

Note: Constraints that were not captured by our ER diagram will be indicated as a note beside the relevant constraints.

1. Users are identified by their username. For each user, their name, password, address and email address must be recorded.
2. PCS administrators are identified by their username. For each PCS administrator, their password must be recorded.
3. Each user can only be a caretaker or a pet owner or both a caretaker and pet owner.
4. A caretaker must be verified by a PCS Administrator before advertising their availabilities and taking on any caretaking jobs.
5. Each pet owner must own 1 or more pets.
6. Each pet must be owned by exactly 1 pet owner. If the pet owner is deleted, there is no need to keep track of all of his/her owned pet(s). The pet id uniquely identifies a pet from all other pets.
7. For each pet, their name and special caretaking requirements must be recorded.
8. Each pet must belong to exactly 1 pet category.
9. Pet Categories are identified by their name.
10. The PCS administrator sets the base daily price for the caring of each pet category. Every pet category must have exactly one base daily price.
11. Each caretaker must be either a full-time caretaker or part-time caretaker.
12. A caretaker can advertise their availability, which is identified uniquely by the availability\_id, and consists of the start and end date of their availability period.
13. A full-time caretaker is treated as available till the end of the current year unless they apply for leave and the leave is approved. Part-time caretakers can specify their availability for the current and next year. **(Not captured in ER diagram)**
14. If the caretaker is deleted, there is no need to keep track of all of his/her advertised availabilities.
15. For each availability period, the caretaker can specify exactly one daily price for each pet category that they are able to take care of.
16. If the caretaker is working full-time, then the daily price should not be set lower than the base daily price set by the PCS Admin for that particular pet category. **(Not captured in ER diagram)**
17. A caretaker must specify, for a given availability period, at least one pet category that he/she is able to care for.
18. A caretaker cannot care for pets that do not belong to the set of pet categories that he/she is able to care for.
19. A pet owner can bid for the services of caretakers for his/her pets based on the caretakers' advertised availability, the pet categories that the caretakers are able to care for and the daily rate.
20. A pet owner cannot bid for the services of a caretaker to care for a pet that they do not own.
21. A pet owner looking for caretaking services for his/her pet P that has a pet category C cannot make a bid for a caretaker that did not advertise C as a pet category that he/she is able to care for. **(Not captured in ER diagram)**
22. A pet owner cannot bid for the services of a caretaker when the caretaker is not available.

23. A pet owner cannot bid for the services of a caretaker for a caretaking period that does not fall within the caretaker's availability period. For example, if caretaker A is available from 12 September 2020 to 12 November 2020, pet owner B cannot make a bid for A to care for his pet from 11 September 2020 to 13 November 2020. **(Not captured in ER diagram)**
24. A pet owner can bid for the services of a caretaker for the same availability period, but with a different start and end period of the caretaking service. For example, if Caretaker A is available from 12 September 2020 to 12 November 2020, pet owner B can make separate bids for A to care for his pet from 20 September 2020 to 25 September 2020 and 10 October 2020 to 15 October 2020.
25. Bids are identified by their bid id. For each bid, their bid price, the start and end period of the caretaking service and the date of the bid must be recorded.
26. The pet owner cannot make a bid for a given pet category and caretaker availability period with a lower bid price than the daily price that was set by the caretaker for that corresponding pet category and availability period. **(Not captured in ER diagram)**
27. The caretaker can choose to accept or not accept bids for their service from pet owners.
28. Once the caretaker has chosen to accept or not accept a particular bid, he/she cannot undo his/her decision. **(Not captured in ER diagram)**
29. If the caretaker is working full-time, he/she will always accept the bid immediately if possible. **(Not captured in ER diagram)**
30. Once a bid is accepted, it will be proceeded by exactly one transaction. The price of the transaction is set as the bid price multiplied by the number of caretaking days.
31. Transactions are identified by their transaction id. For each transaction, the start and end date of the caretaking period, payment method, pet transfer method and price must be recorded.
32. Payment method of successful bids can be either credit card or cash. **(Not captured in ER diagram)**
33. Transfer method of the pet can be either the pet owner delivers, or the caretaker picks up, or transfer through the physical PCS building. **(Not captured in ER diagram)**
34. After the end of the care period, the pet owner can submit exactly one review and exactly one rating, where 1 is the worst rating and 5 is the best rating, for the caretaker.
35. Full-time caretakers can take care of more than one pet, up to a maximum of 5 pets, at any given time. **(Not captured in ER diagram)**
36. Part-time caretakers can take care of more than 2 pets, up to a maximum of 5 pets, if their average rating is greater than or equal to 4 out of 5. If their average rating is lower than 4 out of 5, they can take care of at most 2 pets only. **(Not captured in ER diagram)**
37. Each full-time caretaker must work for a minimum of 2 x 150 consecutive days a year. **(Not captured in ER diagram)**
38. A full-time caretaker can apply for leave while a part-time caretaker cannot apply for leave. If the full-time caretaker is deleted, there is no need to keep track of all of his/her leaves. The leave application id uniquely identifies a leave application from all other leave applications.
39. For each leave application, the start and end date of the leave must be recorded.

40. Full-time caretakers cannot apply for leave if there is at least one Pet under their care. **(Not captured in ER diagram)**
41. Before the full-time caretaker can go on leave, the leave application must be approved by the PCS administrator.
42. The salary of a full-time caretaker depends on the number of pet-days, which is the sum of number of days per pet, for all pets that the caretaker takes care of in a given month. For up to 60 pet-days, the full-time caretaker will be paid \$3000. For any excess pet-days, the full-time caretaker will be paid 80% of their price. **(Not captured in ER diagram)**
43. The part-time caretaker will earn 75% of their stated price from each caretaking job. PCS will take the remaining 25%. **(Not captured in ER diagram)**