Final Project Work

Points possible: 100

Category	Criteria	% of Grade
Functionality	Does the code work?	25
Organization	Is the code clean and organized? Proper use of white space, syntax, and consistency are utilized. Names and comments are concise and clear.	25
Creativity	Student solved the problems presented in the assignment using creativity and out of the box thinking.	25
Completeness	All requirements of the assignment are complete that were committed to for the given week.	25

Instructions: In Eclipse, or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed. Take screenshots of the code and of the running program (make sure to get screenshots of all required functionality) and paste them in this document where instructed below. Create a new repository on GitHub for this week's assignments and push this document, with your Java project code, to the repository. Lastly, in the Learning Management System, click the "Add Submission" button and paste the URL to your GitHub repository.

Coding Steps:

Continue contributing to your final project.

Screenshots of Code:

```
☑ VideoGameDatabaseApiApplication.java 
☒
User.java
            VideoGameName.java
1 package com.finalproject.video.game.database.api;
  3* import org.springframework.boot.SpringApplication;
  7 @ComponentScan("com.finalproject.video.game.database.api")
  8 @SpringBootApplication
  9 public class VideoGameDatabaseApiApplication {
 10
 11⊖
        public static void main(String[] args) {
            SpringApplication.run(VideoGameDatabaseApiApplication.class, args);
 12
 13
 14
 15 }
 16
```

```
13
14
15 @Entity
16 public class User {
17
18
           private Long id;
19
           private String username;
20
           private String password;
21
229
           @JsonIgnore
23
           private Set<Review> reviews;
24
25⊖
           @GeneratedValue(strategy = GenerationType.AUTO)
26
27
           public Long getId() {
28
               return id;
29
30
31⊖
           public void setId(Long id) {
               this.id = id;
32
33
34
35⊜
           public String getUsername() {
36
               return username;
37
38
39⊕
           public void setUsername(String username) {
40
               this.username = username;
41
42
43⊖
           @JsonIgnore
44
           public String getPassword() {
45
                return password;
46
47
48⊖
           @JsonProperty
49
           public void setPassword(String password) {
50
               this.password = password;
       }
51
52
53⊖
       @OneToMany(mappedBy = "user")
       public Set<Review> getReviews() {
54
55
               return reviews;
56
57
           public void setReviews(Set<Review> reviews) {
589
59
               this.reviews = reviews;
60
61
62 }
```

```
1 package com.finalproject.video.game.database.api.entity;
 2
 3
4⊕ import java.util.Set;
13
14
15
16 @Entity
17 public class VideoGameName {
18
19
       private Long id;
20
       private String name;
       private String description;
21
       private String ageGroup;
22
23
       private Set<Review> reviews;
24
       private Set<Platform> platforms;
25
       private Set<Genre> genres;
26
27⊝
       @Id
       @GeneratedValue(strategy = GenerationType.AUTO)
28
29
       public Long getId() {
30
            return id;
31
32
33⊕
       public void setId(Long id) {
           this.id = id;
34
35
36
37⊖
       public String getName() {
38
           return name;
39
40
419
       public void setName(String name) {
42
            this.name = name;
43
44
       public String getDescription() {
45⊖
            return description;
46
47
48
49⊖
       public void setDescription(String description) {
50
           this.description = description;
51
52
53⊕
       public String getAgeGroup() {
54
           return ageGroup;
55
       }
56
57⊕
       public void setAgeGroup(String ageGroup) {
58
           this.ageGroup = ageGroup;
50
```

```
@OneToMany(mappedBy = "game")
public Set<Review> getReviews() {
    return reviews;
}

public void setReviews(Set<Review> reviews) {
    this.reviews = reviews;
}

@ManyToMany(targetEntity = Genre.class, cascade = {CascadeType.PERSIST, CascadeType.DETACH,CascadeType.MERGE,CascadeType.REFRESH) )
public SetGenre> getGenres() {
    return genres;
}

public void setGenres(Set<Genre> genres) {
    this.genres = genres;
}

@ManyToMany(targetEntity = Platform.class, cascade = {CascadeType.PERSIST, CascadeType.DETACH,CascadeType.MERGE,CascadeType.REFRESH} )
public Set<Platform> getPlatforms() {
    return platforms;
}

public void setPlatformS(Set<Platform> platforms) {
    this.platforms = platforms = platforms;
}
```

```
User.java
             VideoGameName.java
                                   VideoGameDatabaseApiApplication.java
                                                                         ☑ Review.java ≅
 14 @Entity
 15 public class Review {
 16
 17
         private Long id;
         private String content;
 18
 19
         private Date date;
 20
         private User user;
 21
 220
         @JsonIgnore
 23
         private VideoGameName game;
 24
 25⊖
         @Id
         @GeneratedValue(strategy = GenerationType.AUTO)
 26
 27
         public Long getId() {
 28
             return id;
 29
 30
 31⊖
         public void setId(Long id) {
             this.id = id;
 32
 33
 34
 35⊕
         public String getContent() {
 36
             return content;
 37
 38
 39⊕
         public void setContent(String content) {
 40
             this.content = content;
 41
         }
 42
 43⊖
         public Date getDate() {
 44
             return date;
 45
 46
 47⊖
         public void setDate(Date date) {
 48
             this.date = date;
 49
 50
 51⊕
         @ManyToOne
 52
         @JoinColumn(name = "game")
 53
         public VideoGameName getGame() {
 54
             return game;
 55
 56
 57⊕
         public void setGame(VideoGameName game) {
 58
             this.game = game;
 59
 60
         @ManyToOne
 61⊖
 62
         @JoinColumn(name = "userId")
 63
         public User getUser() {
 64
             return user;
 65
 66
 679
         public void setUser(User user) {
 68
             this.user = user;
 69
         }
 70
```

```
☑ Userjava ☑ VideoGameName.java ☑ VideoGameDatabaseApiApplication.java ☑ Review.java ☑ Platform.java ☑ Genre.java ☒
package com.finalproject.video.game.database.api.entity;
  4⊕ import java.util.Set;
14
15
16
17 @Entity
18 public class Genre {
19 private Long id;
20 private String ge
         private Long id;
private String genre;
21
         @JsonIgnore
private Set<VideoGameName> games;
23
24
25
26°
27
28
29
30
31°
32
33
34°
35
36
37°
38
39
40
41°
          @GeneratedValue(strategy = GenerationType.AUTO)
         public Long getId() {
    return id;
         public void setId(Long id) {
   this.id = id;
         public String getGenre() {
              return genre;
         public void setGenre(String genre) {
         this.genre = genre;
         @ManyToMany(targetEntity = VideoGameName.class, mappedBy = "genres", cascade = {CascadeType.PERSIST, CascadeType.DETACH,CascadeType.MERGE,CascadeType.REFRESH}
42
43
44
45
46<sup>©</sup>
47
48
49 }
         public Set<VideoGameName> getGames(){
    return games;
          public void setGames(Set<VideoGameName>games) {
               this.games = games;
         }
```

```
User.java
VideoGameName.java
                                  VideoGameDatabaseApiApplication.java
Platform.java
Platform.java
                                                                                                                VideoGa
package com.finalproject.video.game.database.api.controller;
  4 import org.springframework.beans.factory.annotation.Autowired;
 16 @RestController
 17 @RequestMapping("/users")
 18 public class UserController {
 20⊝
         @Autowired
        private UserService service;
 21
 22
 23⊖
         @RequestMapping(value = "/register", method = RequestMethod.POST)
         public ResponseEntity<Object> register(@RequestBody User user) {
 24
 25
            return new ResponseEntity<Object>(service.createUser(user), HttpStatus.CREATED);
 26
 27
 28⊖
        @RequestMapping(value = "/login", method = RequestMethod.POST)
 29
        public ResponseEntity<Object> longin(@RequestBody User user) {
 30
            try {
 31
                 return new ResponseEntity<Object> (service.login(user), HttpStatus.OK);
 32
            } catch (Exception e) {
 33
                 return new ResponseEntity<Object>(e.getMessage(), HttpStatus.BAD_REQUEST);
 34
 35
 36⊖
                 @RequestMapping(value = "/{id}", method = RequestMethod.GET)
 37
                 public ResponseEntity<Object> getUser(@PathVariable Long id) {
 38
                    try {
                        return new ResponseEntity<Object>(service.getUserById(id), HttpStatus.OK);
 39
 40
                    } catch (Exception e) {
 41
                        return new ResponseEntity<Object>(e.getMessage(), HttpStatus.NOT_FOUND);
 42
 43
 44
                }
 45
                 @RequestMapping(value = "/{id}", method = RequestMethod.PUT)
 469
 47
                 public ResponseEntity<Object> updateUser(@RequestBody User user, @PathVariable Long id) {
 48
                    try {
 49
                        return new ResponseEntity<Object>(service.updateUser(user, id), HttpStatus.OK);
 50
                    } catch (Exception e) {
 51
                        return new ResponseEntity<Object>(e.getMessage(), HttpStatus.NOT_FOUND);
 52
 53
                 }
 54
 55⊜
                 @RequestMapping(value = "/{id}", method = RequestMethod.DELETE)
                public ResponseEntity<Object> deleteUser(@PathVariable Long id) {
 56
 57
 58
                         service.deleteUser(id);
 59
                        return new ResponseEntity<Object>("Successfully deleted user with id: " + id, HttpStatus.OK);
 60
                    } catch (Exception e) {
                        return new ResponseEntity<Object>(e.getMessage(), HttpStatus.NOT_FOUND);
 61
 62
         }
 63 }
 64 }
```

```
VideoGameName.java
                                  VideoGameDatabaseApiApplication.java
                                                                      Review.java
                                                                                    Platform.java
                                                                                                   Genre.java
1
    package com.finalproject.video.game.database.api.controller;
  5 import org.springframework.beans.factory.annotation.Autowired;
 17 @RestController
 18 @RequestMapping("/videoGameNames")
 19 public class VideoGameNameController {
 20
 219
        @Autowired
        private VideoGameNameService service;
 22
 23
        @RequestMapping(method=RequestMethod.GET)
 249
        public ResponseEntity<Object> getAllVideoGameNames() {
 25
            return new ResponseEntity<Object>(service.getAllGameNames(), HttpStatus.OK);
 26
 27
 28 }
 29
        @RequestMapping(value="/{id}", method=RequestMethod.GET)
 309
 31
        public ResponseEntity<Object> getVideoGameName(@PathVariable Long id) {
 32
            try {
 33
                return new ResponseEntity<Object>(service.getVideoGameName(id), HttpStatus.OK);
 34
            } catch (Exception e) {
 35
                return new ResponseEntity<Object>(e.getMessage(), HttpStatus.NOT_FOUND);
 36
 37
            }
 38
 39⊖
        @RequestMapping(method=RequestMethod.POST)
        public ResponseEntity<Object> createVideoGameName(@RequestBody VideoGameName game) {
 40
41
                    return new ResponseEntity<Object>(service.createVideoGameName(game), HttpStatus.CREATED);
 42
43 }
 449
        @RequestMapping(value = "/{id}", method = RequestMethod.DELETE)
        public ResponseEntity<Object> deleteGame(@PathVariable Long id) {
45
 46
            service.deleteVideoGameName(id);
            return new ResponseEntity<Object>("Deleted game with id:" + id, HttpStatus.OK);
47
 48 }
49 }
```

```
User.java
            VideoGameName.java
                                  VideoGameDatabaseApiAppli...
                                                               ☑ Review.java
☑ Platform.java
                                                                                             Genre.java
                                                                                                          Video
package com.finalproject.video.game.database.api.controller;
 3 import org.springframework.beans.factory.annotation.Autowired;
 14
 15 @RestController
 16 @RequestMapping("/users/{userId}/videGameNames/{gameId}/reviews")
 17 public class ReviewController {
 18
 19⊖
        @Autowired
        private ReviewService service;
 20
 21
        @RequestMapping(method=RequestMethod.GET)
 220
        public ResponseEntity<Object> getAllReviews(){
 23
                return new ResponseEntity<Object>(service.getAllReviews(), HttpStatus.OK);
 24
 25
        @RequestMapping(value="/{reviewId}", method=RequestMethod.GET)
 269
 27
        public ResponseEntity<Object> getReview(@PathVariable Long reviewId){
                return new ResponseEntity<Object>(service.getReview(reviewId), HttpStatus.OK);
 28
 29
 30
 31⊖
        @RequestMapping(value="/{reviewId}", method=RequestMethod.PUT)
        public ResponseEntity<Object> updateReview(@RequestBody Review review, @PathVariable Long reviewId){
 32
 33
            try {
 34
                return new ResponseEntity<Object>(service.updateReview(review, reviewId), HttpStatus.OK);
 35
            } catch (Exception e) {
                return new ResponseEntity<Object>(e.getMessage(), HttpStatus.BAD_REQUEST);
 36
 37
 38
        }
 39
 40⊝
        @RequestMapping(method = RequestMethod.POST)
 41
        public ResponseEntity<Object> createReview(@RequestBody Review review, @PathVariable Long userId,
 42
                @PathVariable Long gameId) {
 43
                return new ResponseEntity<Object>(service.createReview(review, userId, gameId), HttpStatus.OK);
 45
            } catch (Exception e) {
 46
                return new ResponseEntity<Object>(e.getMessage(), HttpStatus.BAD_REQUEST);
 47
            }
 48
        }
 49
 50⊝
        @RequestMapping(value = "/{reviewId}", method = RequestMethod.DELETE)
        public ResponseEntity<Object> deleteReview(@PathVariable Long reviewId) {
 51
 52
            service.deleteReview(reviewId);
            return new ResponseEntity<Object>("Deleted review with id:" + reviewId, HttpStatus.OK);
 53
 54
 55
 56 }
```

```
User.java
            VideoGameName.ja...
                                  VideoGameDataba...
                                                       Review.java
                                                                     Platform.java
                                                                                    Genre.java
1 package com.finalproject.video.game.database.api.controller;
  3 import org.springframework.beans.factory.annotation.Autowired;
15
 16 @RestController
 17 @RequestMapping("/platforms")
 18 public class PlatformController {
 19
 209
        @Autowired
 21
        private PlatformService service;
 22
 23⊖
        @RequestMapping(method=RequestMethod.GET)
        public ResponseEntity<Object> getPlatforms(){
 24
 25
            return new ResponseEntity<Object>(service.getPlatforms(), HttpStatus.OK);
 26
 27
 289
        @RequestMapping(value="/{platformId}", method=RequestMethod.GET)
 29
        public ResponseEntity<Object> getPlatform(@PathVariable Long id){
                return new ResponseEntity<Object>(service.getPlatform(id), HttpStatus.OK);
 30
 31
 32
 33⊖
        @RequestMapping(method = RequestMethod.POST)
        public ResponseEntity<Object> createPlatform(@RequestBody Platform platform) {
 34
 35
                return new ResponseEntity<Object>(service.createPlatform(platform), HttpStatus.OK);
 36
            }
 37
 38⊜
        @RequestMapping(value = "/{platformId}", method = RequestMethod.DELETE)
        public ResponseEntity<Object> deletePlatform(@PathVariable Long id) {
 39
 40
            service.deletePlatform(id);
 41
            return new ResponseEntity<Object>("Deleted platform with id:" + id, HttpStatus.OK);
 42
 43 }
 44
```

```
User.java
            VideoGameNam...
                               VideoGameDa...
                                                 Review.java
                                                                Platform.java
                                                                               Genre.java
                                                                                            VideoGar
1 package com.finalproject.video.game.database.api.controller;
  3 mport org.springframework.beans.factory.annotation.Autowired; □
 14
 15 @RestController
 16
 17 @RequestMapping("/genres")
 18 public class GenreController {
 19
        @Autowired
 200
 21
        private GenreService service;
 22
 23⊖
        @RequestMapping(method=RequestMethod.GET)
 24
        public ResponseEntity<Object> getGenres(){
 25
            return new ResponseEntity<Object>(service.getGenres(), HttpStatus.OK);
 26
 27
        @RequestMapping(value="/{genreId}", method=RequestMethod.GET)
 289
 29
        public ResponseEntity<Object> getGenre(@PathVariable Long id){
 30
                return new ResponseEntity<Object>(service.getGenre(id), HttpStatus.OK);
 31
        }
 32
 33⊖
        @RequestMapping(method = RequestMethod.POST)
        public ResponseEntity<Object> createGenre(@RequestBody Genre genre){
 34
                return new ResponseEntity<Object>(service.createGenre(genre), HttpStatus.CREATED);
 35
 36
 37
 389
        @RequestMapping(value = "/{genreId}", method = RequestMethod.DELETE)
 39
        public ResponseEntity<Object> deleteGenre(@PathVariable Long id) {
 40
            service.deleteGenre(id);
            return new ResponseEntity<Object>("Deleted genre with id:" + id, HttpStatus.OK);
 41
 42
 43
 44 }
```

```
User.java
            VideoGameName.java
                                  VideoGameDatabaseApiApplication.java
                                                                       Review.java
                                                                                      Platform
package com.finalproject.video.game.database.api.service;
  3⊕ import org.springframework.beans.factory.annotation.Autowired;
 9 @Service
10 public class UserService {
11
129
        @Autowired
13
        private UserRepository repo;
14
15⊜
        public User createUser(User user) {
16
            return repo.save(user);
17
18
        public User login(User user) throws Exception {
19⊖
            User foundUser = repo.findByUsername(user.getUsername());
 20
 21
            if (foundUser != null && foundUser.getPassword().equals(user.getPassword())) {
 22
                return foundUser;
23
            } else {
24
                throw new Exception("Invalid username or password.");
25
26
27
        }
28
29⊜
        public User getUserById(Long id) throws Exception {
30
                return repo.findById(id).get();
31
32
            } catch (Exception e) {
                throw new Exception("Exception occurred while trying to find user.");
33
34
35
        }
36
37⊖
        public User updateUser(User user, Long id) throws Exception {
38
            try {
39
                User newUser = repo.findById(id).get();
                newUser.setUsername(user.getUsername());
40
41
                newUser.setPassword(user.getPassword());
42
                return repo.save(newUser);
43
            } catch (Exception e) {
44
                throw new Exception("User does not exist.");
45
            }
46
        }
47
489
        public void deleteUser(Long id) throws Exception {
49
50
                repo.deleteById(id);
51
            } catch (Exception e) {
 52
                throw new Exception("Unable to delete user.");
53
54
        }
55
56 }
57
```

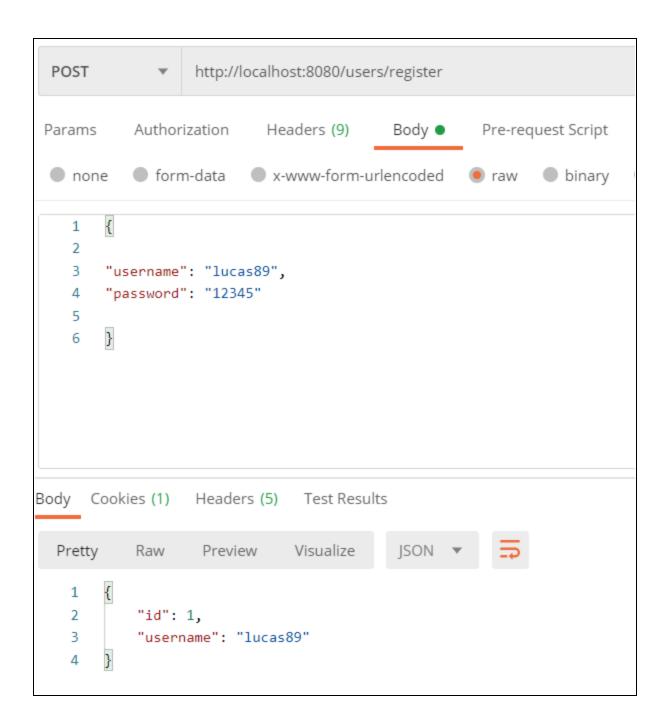
```
package com.finalproject.video.game.database.api.service;
 3
 5 import org.springframework.beans.factory.annotation.Autowired;
10
11
12 @Service
13 public class VideoGameNameService {
14
15⊖
       @Autowired
       private VideoGameNameRepository repo;
16
17
18
19
       public Iterable<VideoGameName> getAllGameNames() {
20⊝
21
           return repo.findAll();
22
23
       public VideoGameName getVideoGameName(Long gameId) {
249
25
           return repo.findById(gameId).get();
26
27
28⊖
       public VideoGameName createVideoGameName(VideoGameName videoGameName) {
29
           return repo.save(videoGameName);
30
31
32
33⊖
       public void deleteVideoGameName(Long gameId) {
34
           repo.deleteById(gameId);
35
36
37 }
```

```
Platform.java
              Genre.java
                            VideoGameNam...
                                               UserControll...
                                                               ReviewContro...
                                                                                 PlatformCon...
package com.finalproject.video.game.database.api.service;
 3⊕ import java.util.Date;
15
16 @Service
17 public class ReviewService {
18
199
       @Autowired
20
       private ReviewRepository repo;
21
22
       @Autowired VideoGameNameRepository gameRepo;
23
24
       @Autowired UserRepository userRepo;
25
26⊜
       public Iterable<Review> getAllReviews(){
27
           return repo.findAll();
28
29
30⊖
       public Review getReview(Long reviewId) {
31
            return repo.findById(reviewId).get();
32
33
34⊖
       public Review updateReview(Review review, Long reviewId) throws Exception{
35
            Review foundReview = repo.findById(reviewId).get();
36
            if (foundReview == null) {
37
                throw new Exception("Review not found.");
38
39
            foundReview.setContent(review.getContent());
40
            return repo.save(foundReview);
41
       }
42
43⊖
       public Review createReview(Review review, Long userId, Long gameId) throws Exception{
44
           User user = userRepo.findById(userId).get();
45
            VideoGameName game = gameRepo.findById(gameId).get();
46
            if (user == null || game == null) {
47
                throw new Exception("User or Game does not exist.");
48
49
            review.setDate(new Date());
50
            review.setUser(user);
51
            review.setGame(game);
52
            return repo.save(review);
53
54
55⊜
       public void deleteReview(Long reviewId) {
56
            repo.deleteById(reviewId);
57
58
59 }
```

```
VideoGameNam...
                                UserControll...
                                                ReviewContro...
                                                                 Platfc
Genre.java
1 package com.finalproject.video.game.database.api.service;
 3 import org.springframework.beans.factory.annotation.Autowired;
10 @Service
11 public class PlatformService {
            @Autowired
13
            private PlatformRepository repo;
14
            public Iterable<Platform> getPlatforms(){
15⊜
                return repo.findAll();
16
17
            public Platform getPlatform(Long platformId) {
18⊖
19
                return repo.findById(platformId).get();
 20
21
            public Platform createPlatform (Platform platform) {
 22⊖
 23
                return repo.save(platform);
 24
25
            }
 26
 27⊖
            public void deletePlatform(Long platformId) {
                repo.deleteById(platformId);
 28
            }
 29
 30 }
```

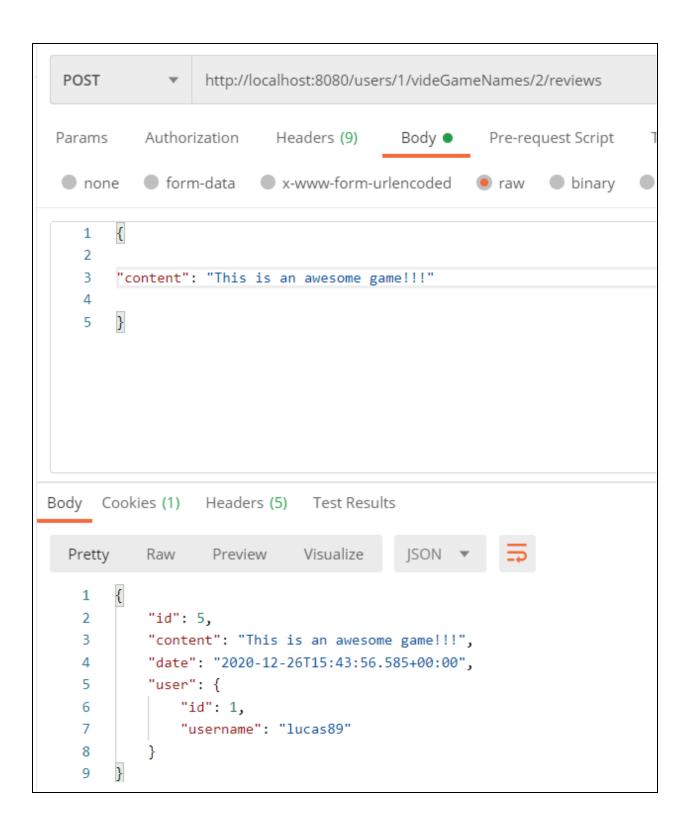
```
VideoGameNam...
                   UserControll...
                                   ReviewContro...
                                                     PlatformCon...
1 package com.finalproject.video.game.database.api.service;
  3 import org.springframework.beans.factory.annotation.Autowired;
  8
  9 @Service
 10 public class GenreService {
 11
 129
        @Autowired
 13
        private GenreRepository repo;
 14
 15
 16⊖
        public Iterable<Genre> getGenres(){
            return repo.findAll();
 17
 18
 19
        public Genre getGenre(Long genreId) {
 20⊖
 21
            return repo.findById(genreId).get();
 22
 23
 249
        public Genre createGenre(Genre genre) {
            return repo.save(genre);
 25
 26
 27
        public void deleteGenre(Long genreId) {
 289
            repo.deleteById(genreId);
 29
 30
 31
 32 }
 33
```

Screenshots of Running Application:

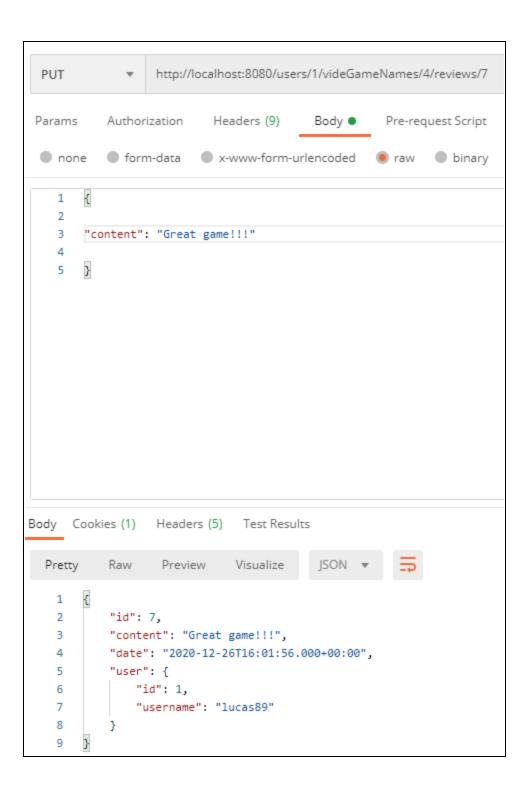


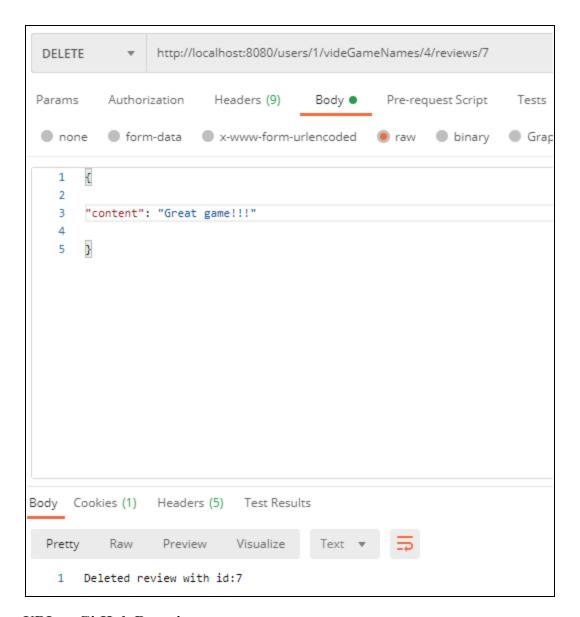
```
POST
              http://localhost:8080/videoGameNames
Params
        Authorization
                    Headers (9)
                                 Body •
                                         Pre-request Script
                                                       Tests
                                                                Settings
1
  2
  3
     "name": "NBA 2K21",
  4 "description": "NBA 2K21 is a basketball simulation video game that was developed by Vi
  5
     "ageGroup": "10+",
     "platforms": [
  6
  7
           "platform": "Xbox One"
  8
  9
 10
     "genres": [
 11
 12
            "genre": "Sports"
 13
 14
 15
     }
 16
```

```
Body Cookies (1) Headers (5) Test Results
                                           JSON ▼
                               Visualize
  Pretty
                    Preview
            Raw
    1
            "id": 2,
    2
            "name": "NBA 2K21",
    3
            "description": "NBA 2K21 is a basketball simulation video game that was developed by
    4
    5
            "ageGroup": "10+",
            "reviews": null,
    6
    7
            "platforms": [
   8
   9
                    "id": 4,
   10
                    "platform": "Xbox One",
                    "games": null
   11
   12
   13
            ],
            "genres": [
   14
   15
                    "id": 3,
   16
                    "genre": "Sports"
   17
   18
   19
   20
```



```
▼ http://localhost:8080/videoGameNames
 GET
Params Authorization Headers (9)
                                   Body • Pre-request Script
                                                               Tests Settings
Body Cookies (1) Headers (5) Test Results
 Pretty Raw Preview Visualize JSON ▼
   1 [
   2
             "id": 2,
              "name": "NBA 2K21",
   4
              "description": "NBA 2K21 is a basketball simulation video game that was developed by Visual Concepts and published by 2K Sports",
   5
             "ageGroup": "10+",
              "reviews": [
   8
                    "id": 5,
  9
                    "content": "This is an awesome game!!!",
  10
  11
                    "date": "2020-12-26T15:43:57.000+00:00",
                    "user": {
  12
                       "id": 1,
  13
  14
                       "username": "lucas89"
  15
  16
  17
  18
              "platforms": [
  19
                    "id": 4,
  20
                    "platform": "Xbox One"
  21
  22
  23
              1,
  24
              "genres": [
  25
                {
                    "id": 3,
  26
                    "genre": "Sports"
  27
  28
  29
  30
  31
```





URL to GitHub Repository: