Rai'd S. Muhammad

rmuhammad@mail.sfsu.edu

920908258

GitHub ID: muhammad14u2c

Version History Table

Milestone/ Version	Date
M2V1	10/25/2022
M1V2	10/25/2022
M1V1	9/4/2022

Section I: Project Description

Many small businesses struggle to keep up with the pace of technology and lack the necessary site traffic to keep their company booming. The purpose of this Blog Management Database System is to enhance a company's ability to reach more users and provide a more engaging layout for their brand. Our Database allows a company to be strategic and have structure for content tracking. Building an online presence has been made easier with the development of this database system. This product allows a company to automate their marketing needs by removing data sharing complexities. This Blog Management System can be deployed across various platforms, where users create blogs, create posts, delete posts, and view various forms of media. Students at SFSU have been working diligently to fulfill your companies needs and expand your online presence. Our product ensures consumers know about the topics in your field and teaches users about your services.

Upon deploying our Blog Database Management System, users will be able to create accounts and increase the content of a site. Companies will be able to see quantitative data behind user engagement. Our Database System will employ a consistent labeling system to organize and search content. The system also allows for us to track and store critical information like where to locate posts. With the ability to track posts, we know when resources are created, simplifying the process for updating and deleting assets. Our Database System lets organizations categorize posts based on tags, further enhancing data collection.

This Blog Management Database System helps maintain the interest of the customer. We continually update and allow the incorporation of new topics. This guarantees more search engine hits, and loyal repeat customers. Our multimedia elements are viewable to all tiers of users; however, limited accounts are free to upgrade their subscription for a personal experience, further improving the visual appeal for continued reading. Upon command, the company also can view reports in regard to

topic hits, most viewed post, and monitor confidential user data. This is not simply a product; it is a great marketing resource which promises to improve the longevity of your brand.

Section II: Use Cases

1) Title: User creates a post

Actor: User, Post, Article

Description: Dante comes across a website linked to a blog forum and is curious about its findings. When he comes across the article stating that "Oakland Fish are no longer contaminated, come down to the Bay to get some fresh fish filet," he immediately decides to create a post. Dante can create no posts but decides against it. He can also post as many times as he wishes and decides this is a good course of action. Dante creates his posts and says to himself, "this deserves an upvote." He maintains the ability to upvote up to one time on a post or not at all. Not complete with his post, he decides to create another, but the blog page does not allow him until complete with the first. Within a few minutes, he comes back to give this article more of his mind. Dante creates multiple posts in order to get his point across.

2) Title: Post Commented on

Actor: Post, Comment, Blog, Multimedia

Description: Sarah, a retired veteran, and now avid blogger, spends most of her days on her blog sharing articles which grow her income through affiliate marketing. Some of her blog posts consists of digital media and various forms of multimedia. Within her blog, users are allowed to comment on other users' posts, 0 or many times. For instance, yesterday, Sarah created a blog linking users to the new album for legendary artist Melancholy Melody. Many users who viewed the post decided against commenting, while others commented various times on how the album helped shape their early development years.

3) Title: Articles and Advertisements

Actor: Articles, Ads, Devices

Description: Dandelion works for the Blog Database Management System. The BDMS is run on various devices which are utilized by users. Dandelion notices that certain devices are not able to see the articles and Ads as other devices are able to and contacts the admin of the BDMS. The database system which employs Dandelion is not happy with this news, not being able to resolve this themselves, contacts another admin. The BDMS, managed by many admin, uses their resources to resolve this issue.

4) Title: Account has its Privileges

Actor: Account, Privileges, User

Description: Dante, fulfilled with his feedback from his posts, decides to create an account in order to spread his message on fish still being poisoned. Dante maintains the ability to utilize his limited account, but feels he is satisfied with the blog page and wishes to create a prime account. Dante is ecstatic about where writing abilities are headed, but he is only allowed to create one account. Upgrading from the limited account to the prime grants Dante separate privileges such as creating post with 0 or more multimedia. He is very happy he upgraded because he imagines his posts would be lacking without images.

5) Title: Posts Analytics

Actor: Post, Tags, Categories, Company, Search

Description: Safeway is a Company which continually posts on a specific Blog page about their upcoming deals. They Hire BDMS in order to filter information regarding the analytics

behind their posts. BDMS maintains the ability to see a company's posts, related tags,

categories, and produce the metrics behind search hits. A company can create 0 or many posts,

as they have a contract with the blog page. A post can also have 0 or many tags, be put into 0 or

many categories, and have 0 or many search hits. BDMS aims to encapsulate this data, make it

readable, and formulate a plan to increase a company's online exposure.

1. **User**

    1.1.A user shall create one and only one account

    1.2.A user shall have one and only one account

    1.3.A user shall be able to create zero or multiple posts

    1.4. A user users shall be able to create zero or many blogs

    1.5.A user shall have zero or many privileges

    1.6.Users shall be able to use a device

    1.7.Users can contribute zero or many upvotes

    1.8.Users shall be able to create zero or many comments

    1.9.Users' information shall be included in zero or many reports

    1.10. Users shall be unregistered, registered users, company, or admin

    1.11. Users shall interact with one product

2. **Devices**

    2.1 devices shall be able to run zero or many products

    2.2. A device shall be used by many users

    2.3. A device shall be able to log in a registered user

    2.4. A device shall be used to log in zero or many companies

3. **Account**

    3.1. An account shall have many privileges

    3.2. An account shall be a limited or prime account

    3.3. An account shall be created by one and only one user

    3.4. An account shall belong to one and only one user

3.5. Accounts shall be monitored by zero or many admin

3.6 An account has zero or many privileges

3.7. Accounts shall exist in zero or many reports

3.8. An account shall belong to one and only one company

3.9. An account shall be created by one and only one company

3.10. An account can have many roles

4. **Multimedia**

4.1. multimedia shall be added to zero or many posts from users with a prime account

4.2. multimedia shall be monitored by zero or many admin

4.3. multimedia shall exist in zero or many blogs

4.4 multimedia is either a photo, a video, a digital image, or music

5. **Blog**

5.1. Blogs shall be created by zero or many users

5.2. Blogs shall contain zero or many sources of multimedia

5.3. Blogs shall contain zero or many upvotes

5.4. Blogs shall contain zero or many posts

5.5. Blogs shall contain zero or many tags

5.6. Blogs shall contain zero or many comments

5.7. Blogs shall contain zero or many categories

5.8. Blogs shall contain zero or many articles

5.9. Blogs shall exist in zero or many reports

5.10. A Blog shall contain zero or many advertisements

5.11. Blogs shall be created by zero or many companies

6. **Upvote**

6.1. Upvotes shall be contributed by zero or many users

6.2. Upvotes shall exists in zero many posts

6.3. Upvotes shall exists in zero or many blogs

6.4 Upvotes shall be contributed by zero or many companies

7. **Admin**

   7.1. Admin shall monitor zero or many forms of multimedia

   7.2 Admin shall monitor zero or many products

   7.3. Admin shall monitor zero or many accounts

   7.4. admin shall monitor zero or many articles

   7.5 An admin is a user

8. **Articles**

   8.1. Articles shall exist in zero or many blogs

   8.2. Articles shall exist in zero or many posts

   8.3. Articles shall be monitored by zero or many admin

9. **Privileges**

   9.1. Privileges shall be given to many accounts

   9.2. Privileges shall be provided to zero or many user

   9.3. Privileges shall be given to zero or many companies

10. **Categories**

    10.1. Categories shall be given to zero or many blogs

    10.2. Categories shall exist in zero or many searches

    10.3. Categories shall be given to zero or many posts

    10.4. Categories shall exist in zero or many reports

11. **Search**

    11.1. Searches shall contain zero or many tags

11.2. Searches shall contain zero or many categories

11.3. Searches shall exist in zero or many reports

12. Products

12.1. A Product shall exist on zero or many devices

12.2. Products shall be monitored by zero many admin

12.3 A product shall be interacted with by one user

13. Company

13.1. A company shall create one and only one account

13.2. A company shall have one and only one account

13.3. A company shall be able to create zero or multiple posts

13.4. A company shall be able to create zero or many blogs

13.5. A company shall have zero or many privileges

13.6. A company shall be able to log in from many devices

13.7. Companies can contribute zero or many upvotes

13.8. A company shall be able to create zero or many comments

13.9. A company can contribute zero or many advertisements

13.10. A company shall be a user

14. Comment

14.1. Comments shall be created by zero or many users

14.2. Comments shall exist within zero or many posts

14.3. Comments shall exist within zero or many blogs

14.4Comments shall be created by zero or many companies

15. **Report**

15.1 A report shall contain zero or many users' information

15.2 A report shall contain zero or many tags

15.3 A report shall contain zero or many blogs

15.4. A report shall contain zero or many posts

15.5 A report shall contain zero or many searches

15.6 A report shall contain zero or many categories

15.6A report shall contain zero or many accounts

16. **Post**

16.1. A post shall be created by zero or many users

16.2. Posts shall contain zero or many upvotes

16.3. Posts shall contain zero or many tags

16.4. Posts shall contain zero or many articles

16.5 A post shall belong to zero or many categories

16.6 A post shall exist in zero or many reports

16.7. A post shall contain zero or many advertisements

16.8. A post shall be created by zero or many companies

16.9. A post shall contain multimedia from users with prime accounts

16.10. A post shall exist in zero or many blogs

16.11. A post shall contain zero or many comments

17**. Advertisements**

  17.1. Advertisements shall exist in zero or many blogs

  17.2 Advertisements shall exist in zero or many posts

  17.3Advertisements shall exist for zero or many companies

18**. Tags** (labels)

  18.1. Tags shall exist in zero or many searches

  18.2. Tags shall exist in zero or many posts

  18.3. Tags shall exist in zero or many reports

  18.4. Tags shall exist in zero or many blogs

19. **Prime Account**

  19.1. A prime account is an account

  19.2. A prime account is an upgraded account

  19.3. A prime account shall have many users

  19.4. A prime account shall be able to create posts with many forms of multimedia

  19.5 A prime account shall belong to one registered account

  19.6. A prime account shall be able to create posts with zero many videos multimedia

  19.7. A prime account shall be able to create posts with zero many photos multimedia

  19.8. A prime account shall be able to create posts with zero many digital image multimedia

  19.9. A prime account shall be able to create posts with zero many music multimedia

20. **Limited Account**

20.1 A limited account is an account

20.2 A limited account is open to users

20.3 a limited account shall have many users

20.4 A limited account shall be created by one registered user

20.5 A limited account shall be created by one unregistered user

21. **Registered User**

21.1 A registered user is a user

21.2 A registered user can log in from many devices

21.3 A registered user shall be able to make only one limited account

21.4 A registered user shall be able to make only one prime account

21.5 A registered user with a prime account shall be able to create posts which contain

   many forms of multimedia

22. **Music**

22.1 Music multimedia shall be posted by many registered users with a prime account

23. **Video**

23.1 Video multimedia shall be posted by many registered users with a prime account

24. **Digital Image**

24.1 Digital Image multimedia shall be posted by many registered users with a prime account

25. **Photo**

25.1 Phot multimedia shall be posted by many registered users with a prime account

26. **Unregistered Users**

26.1. Unregistered users are users

26.2. Unregistered users shall be able to create one limited account

27. **Role**

27.1 A role shall be given to many accounts

Note: In this section, students must create at least 16 strong entities, and each entity must have at least three or more attributes. Describe entities and their attributes for your database system, including keys and attributes details (data type and form.

1. **User** (Strong)

    1. user_id: key, numeric

    2. firstName: composite, alphanumeric

    3. lastName: composite, alphanumeric

    4. email: varchar

2. **Devices** (Strong)

    1. device_id: key, numeric

    2. device_type: alphanumeric

    3. device_access_date: composite, date

3. **Account** (Weak)

    1. account_id: key, numeric

    2. username: alphanumeric

    3. password: alphanumeric

    4. account_creation_date: composite, date

    5. role_id: numeric

4. **Multimedia** (Strong)

    1. multimedia_id: key, numeric

2. multimedia_type: alphanumeric

3. multimedia_creation_date: composite, date

5. **Blog** (Strong)

1. blog_id: key, numeric

2. blog_creation_date: composite, date

3. blog_name: composite, alphanumeric

6. **Upvote** (Strong)

1. upvote_id: key, numeric

2. upvote_amount: numeric

3. upvote_type: multivalue, alphanumeric

7. **Admin** (Strong)

1. admin_id: key, numeric

2. admin_name: composite, alphanumeric, multivalue

3. admin_email: varchar

4. role_id: FK, numeric

8. **Articles** (Strong)

1. article_id: key, numeric

2. article_name: composite, alphanumeric

3. article_content: alphanumeric

9. **Privileges** (Strong)

1. privilege_id: key, numeric

2. privilege_creation_date: composite, date

3. privilege_amount: numeric

10. **Categories** (Strong)

1. category_id: key, numeric

2. category_amount: numeric

3. category_content_type: multivalue, alphanumeric

11. **Search** (Strong)

1. search_id: key, numeric

2. search_content: multivalue, composite

3. search_hits: numeric

12. **Products** (Strong)

1. product_id: key, numeric

2. product_descr: alphanumeric

3. product_name: composite, alphanumeric

13. **Company** (Strong)

1. company_id: key, numeric

2. company_name: composite, alphanumeric

3. company_email: varchar

14. **Comment** (Strong)

1. comment_id: key, numeric

2. comment_content: alphanumeric

3. comment_creation_date: composite, date

15. **Report** (Strong)

    1. report_id: key, numeric

    2. report_creation_date: composite, date

    3. report_content: alphanumeric

16. **Post** (Strong)

    1. post_id: key, numeric

    2. post_content: alphanumeric

    3. post_type: alphanumeric

17. **Advertisements** (Strong)

    1. ad_id: key, numeric

    2. ad_creation_date: composite, date

    3. ad_content: alphanumeric

18. **Tags** (Strong)

    1. tag_id: key, numeric

    2. tag_amount: numeric

    3. tag_content: alphanumeric

19. **Prime Account** (Weak)

    1. prime_id: key, numeric

    2. prime_owner: composite, alphanumeric, multivalue

    3. prime_email: varchar

20. **Limited Account** (Weak)

    1. limited_id: key, numeric

2. limited_owner: composite, alphanumeric, multivalue

3. limited_email: varchar

21. **Registered User** (Weak)

   1. registered_user_id: key, numeric

   2. registered_user_name: composite, alphanumeric, multivalue

   3. registered_user_email: varchar

22. **Music** (Strong)

   1. music_id: key, numeric

   2. music_content_type: alphanumeric

   3. music_date: composite, date

   4. music_genre: alphanumeric

23. **Video** (Strong)

   1. video_id: key, numeric

   2. video_content_type: alphanumeric

   3. video_date: composite, date

24. **Digital Image** (Strong)

   1. digImg_id: key, numeric

   2. digImg_content_type: alphanumeric

   3. digImg_date: composite, date

25. **Photo** (Strong)

   1. photo_id: key, numeric

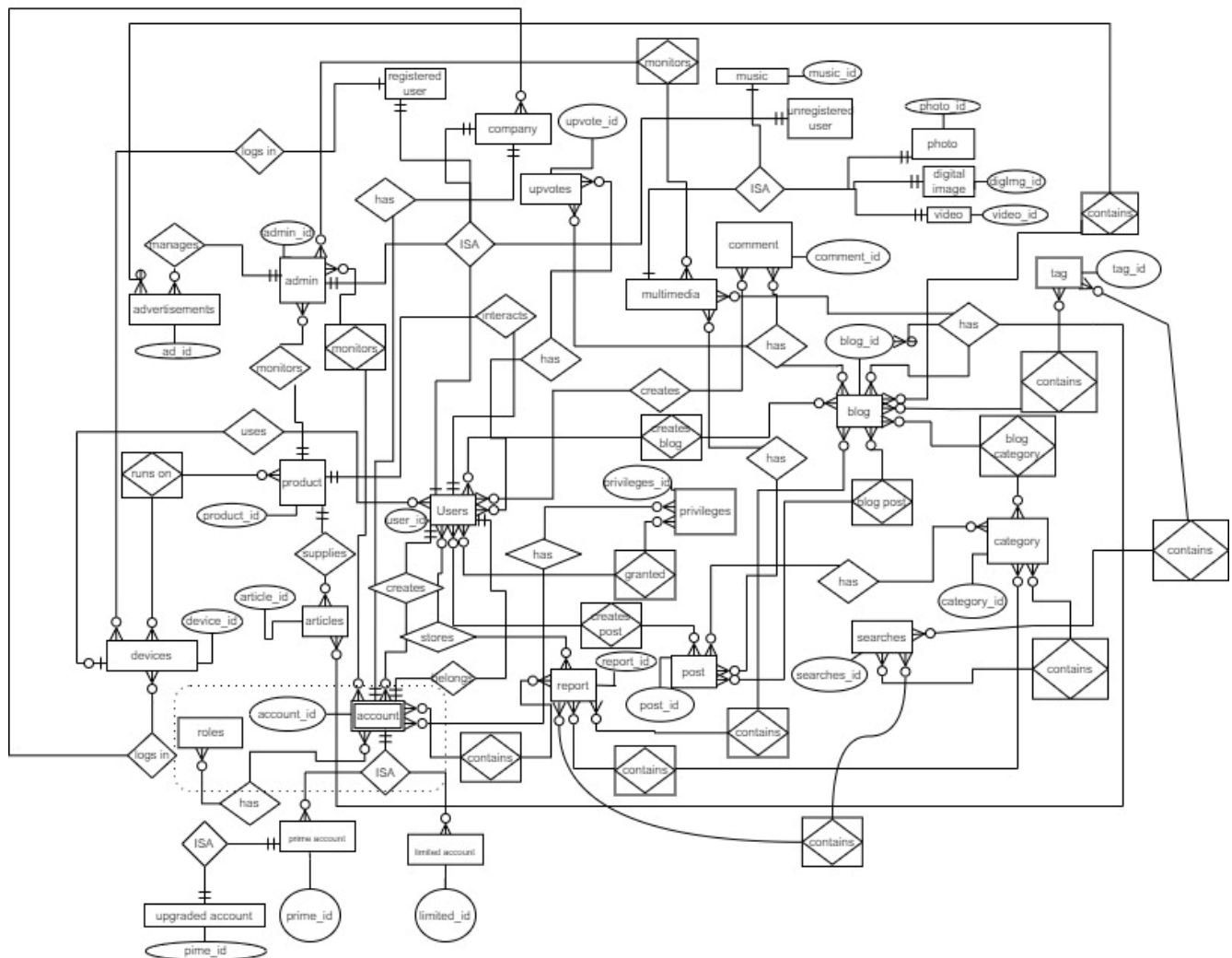   2. photo_content_type: alphanumeric

   3. photo_date: composite, date

26. **Unregistered Users** (Weak)

1. unregistered_user_id: key, numeric

2. unregistered_user_first_name: composite, alphanumeric

3. unregistered_user_last_name: composite, alphanumeric

27. **Role** (Strong)

1. role_id: key, numeric

2. role_description: alphanumeric

3. role_type: alphanumeric

Section VI: Database Model/EER
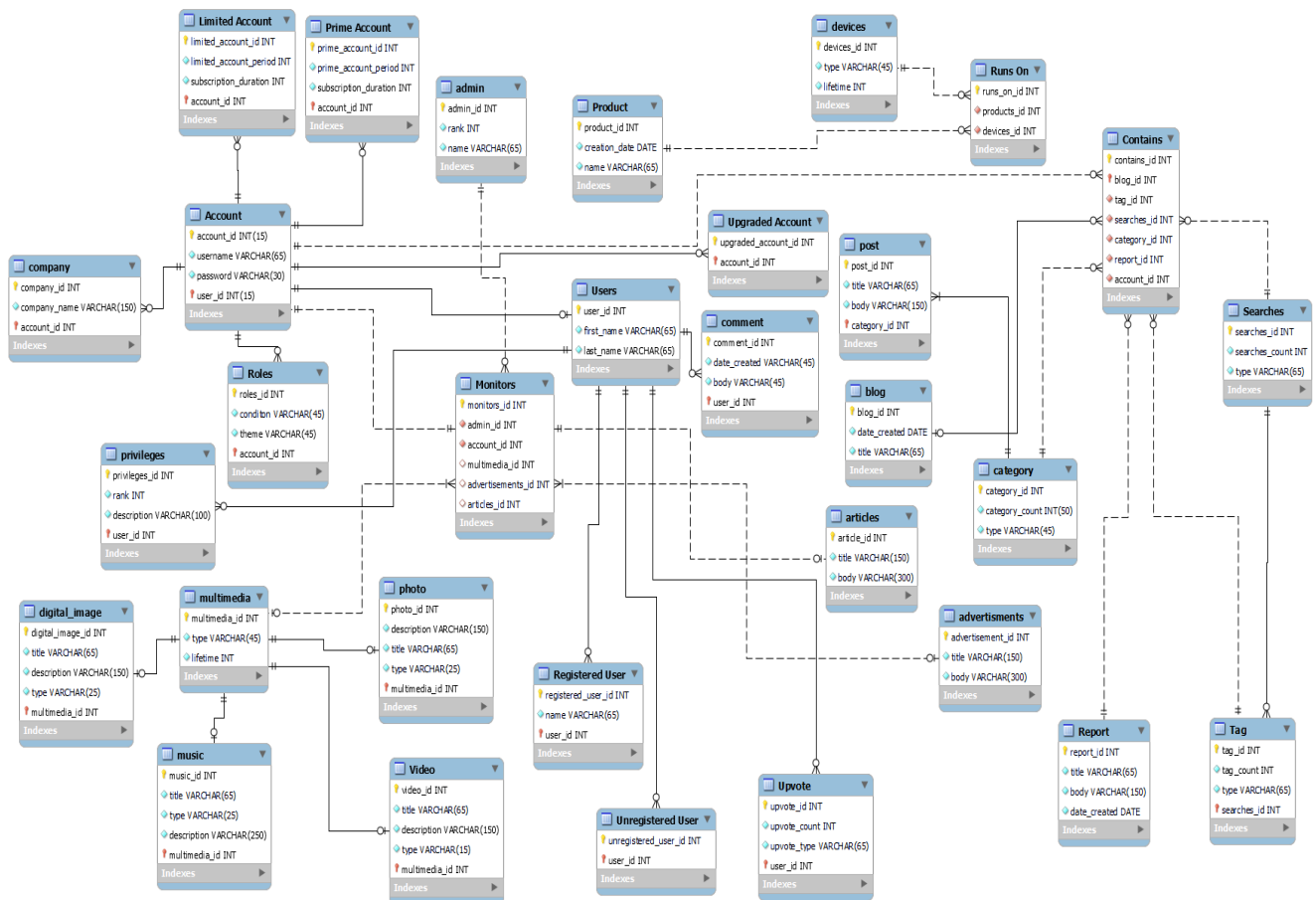
TABLE	FK	ON DELETE	ON UPDATE	COMMENT
Account	user_id	CASCADE	CASCADE	If a user deleted, then the account from that user must be deleted
Music	multimedia_id	CASCADE	CASCADE	If multimedia is deleted then music from multimedia deleted as well
Tag	searches_id	CASCADE	CASCADE	If a search deleted, the tag from search deleted
Upgraded Account	account_id	CASCADE	CASCADE	If account deleted, upgraded account from that account deleted
Upvote	user_id	CASCADE	CASCADE	If user deleted, upvote from user deleted
Video	multimedia_id	CASCADE	CASCADE	If multimedia deleted, video from multimedia deleted as well
Runs on	products_id	CASCADE	CASCADE	A delete or update of product should result in delete or update runs on
Runs on	devices_id	CASCADE	CASCADE	A delete or update of devices should result in

				delete or update of runs on
Monitors	admin_id	CASCADE	CASCADE	A delete or update of admin should result in delete or update of monitors
Monitors	account_id	CASCADE	CASCADE	A delete or update of account should result in delete or update of monitors
Monitors	multimedia_id	CASCADE	CASCADE	A delete or update of multimedia should result in delete or update of monitors
Monitors	advertisement_id	CASCADE	CASCADE	A delete or update of advertisements should result in delete or update of monitors
Monitors	article_id	CASCADE	CASCADE	A delete or update of articles should result in delete or update of monitors
Contains	blog_id	CASCADE	CASCADE	A delete or update of blogs should result in

				delete or update of contains
Contains	searches_id	CASCADE	CASCADE	A delete or update of searches should result in delete or update of contains
Contains	tag_id	CASCADE	CASCADE	A delete or update of tags should result in delete or update of contains
Contains	category_id	CASCADE	CASCADE	A delete or update of category should result in delete or update of contains
Contains	report_id	CASCADE	CASCADE	A delete or update of reports should result in delete or update of contains
Contains	account_id	CASCADE	CASCADE	A delete or update of accounts should result in delete or update of contains
Comment	user_id	CASCADE	CASCADE	A delete or update of users should result in

				delete or update of comments
Company	account_id	CASCADE	CASCADE	A delete or update of accounts should result in delete or update of company
Digital_Image	multimedia_id	CASCADE	CASCADE	A delete or update of multimedia should result in delete or update of digital Image
Limited Account	account_id	CASCADE	CASCADE	A delete or update of accounts should result in delete or update of limited accounts
Photo	multimedia_id	CASCADE	CASCADE	A delete or update of multimedia should result in delete or update of photos
Post	category_id	CASCADE	CASCADE	A delete or update of categories should result in delete or update of posts
Prime Account	account_id	CASCADE	CASCADE	A delete or update of accounts should result

				in delete or update of prime accounts
privileges	user_id	CASCADE	CASCADE	A delete or update of users should result in delete or update of privileges
Registered User	user_id	CASCADE	CASCADE	A delete or update of users should result in delete or update of Registered Users
Roles	Account_id	CASCADE	CASCADE	A delete or update of accounts should result in delete or update of roles
Unregistered User	user_id	CASCADE	CASCADE	A delete or update of users should result in delete or update of unregistered users