardized data via a second computing device 160, such as via a mobile application on his/her phone.

[0023] Because the transformation is performed in the cloud, issues can be resolved quickly and functionality expanded without contacting the practices or source of the original data. Furthermore, software updates do not break integration within the cloud. Data may be stored in the cloud without co-mingling with other extracted data for other pets. Specifically, the extracted data is transformed and normalized into a particular proprietary structure, i.e., a mapping/categorizing. At this point, the normalized data is standardized to another proprietary taxonomy using a software or data standardization engine or component, such as DAYLIGHT™,

which performs a data compilation. Advantageously, DAYLIGHT™ functions as a Standardization as a Service to remove the complexity of comparing disparate data sets. In more detail, the data from any source is mapped to the most granular level possible and then cross-walked to a particularly taxonomy and preferred level of detail for ease of use. Subsequently, the system displays the standardized data in an easy to understand format, regardless of the original source of the data in a library in a mobile application or some other storage location.

[0024] This system creates a connected network of professionals dedicated to creating a seamless wellness journey for the pet and provides numerous advantages. For example, the standardized data includes a pet's full medical, wellness, and lifestyle history, so it is easily accessible by pet owner and can be shared with a relevant professional, i.e., another veterinarian in the event the family is on vacation. Furthermore, the data may be easily shared among all the pet's health, wellness, and lifestyle providers, so they are connected in knowledge about the pet and may better serve the pet based on the shared knowledge. The unique standardization of the data with portability means allows for better information for the pet's professional service providers, which leads to better recommendations from said providers. In other words, because the data is standardized, it is more easily understood and enhances its portability.

[0025] The foregoing descriptions of various embodiments have been presented for purposes of illustration and description. These descriptions are not intended to be exhaustive or to limit the invention to the precise forms disclosed. The embodiments described provide the best illustration of the inventive principles and their practical applications to thereby enable one of ordinary skill in the art to utilize the disclosure in various embodiments and with various modifications as are suited to the particular use contemplated.

What is Claimed:

1. A computer implemented method for standardizing at least one set of data from at least one location, comprising:

receiving, at a network system, from a first device, a request for the at least one set of data;

extracting the at least one set of data from a first location;

transferring the at least one set of data to the network system;

standardizing the at least one set of data into a proprietary language.

2. The method of claim 1, wherein the standardizing step includes initially normalizing the at least one set of data.

3. The method of claim 1, wherein the network system is a cloud-based network system.

4. The method of claim 1, wherein the first device is a first computing device.

5. The method of claim 1, further including storing the at least one set of data in the proprietary language such that it may be accessed via a second device.

6. The method of claim 5, wherein the second device is a second computing device.

7. The method of claim 1, wherein the at least one set of data is pet-related data.

8. The method of claim 7, wherein the pet-related data is personal information about a pet.

9. The method of claim 7, wherein the pet-related data is health information about a pet.

10. The method of claim 7, wherein the pet-related data is boarding information about a pet.

11. The method of claim 7, wherein the pet-related data is grooming information about a pet.

12. The method of claim 7, wherein the pet-related data includes subscriptions, wellness plans, insurance policies, and concierge plans for a pet.

13. The method of claim 1, further including receiving, at the network system, from the first device, another request for at least another set of data.

14. The method of claim 13, further including extracting the at least another set of data from a second location.

15. The method of claim 14, further including transferring the at least another set of data to the network system.

16. The method of claim 15, further including standardizing the at least another set of data into the proprietary language.

17. A method of displaying a plurality of data related to a specific animal using a cloud-based network, comprising:

providing a first computing device to extract one of the plurality of data from a first location;

transferring the extracted data into the cloud-based network;

normalizing the transferred data;

utilizing a standardization engine to standardize the normalized data; and

storing the standardized data in a second location.

18. The method of claim 17, wherein the storing step includes transforming the standardized data into a proprietary language such that it may be accessed via a second device.

19. The method of claim 17, wherein the plurality of data is personal information about the specific animal.

20. The method of claim 17, wherein the plurality of data is health information about the specific animal.

21. The method of claim 17, wherein the plurality of data is boarding information about the specific animal.

22. The method of claim 17, wherein the plurality of data is grooming information about the specific animal.

23. The method of claim 17, wherein the plurality of data includes subscriptions, wellness plans, insurance policies, and concierge plans for about the specific animal.

24. The method of claim 17, further including receiving, at the network, from the first device, another request for another one of the plurality of data.

25. The method of claim 24, further including extracting the another one of the plurality of data from a second location.

26. The method of claim 25, further including transferring the another one of the plurality of data to the network.

27. The method of claim 26, further including standardizing the another one of the plurality of data into a proprietary language.

28. The method of claim 27, further including allowing a user via a second computing device to access the stored standardized data.

29. A non-transitory tangible machine readable medium comprising instructions configured to cause at least one processor to perform a process, comprising:

receiving an input over a network from a first computing device to access one or more data points located on a remote computing device;

allowing the first computing device to access the remote computing device and extract one or more data points;

transferring the extract one or more data points to the network;

standardizing the transferred one or more data points; and

providing a user via a second computing device to access the standardized one or more data points.

30. The medium according to claim 29, wherein the one or more data points is personal information about a pet.

31. The medium according to claim 29, wherein the one or more data points is health information about a pet.

32. The medium according to claim 29, wherein the one or more data points is grooming information about a pet.

33. The medium according to claim 29, wherein the one or more data points is boarding information about a pet.

34. The medium according to claim 29, wherein the one or more data points is one or more of subscriptions, wellness plans, insurance policies, and concierge plans for a pet.

35. A system for extracting, transforming, and standardizing pet-related data from a plurality of professionals in a useable, shareable, and storable format to a connected network for others to access, comprising:

- a memory;

- one or more processors associated with the memory;

- an extraction component executable by the one or more processors configured to extract the pet-related data from the plurality of professionals and transfer said pet-related data to the connected network;

- a standardization component executable by the one or more processors configured to standardize the extracted pet-related data into a proprietary format;

- a user input allowing a plurality of different users, after verification, to access a specified portion of the standardized pet-related data in the proprietary format specific to a particular one of the plurality of different users.

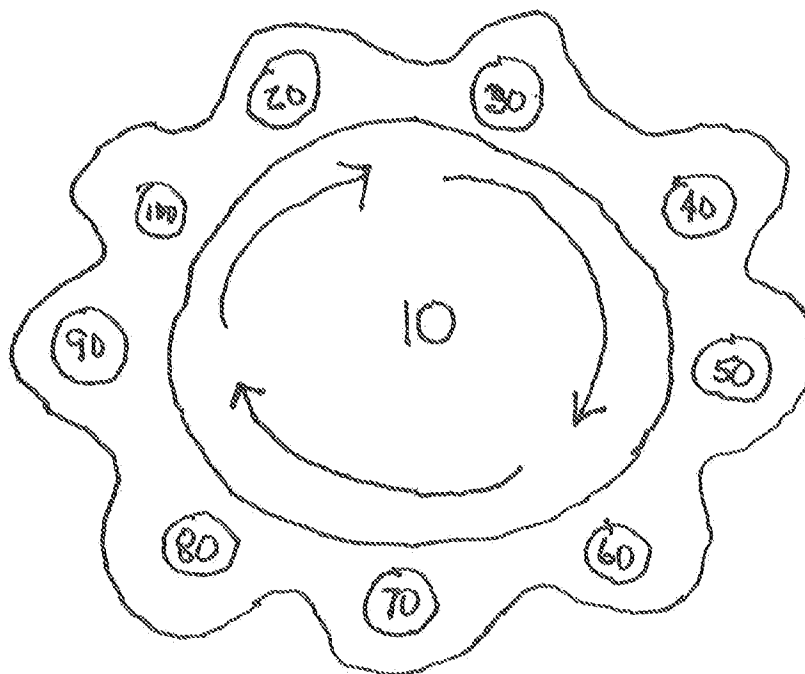


FIG. 1

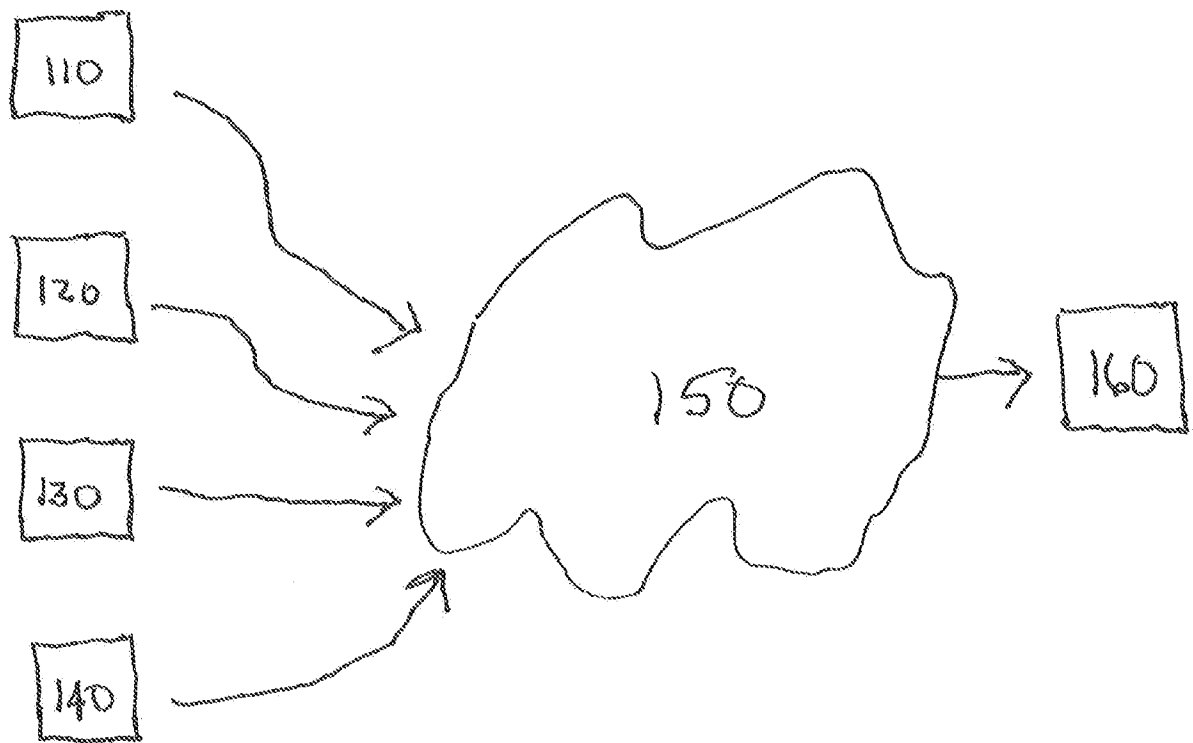


FIG. 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2024/044667

A. CLASSIFICATION OF SUBJECT MATTER IPC: G06F 16/84 (2024.01); G16H 80/00 (2024.01); A01K 13/00 (2024.01) CPC: G06F 16/84 ; G16H 80/00 ; A01K 13/00 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) See Search History Document Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched See Search History Document Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) See Search History Document		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2014/0379718 A1 (VIRTUAL RADIOLOGIC CORPORATION) 25 December 2014 (25.12.2014) entire document	1-6, 13-18, 24-29
Y	entire document	7-11, 19-22, 30-33, 35
Y	US 2003/0204417 A1 (MIZE) 30 October 2003 (30.10.2003) entire document	7-11, 19-21, 30, 31, 33, 35
A	entire document	12, 23, 34
A	US 2005/0154979 A1 (CHIDLOVSKII et al.) 14 July 2005 (14.07.2005) entire document	1-35
A	US 2012/0265702 A1 (MAHER) 18 October 2012 (18.10.2012) entire document	1-35
☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.		
* Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “D” document cited by the applicant in the international application “E” earlier application or patent but published on or after the international filing date “L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) “O” document referring to an oral disclosure, use, exhibition or other means “P” document published prior to the international filing date but later than the priority date claimed “T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention “X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone “Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art “&” document member of the same patent family		
Date of the actual completion of the international search 06 October 2024 (06.10.2024)		Date of mailing of the international search report 11 October 2024 (11.10.2024)
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, VA 22313-1450 Facsimile No. 571-273-8300		Authorized officer MATOS TAINA Telephone No. 571-272-4300

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2024/044667

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2017/0185714 A1 (VIRTUAL RADIOLOGIC CORPORATION) 29 June 2017 (29.06.2017) entire document	1-35
Y	FORREST et al. "Pet ownership in Aotearoa New Zealand: A national survey of cat and dog owner practices." Animals 13.4 (2023): 631. 11 February 2023 (11.02.2023) Retrieved on 06 October 2024 (06.10.2024) from < https://www.mdpi.com/2076-2615/13/4/631 > entire document	11, 22, 32
A	FREEDMAN et al. "A novel tool for standardizing clinical data in a semantically rich model." Journal of Biomedical Informatics 112 (2020): 100086. Retrieved on 06 October 2024 (06.10.2024) from < https://www.sciencedirect.com/science/article/pii/S2590177X20300214 > entire document	1-35