

Blog Database Repository (BDR)

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Table of Contents

Section I: Project Description	3
Section II: Use Cases	4
Section III: Database Requirements (Business Rules)	6
Section IV: Detailed List of Main Entities, Attributes and Keys	9
Section V: Entity Relationship Diagram (ERD)	15
Section VI: Testing Table	16

Section I: Project Description

Blog Database Repository (BDR) is a new blog database management system that streamlines and simplifies data sharing through accounts that can create blogs, posts, and blog posts. This product is run on several types of technology, including phones, computers, and tablets. Due to the new design of the software, the company only has over 20 employees. These employees are all administrators that manage the Blog Database Repository (BDR) product. They create and develop a database where users are required to create an account using their information. The types of accounts they can create are general free user, general paid user, blog free user, or blog paid user.

Users can freely comment or like on any media on Blog Database Repository (BDR). This can be done independently of blogs, posts, or blog posts. Having an account allows users to interact with friends through commenting and liking as well. Depending on the permissions associated with the user's account, the user is given access to different Blog Database Repository (BDR) utility.

The Blog Database Repository (BDR) has a look up system that stores searched data for business trend purposes. This data can be used to target specific trends in searches and either store them as categories or tags. Categories are typically more broad such as “animals”, whereas tags are a more specific niche such as “cat”, “dog”, or “horse”.

Independent of the type of account a user has, in the Blog Database Repository (BDR), anyone can view news. However, having an account provides more specific news tailored to your frequent post, blog, and look up data. In addition to this, options are independent as well and allow you to edit the theme and product preferences. Similar to the news, having an account provides a more tailored options experience.

We here at Blog Database Repository (BDR) can't wait to offer a unique and diverse experience as opposed to your typical blog. We invite you to try our new product and all it has to offer!

Section II: Use Cases

Use Case Title:	Account Creation & Perks
Actors:	<ol style="list-style-type: none">1. Account2. Users3. Permission4. Friends
Description:	Sami wants to make a new blog on Blog Database Repository (BDR), but first she needs to create an account. Sami can pick between a general free user, general paid user, blog free user, or blog paid user account. Since Sami is one user, she can only create one account. Creating this account provides one account specific permissions. In addition, this account provides zero or many friends.

Use Case Title:	Making Blogs & Posts
Actors:	<ol style="list-style-type: none">5. Like6. Comment7. Post8. Blog
Description:	Andrew wants to create a blog on Blog Database Repository (BDR). He can create either no blogs or as many blogs as he wants. In addition, Andrew can create either no posts or many posts. Together, Andrew can use this to make blog posts. On blogs, posts, blog posts, as well as any social interaction on BDR, Andrew can not like or like as many as he wants. He can also do this with comments.

Use Case Title:	Product & Technology Management
Actors:	9. Product 10. Technology 11. Administrator
Description:	Maxine uses the Blog Database Repository (BDR) product. This product is run on technology. The types of technology Maxine can run this product on are phones, computers, or tablets. This product is managed by one or many administrators that ensure the product runs smoothly.

Use Case Title:	Storing Data & Seeing Trends
Actors:	12. Look Up 13. Tag 14. Category
Description:	When Matteo uses Blog Database Repository (BDR) and uses the search function, look up stores the associated key(s) looked up either as categories or tags. These look ups can be used to help the company keep track of frequently hit categories and tags. This can help the company increase specific content depending on what users are searching and actively trending.

Use Case Title:	Additional Account Features
Actors:	15. News 16. Options
Description:	Amber can access the news on Blog Database Repository (BDR) either independently of her account otherwise her account will provide access to it anyways. Options are usable on the website to edit the product theme and preferences. These options are usable with or without an account.

Section III: Database Requirements (Business Rules)

Strong Entities:

1. Account
 - a. An account shall be created by only one user.
 - b. An account provides zero or many friends.
 - c. An account is a general free user, general paid user, blog free user, or blog paid user.
 - d. An account has zero or many options.
 - e. An account has zero or many permissions.
2. Administrator
 - a. One or many administrators manage one product.
 - b. One or many administrators has one product.
3. Blog
 - a. Zero or many blogs can be created by one or many users.
 - b. Zero or many blogs can blog post zero or many posts.
 - c. Zero or many blogs contain one or many categories.
 - d. Zero or many blogs contain one or many tags.
 - e. One or many blogs hold zero or many comments.
 - f. One or many blogs hold zero or many likes.
4. Category
 - a. One or many categories contain zero or many blogs.
 - b. One or many categories contain zero or many posts.
 - c. Zero or many categories are stored in one or many look ups.
5. Comment
 - a. Zero or many comments can be created by one or many users.
 - b. Zero or many comments are held by one or many posts.
 - c. Zero or many comments are held by one or many blogs.
6. Friends
 - a. Zero or many friends have one user.
 - b. Zero or many friends are provided by one account.
7. Like
 - a. Zero or many likes can be created by one or many users.
 - b. Zero or many likes can be held by one or many posts.
 - c. Zero or many likes can be held by one or many blogs.

8. Look Up
 - a. One or many look ups store zero or many categories.
 - b. One or many look ups store zero or many tags.
9. News
 - a. One or many news is provided by one product.
10. Permission
 - a. Zero or many permissions are provided by one account.
 - b. Zero or many permissions have one user.
11. Post
 - a. Zero or many posts can be created by one or many users.
 - b. Zero or many posts can blog post zero or many blogs.
 - c. Zero or many posts contain one or many categories.
 - d. Zero or many posts contain one or many tags.
 - e. One or many posts hold zero or many comments.
 - f. One or many posts hold zero or many likes.
12. Product
 - a. One product is ran on one technology.
 - b. One product is managed by one or many administrators.
 - c. One product has zero or many administrators.
 - d. One product provides zero or many news.
13. Options
 - a. Zero or many options are for one account.
14. Tag
 - a. One or many tags contain zero or many blogs.
 - b. One or many tags contain zero or many posts.
 - c. Zero or many tags are stored in one or many look ups.
15. Technology
 - a. One technology runs one product.
 - b. One technology is a phone, computer, or tablet.
16. Users
 - a. A user shall create one account.
 - b. A user has zero or many permissions.
 - c. A user has zero or many friends.
 - d. One or many users can create zero or many blogs.

- e. One or many users can create zero or many posts.
- f. One or many users can create zero or many comments.
- g. One or many users can create zero or many likes.
- h. Zero or many users have one product.

Weak Entities:

- 1. Blog Free User
 - a. A blog free user is an account.
- 2. Blog Paid User
 - a. A blog paid user is an account.
- 3. Computer
 - a. A computer is a technology.
- 4. General Free User
 - a. A general free user is an account.
- 5. General Paid User
 - a. A general paid user is an account.
- 6. Phone
 - a. A phone is a technology.
- 7. Tablet
 - a. A tablet is a technology.

Section IV: Detailed List of Main Entities, Attributes and Keys

Strong Entities:

17. Account (Strong)
 - a. account_id: key, numeric
 - b. username: alphanumeric
 - c. password: alphanumeric
18. Administrator (Strong)
 - a. admin_id: key, numeric
 - b. fullname: composite, multivalued, alphanumeric
 - c. tier: numeric
19. Blog (Strong)
 - a. blog_id: key, numeric
 - b. name: alphanumeric
 - c. date_created: composite, date
20. Category (Strong)
 - a. category_id: key, numeric
 - b. type: multivalued, alphanumeric
 - c. count: numeric
21. Comment (Strong)
 - a. comment_id: key, numeric
 - b. date_created: composite, date
 - c. content: alphanumeric
22. Friends (Strong)
 - a. friends_id: key, numeric
 - b. name: alphanumeric
 - c. date_of_birth: composite, date
23. Like (Strong)
 - a. like_id: key, numeric
 - b. count: numeric
 - c. type: multivalued, alphanumeric
24. Look Up (Strong)

- a. look_up_id: key, numeric
- b. type: multivalue, alphanumeric
- c. count: numeric

25. News (Strong)

- a. news_id: key, numeric
- b. title: alphanumeric
- c. body: alphanumeric

26. Permission (Strong)

- a. permission_id: key, numeric
- b. tier: multivalue, numeric
- c. count: numeric

27. Post (Strong)

- a. post_id: key, numeric
- b. subject: alphanumeric
- c. body: alphanumeric

28. Product (Strong)

- a. product_id: key, numeric
- b. name: alphanumeric
- c. date_created: composite, date

29. Options (Strong)

- a. options_id: key, numeric
- b. mode: multivalue, numeric
- c. theme: multivalue, numeric

30. Tag (Strong)

- a. tag_id: key, numeric
- b. handle: alphanumeric
- c. content: alphanumeric

31. Technology (Strong)

- a. tech_id: key, numeric
- b. type: multivalue, alphanumeric
- c. age: numeric

32. Users (Strong)

- a. user_id: key, numeric
- b. first_name: multivalued, alphanumeric
- c. last_name: multivalued, alphanumeric

Weak Entities:

8. Blog Free User (Weak)

- a. blog_free_id: key, numeric
- b. subscription_length: numeric
- c. num_months_subscribed: numeric

9. Blog Paid User (Weak)

- a. blog_paid_id: key, numeric
- b. subscription_length: numeric
- c. num_months_subscribed: numeric

10. Computer (Weak)

- a. computer_id: key, numeric
- b. make: composite, alphanumeric
- c. model: composite, alphanumeric

11. General Free User (Weak)

- a. blog_paid_id: key, numeric
- b. subscription_length: numeric
- c. num_months_subscribed:

12. General Paid User (Weak)

- a. blog_paid_id: key, numeric
- b. subscription_length: numeric
- c. num_months_subscribed: numeric

13. Phone (Weak)

- a. computer_id: key, numeric
- b. make: composite, alphanumeric
- c. model: composite, alphanumeric

14. Tablet (Weak)

- a. tablet_id: key, numeric
- b. make: composite, alphanumeric
- c. model: composite, alphanumeric

Relationships becoming Entities:

1. Blog Post

- a. blog_post_id: key, numeric
- b. blog_id: key, numeric
- c. post_id: key, numeric

2. Containing 1

- a. container_id: key, numeric
- b. category_id: key, numeric
- c. blog_id: key, numeric

3. Containing 2

- a. container_id: key, numeric
- b. category_id: key, numeric
- c. post_id: key, numeric

4. Containing 3

- a. container_id: key, numeric
- b. tag_id: key, numeric
- c. blog_id: key, numeric

5. Containing 4

- a. container_id: key, numeric
- b. tag_id: key, numeric
- c. post_id: key, numeric

6. Create

- a. creation_id: key, numeric
- b. users_id: key, numeric
- c. account_id: key, numeric

7. Creates 1

- a. creation_id: key, numeric
- b. users_id: key, numeric
- c. blog_id: key, numeric

8. Creates 2

- a. creation_id: key, numeric
- b. users_id: key, numeric
- c. post_id: key, numeric

9. Holds 1

- a. holding_id: key, numeric
- b. blog_id: key, numeric
- c. comment_id: key, numeric

10. Holds 2

- a. holding_id: key, numeric
- b. blog_id: key, numeric
- c. like_id: key, numeric

11. Holds 3

- a. holding_id: key, numeric
- b. post_id: key, numeric
- c. comment_id: key, numeric

12. Holds 4

- a. holding_id: key, numeric
- b. post_id: key, numeric
- c. like_id: key, numeric

13. Is Ran On

- a. run_id: key, numeric
- b. tech_id: key, numeric
- c. product_id: key, numeric

14. Manages

- a. manage_id: key, numeric
- b. admin_id: key, numeric

- c. product_id: key, numeric

15. Provides 1

- a. provision_id: key, numeric
- b. account_id: key, numeric
- c. friends_id: key, numeric

16. Provides 2

- a. provision_id: key, numeric
- b. Account_id: key, numeric
- c. permission_id: key, numeric

17. Provides 3

- a. provision_id: key, numeric
- b. product_id: key, numeric
- c. news_id: key, numeric

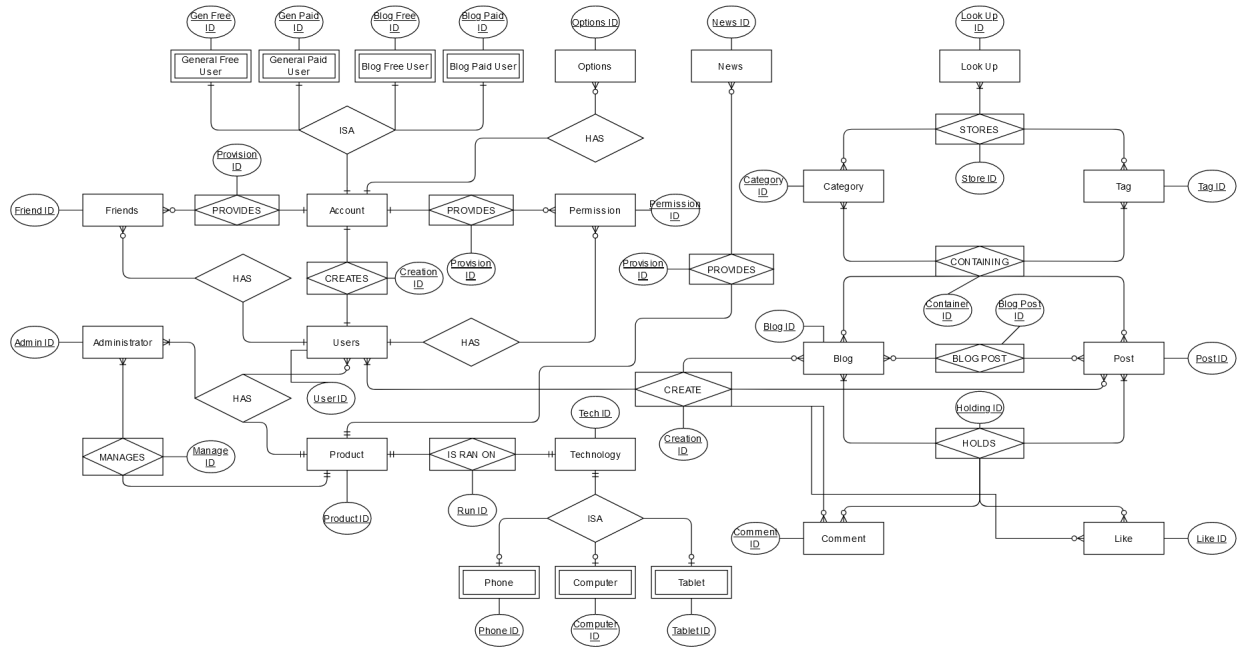
18. Stores 1

- a. stores_id: key, numeric
- b. look_up_id: key, numeric
- c. category_id: key, numeric

19. Stores 2

- a. stores_id: key, numeric
- b. look_up_id: key, numeric
- c. tag_id: key, numeric

Section V: Entity Relationship Diagram (ERD)



Section VI: Testing Table

Green = Strong

Blue = Weak

Rule	Entity A	Relation	Entity B	Cardinality	Pass/Fail	Error Description
1	Account	Creates	Users	M-to-N	Fail	One account should be made by one user
2	Account	Provides	Friends	M-to-N	Fail	One account provides zero or many friends
3	Account	Provides	Permission	M-to-N	Fail	One account provides zero or many permissions
4	Account	ISA	GFU, GPU, BFU, or BPU	1-to-M	Fail	Account ISA GFU, GPU, BFU, or BPU
5	Account	Has	Options	M-to-N	Fail	One account has zero or many options
6	Administrator	Has	Product	M-to-1	Pass	None
7	Administrator	Manages	Product	M-to-1	Pass	None
8	Blog	Created By	Users	M-to-N	Pass	None
9	Blog	Blog Post	Post	M-to-N	Pass	None
10	Blog	Contain	Category	M-to-N	Fail	I'm a little unsure how to fix this

						one. Perhaps I make the category zero or many
11	Blog	Contain	Tag	M-to-N	Fail	I'm a little unsure how to fix this one. Perhaps I make the tags zero or many
12	Blog	Hold	Comment	M-to-N	Pass	None
13	Blog	Hold	Like	M-to-N	Pass	None
14	Category	Is Stored	Look Up	M-to-N	Pass	None
15	Category	Contain	Post	M-to-N	Pass	None
16	Category	Contain	Blog	M-to-N	Pass	None
17	Comment	Created By	Users	M-to-N	Pass	None
18	Comment	Held By	Post	M-to-N	Pass	None
19	Comment	Held By	Blog	M-to-N	Pass	None
20	Friends	Has	Users	M-to-1	Pass	None
21	Friends	Provided By	Account	M-to-1	Pass	None
22	Like	Created By	Users	M-to-N	Pass	None
23	Like	Held By	Post	M-to-N	Pass	None
24	Like	Held By	Blog	M-to-N	Pass	None
25	Look Up	Store	Category	M-to-N	Pass	None
26	Look Up	Store	Tag	M-to-N	Pass	None
27	News	Provided By	Product	M-to-1	Pass	None
28	Permission	Provided By	Account	M-to-1	Pass	None

29	Permission	Has	Users	M-to-N	Fail	Zero or many permissions have one user
30	Post	Created By	Users	M-to-N	Pass	None
31	Post	Blog Post	Blog	M-to-N	Pass	None
32	Post	Contain	Category	M-to-N	Fail	I'm a little unsure how to fix this one. Perhaps I make the category zero or many, similar to blog
33	Post	Contain	Tag	M-to-N	Fail	I'm a little unsure how to fix this one. Perhaps I make the tags zero or many, similar to blog
34	Post	Hold	Comment	M-to-N	Pass	None
35	Post	Hold	Like	M-to-N	Pass	None
36	Product	Ran On	Technology	1-to-1	Pass	None
37	Product	Managed	Administrator	1-to-M	Pass	None
38	Product	Has	Administrator	1-to-M	Pass	None
39	Product	Provides	News	1-to-M	Pass	None
40	Options	Has	Account	M-to-1	Pass	None
41	Tag	Is Stored	Look Up	M-to-N	Pass	None
42	Tag	Contain	Post	M-to-N	Pass	None

43	Tag	Contain	Blog	M-to-N	Pass	None
44	Technology	Ran On	Product	1-to-1	Pass	None
45	Technology	ISA	Phone, Computer, or Tablet	1-to-M	Fail	Technology ISA phone, computer, or tablet
46	Users	Create	Account	1-to-1	Pass	None
47	Users	Has	Permission	1-to-M	Pass	None
48	Users	Has	Friends	1-to-M	Pass	None
49	Users	Create	Blog	M-to-N	Pass	None
50	Users	Create	Post	M-to-N	Pass	None
51	Users	Create	Comment	M-to-N	Pass	None
52	Users	Create	Like	M-to-N	Pass	None
53	Users	Has	Product	M-to-1	Pass	None
54	Blog Free User	ISA	Account	1-to-M	Fail	A BFU is an account
55	Blog Paid User	ISA	Account	1-to-M	Fail	A BPU is an account
56	General Free User	ISA	Account	1-to-M	Fail	A GFU is an account
57	General Paid User	ISA	Account	1-to-M	Fail	A GPU is an account
58	Computer	ISA	Account	1-to-M	Fail	A computer is a technology
59	Phone	ISA	Account	1-to-M	Fail	A phone is a technology
60	Tablet	ISA	Account	1-to-M	Fail	A tablet is a technology