Adding Middlewares for validation





Agenda

- Creation of Custom middleware to validate the request body for user registration
- Creation of Custom middleware to validate the request body for movie resource
- Creation of Custom middleware to validate the request body for theatre resource
- Updating existing routes with middleware validations.



Creation of Custom middleware to validate the request body for user registration

For the Movie Booking App, we will create a middleware to validate the request body of the user for registration/signup. Any valid user should be able to register itself so we will keep a check on the properties such as name, userid and make sure the user type is valid as well i.e. it is either CLIENT, CUSTOMER or ADMIN.

Let's have a look at all the validations needed one by one -

[Code Link] -

https://github.com/Vishwa07dev/mba_backend/blob/session5/middlewares/verifyUserReqBody.js

We will create middlewares for creation/registration of a user first and then for updating user details.



- 1. Create user validation middleware for creation/registration of a user
 - This middleware will have multiple validations for user registration that is discussed below, we will name it as

validateUserRequestBody = async (req, res, next) => {}



2. Validating the userName

- Here, we will check if the user has provided its name or not
- If the user's name is empty or the field is not itself given in the request then we will send a
 message saying

"Failed! Username is not provided!"

```
//Validating the userName
  if (!req.body.name) {
    res.status(400).send({
        message: "Failed! Username is not provided!"
    });
    return;
}
```

3. Validating the userId

- Here, we will check if the user has provided userId or not
- If the userId is not given in the request then we will send a message saying

"Failed! Userld is not provided!"

```
//Validating the userId
if (!req.body.userId) {
    res.status(400).send({
        message: "Failed! UserId is not provided!"
    });
    return;
}
```

4. Validating if user already exists with same userld

- Here, we will check if there is a user present with the same userld that another new user is trying to sign up with
- If the userId already exists then we will send a message saying

"Failed! Userid already exists!"

```
const user = await User.findOne({ userId: req.body.userId });
   if (user != null) {
      console.log("Inside this");
      res.status(400).send({
          message: "Failed! Userid already exists!"
      });
      return;
}
```



5. Validating the email Id

- Here, we will check if a user has provided a valid email id
- We fetch the email id from request body and pass it as parameters and call isValidEmail(req.body.email) method which if is a falsy value we will send a message saying

"Failed! Email is not valid!"

```
//Validating the email Id

if (!isValidEmail(req.body.email)) {
    res.status(400).send({
        message: "Failed! Email is not valid!"
    });
    return;
}
```



Below is the isValidEmail() method which tries to match the email string with the regular expression.

- 6. Validating if user already exists with same email id
 - Here, we will check if there is a user present with the same email id that another new user is trying to sign up with
 - If the email id already exists then we will send a message saying

"Failed! Email already exists!"

```
const email = await User.findOne({ email: req.body.email });
   if (email != null) {
      res.status(400).send({
            message: "Failed! Email already exists!"
      });
      return;
}
```

7. Validating the userType

- Here, we do not want the userType to strictly be ADMIN but we will check if the userType is either CLIENT, CUSTOMER or ADMIN
- If the userType is anything other than CLIENT, CUSTOMER or ADMIN then we will send a message saying
 - "UserType provided is invalid. Possible values CUSTOMER | CLIENT | ADMIN "
- We have imported the constant values that have userTypes

```
const constants = require("../utils/constants");
userTypes: {
          customer: 'CUSTOMER',
          client: 'CLIENT',
          admin: 'ADMIN'
        },
```



```
constants.userTypes.client, constants.userTypes.admin]
if (userType && !userTypes.includes(userType)) {
    res.status(400).send({
        message: "UserType provided is invalid. Possible values
          CLIENT | ADMIN "
CUSTOMER
    return;
```

Once the User has passed all the validation checks it will get registered.



Updating existing auth.routes.js for validating User registration:

Let's make changes to the required routes with the middleware validations -

[Code Link] -

https://github.com/Vishwa07dev/mba_backend/blob/session5/routes/auth.routes.js

 We will now update the existing auth.routes.js and add the verifyUserReqBody.validateUserRequestBody middleware validations as below.

```
app.post("/mba/api/v1/auth/signup",
```

[verifyUserReqBody.validateUserRequestBody], authController.signup);



Let's see the valid request and response for user registration first and then the different validation failures.

Valid Signup Request:

```
Post V localhost:8080/mba/api/v1/auth/signup

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON V

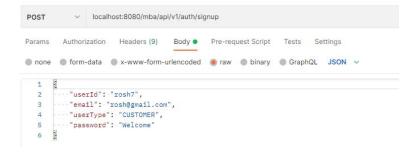
1 2 "name": "Roshan Kumar",
3 "userId": "rosh7",
4 "email": "rosh0gmail.com",
5 "userType": "CUSTOMER",
6 "password": "Welcome"
7 ]
```

Valid Signup Response:

Validation Failures:

1. Validating the userName

Request:



Validation Failures:

2. Validating the userId

Request:

Validation Failures:

3. Validating if user already exists with same userld

Request:



Validation Failures:

4. Validating the email Id

Request:



```
Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON > 

"message": "Failed! Email is not valid!"
```

Validation Failures:

5. Validating if user already exists with same email id

Request:



```
Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON > 

1  

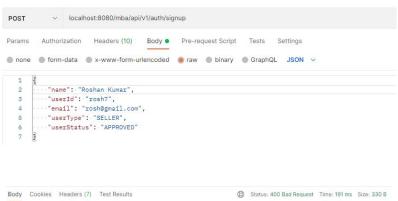
2  

**message*: "Failed! Email already exists!"
```

Validation Failures:

6. Validating the userType

Request:





As we have created validations for user registration we will now add validations for updating user details in our verifyUserReqBody.js

- 1. Create user validation middleware for updating user details
 - This middleware will have validations for updating user status and type that is discussed below, we will name it as

```
validateUserStatusAndUserType = async (req, res, next) => {}
```



2. Validating the userType

- It is the same validation for userType that we have done while user registration
- We are not allowing the user to update the type of user as anything other than CLIENT,
 CUSTOMER or ADMIN, when the user tries to do so we will send a message saying

"UserType provided is invalid. Possible values CUSTOMER | CLIENT | ADMIN "



3. Validating the userStatus

- Here, we make sure that the userStatus is is either PENDING, APPROVED or REJECTED
- If the userStatus is anything other than PENDING, APPROVED or REJECTED then we will send a message saying

"UserStatus provided is invalid. Possible values PENDING | APPROVED | REJECTED "

We have imported the constant values that have userStatus

```
const constants = require("../utils/constants");
userStatus: {
    pending: 'PENDING',
    approved: 'APPROVED',
    rejected: 'REJECTED'
}
```



```
//validating the userStatus

const userStatus = req.body.userStatus;

const userSatuses = [constants.userStatus.pending, constants.userStatus.approved,
constants.userStatus.rejected]

if (userStatus && !userSatuses.includes(userStatus)) {

res.status(400).send([

message: "UserStatus provided is invalid. Possible values PENDING | APPROVED | REJECTED "

});

return;

}
```



Updating existing user.routes.js for validating updates to User Status and Type:

Let's make changes to the required routes with the middleware validations -

[Code Link] -

https://github.com/Vishwa07dev/mba_backend/blob/session5/routes/user.routes.js

 We will now update the existing user.routes.js and add the verifyUserReqBody.validateUserStatusAndUserType middleware validations as below.

```
app.put("/crm/api/v1/users/:userId", [authJwt.verifyToken,
authJwt.isAdmin, verifyUserReqBody.validateUserStatusAndUserType],
userController.updateUser);
}
```

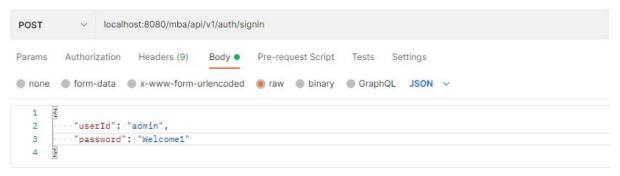


Let's see the valid request and response for updating user details first and then the validation failures.

First we need to fetch the x-access-token for admin access to update any field of user

Sign in as admin

Admin Sign in request:



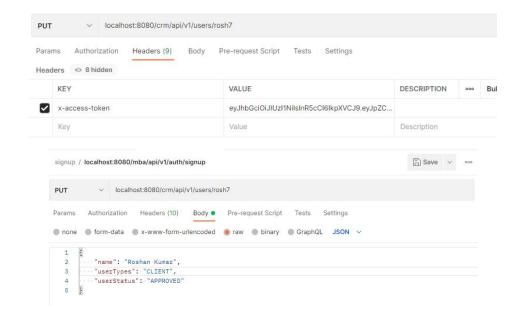
Admin Sign in response:

```
Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON V Preview V Previe
```

Valid update userType and userStatus Request:

Request Header:



Request Body:

Valid Signup Response:

```
Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON > 

"message": "User record has been updated successfully"

3 }

Status: 200 OK Time: 56 ms Size: 290 B
```

Validation Failures:

1. Validating the userType

Request:



```
Pretty Raw Preview Visualize JSON V 

"message": "UserType provided is invalid. Possible values CUSTOMER | CLIENT | ADMIN "
```

Validation Failures:

2. Validating the userStatus

Request:



We will now create a middleware to validate the request body for movie resources. Any movie with valid details should be registered. So we will keep a check on the properties such as movie name, release date, director name and movie release status.

Let's have a look at all the validations needed one by one -

[Code Link] -

https://github.com/Vishwa07dev/mba_backend/blob/session5/middlewares/verifyMovieRegBody.js



Let's name this middleware as verifyMovieReqBody.js

- 1. Create validation middleware for movie request body
 - This middleware will have multiple validations for movie request that is discussed below, we will name it as

validateMovieRequestBody = async (req, res, next) => {}



2. Validating the movie name

- Here, we will check if the user has provided its movie name or not
- If the movie name is empty or the field is not itself given in the request then we will send a message saying

"Failed! Movie name is not provided!"

```
//Validate the movie name
   if (!req.body.name) {
      return res.status(400).send({
            message: "Failed! Movie name is not provided!"
      });
}
```



3. Validating the movie releaseStatus

- Here, we will check if the user has provided movie releaseStatus or not
- If the releaseStatus is not given in the request then we will send a message saying

"Failed! Movie release status is not provided!"



- 4. Validating if correct value of movie releaseStatus is provided
 - Here, we do not want the value of releaseStatus to be anything other than UNRELEASED,
 RELEASED or BLOCKED
 - If the releaseStatus is anything other than UNRELEASED, RELEASED or BLOCKED then we will send a message saying

"Movie release status provided is invalid. Possible values UNRELEASED | RELEASED | BLOCKED "

We have imported the constant values that have releaseStatus



```
const constants = require("../utils/constants");
releaseStatus: {
         unrealeased: 'UNRELEASED',
         released: 'RELEASED',
         blocked: 'BLOCKED'
},
```

```
//Checking for the correct value of status
    const releaseStatus = req.body.releaseStatus;
    const releaseStatusTypes = [constants.releaseStatus.unrealeased,
    constants.releaseStatus.released, constants.releaseStatus.blocked];
    if (!releaseStatusTypes.includes(releaseStatus)) {
        return res.status(400).send({
            message: "Movie release status provided is invalid. Possible
        values UNRELEASED | RELEASED | BLOCKED "
        });
    }
}
```

5. Validating the movie releaseDate

- Here, we will check if the movie releaseDate is provided or not
- If the releaseDate is not given in the request then we will send a message saying

"Failed! Movie release date is not provided!"

6. Validating the director

- Here, we will check if a user has provided the director of the movie or not
- If the director is not given in the request then we will send a message saying

"Failed! Movie director is not provided!"

```
//Validate the director
if (!req.body.director) {
    return res.status(400).send({
        message: "Failed! Movie director is not provided!" }); }
```

Once all the validation checks are passed, the movie will get registered.



Updating existing movie.routes.js for validating movie registration and updating of movie details:

Let's make changes to the required routes with the middleware validations -

[Code Link] -

https://github.com/Vishwa07dev/mba_backend/blob/session5/routes/movie.routes.js

 We will now update the existing movie.routes.js and add the verifyMovieReqBody.validateMovieRequestBody middleware validations as below.

```
app.post("/mba/api/v1/movies/", [verifyMovieReqBody.
validateMovieRequestBody], movieController.createMovie);
app.put("/mba/api/v1/movies/:id", [verifyMovieReqBody.
validateMovieRequestBody], movieController.updateMovie);
```



Let's see the valid request and response for movie registration and updation first and then the different validation failures.

Valid Movie creation/registration Request:

Valid Movie creation/registration Response:

```
Body Cookies Headers (7) Test Results
                                                                        A Status: 201 Created Time: 21 ms Size: 623 B
            "name": "The Kashmir Files",
            "description": "Intense Movie",
            "casts": [
                "Mithun Chakraborty",
               "Anupam Kher"
            "trailerUrl": "http://TheKashmirFiles/trailers/1",
            "posterUrl": "http://TheKashmirFiles/posters/1",
            "language": "Hindi",
            "releaseDate": "11-03-2022",
            "director": "Vivek Agnihotri",
   12
           "releaseStatus": "RELEASED",
         "_id": "6256eb76eff5df353ef3cfdd",
            "updatedAt": "2022-04-13T15:25:42.255Z",
            "__v": 0
```

Valid Movie updation Request:

```
PUT
               localhost:8080/mba/api/v1/movies/6256f19fa39c467198fa59c0
Params Authorization Headers (9)
                                          Pre-request Script
                                 Body •
■ none ■ form-data ■ x-www-form-urlencoded ■ raw ■ binary ■ GraphQL JSON ∨
       "name": "The Kashmir Files",
       "description": "Intense Movie : Updated Realease Date",
       "casts": [
       "Mithun Chakraborty",
       "Anupam Kher"
       "trailerUrl": "http://TheKashmirFiles/trailers/1".
      "posterUrl": "http://TheKashmirFiles/posters/1",
      "language": "Hindi",
       "releaseDate": "15-04-2022",
       "director": "Vivek Agnihotri",
 13
       "releaseStatus": "RELEASED"
 14
```

Valid Movie updation Response:

```
Body Cookies Headers (7) Test Results
                                                                            (A) Status: 200 OK Time: 21 ms Size: 642 B
                            Visualize
            "_id": "6256f19fa39c467198fa59c0",
            "name": "The Kashmir Files",
            "description": "Intense Movie : Updated Realease Date",
            "casts": [
                "Mithun Chakraborty",
               "Anupam Kher"
    9
           "trailerUrl": "http://TheKashmirFiles/trailers/1",
           "posterUrl": "http://TheKashmirFiles/posters/1",
           "language": "Hindi",
  11
           "releaseDate": "15-04-2022",
  12
           "director": "Vivek Agnihotri",
  14
           "releaseStatus": "RELEASED",
            "updatedAt": "2022-04-13T15:51:59.907Z",
  16
```

Validation Failures:

1. Validating the movie name

Request:

```
POST
              localhost:8080/mba/api/v1/movies
       Authorization Headers (9)
                                          Pre-request Script
      form-data x-www-form-urlencoded raw binary
         "name": "",
       "description": "Intense Movie",
       ···"casts": [
      .... "Mithun Chakraborty",
      "Anupam Kher"
      "trailerUrl": "http://TheKashmirFiles/trailers/1",
      "posterUrl": "http://TheKashmirFiles/posters/1",
      "language": "Hindi",
      "releaseDate": "11-03-2022",
      "director": "Vivek Agnihotri",
      "releaseStatus": "RELEASED"
 14
```

Response:

```
Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON > 

"message": "Failed! Movie name is not provided!"
```

2. Validating the movie releaseStatus

Request:

```
localhost:8080/mba/api/v1/movies
POST
Params Authorization Headers (9)
                            Body •
                                   Pre-request Script Tests Settings
"name": "The Kashmir Files",
      "description": "Intense Movie",
      "casts": [
      .... "Mithun Chakraborty",
      .... "Anupam Kher"
      "trailerUrl": "http://TheKashmirFiles/trailers/1",
      "posterUrl": "http://TheKashmirFiles/posters/1",
      "language": "Hindi",
      "releaseDate": "11-03-2022".
      "director": "Vivek Agnihotri",
      "releaseStatus": ""
 13
 14
```

Response:

```
Body Cookies Headers (7) Test Results 

Pretty Raw Preview Visualize JSON > 

1  
2     "message": "Failed! Movie release status is not provided!"
```

3. Validating if correct value of movie releaseStatus is provided

Request:

```
localhost:8080/mba/api/v1/movies
POST
Params Authorization Headers (9)
                            Body Pre-request Script Tests Settings
"name": "The Kashmir Files",
      "description": "Intense Movie",
      "casts":
      "Mithun Chakraborty",
      .... "Anupam Kher"
     *** "trailerUrl": "http://TheKashmirFiles/trailers/1",
     .... "posterUrl": "http://TheKashmirFiles/posters/1",
     "language": "Hindi",
     "releaseDate": "11-03-2022".
     "director": "Vivek Agnihotri",
 13
      "releaseStatus": "REMOVED"
 14
```

Response:

4. Validating the movie releaseDate

Request:

```
POST

    localhost:8080/mba/api/v1/movies

                  Headers (9)
                                    Pre-request Script
"name": "The Kashmir Files",
      "description": "Intense Movie",
      ··· "casts": [
      "Mithun Chakraborty",
      .... "Anupam Kher"
      "trailerUrl": "http://TheKashmirFiles/trailers/1",
      "posterUrl": "http://TheKashmirFiles/posters/1",
     ····"language": "Hindi",
 10
     "releaseDate": "",
 12
     "director": "Vivek Agnihotri",
 13
       "releaseStatus": "UNRELEASED"
 14
```

Response:



5. Validating the director

Request:

```
localhost:8080/mba/api/v1/movies
      Authorization
                                  Pre-request Script
"name": "The Kashmir Files",
     "description": "Intense Movie",
     "Mithun Chakraborty",
     "Anupam Kher"
     "trailerUrl": "http://TheKashmirFiles/trailers/1",
     "posterUrl": "http://TheKashmirFiles/posters/1",
     "language": "Hindi",
 10
     "releaseDate": "11-03-2022",
     "director": "",
      ··· "releaseStatus": "RELEASED"
 14
```

Response:

```
Body Cookies Headers (7) Test Results 

Pretty Raw Preview Visualize JSON > 

"message": "Failed! Movie director is not provided!"

3 

Body Cookies Headers (7) Test Results 

Size: 298 B

"message": "Failed! Movie director is not provided!"
```

We will now create a middleware to validate the request body for theatre resources. Any theatre with valid details should be registered. So we will keep a check on the properties such as theatre name, city, pincode and description.

Let's have a look at all the validations needed one by one -

[Code Link] -

https://github.com/Vishwa07dev/mba_backend/blob/session5/middlewares/verifyTheatreRegBody.js



Let's name this middleware as verifyTheatreReqBody.js

- 1. Create validation middleware for theatre request body
 - This middleware will have multiple validations for theatre request that is discussed below, we will name it as

```
validateTheatreRequestBody = async (req, res, next) => {}
```



2. Validating the theatre name

- Here, we will check if the user has provided the theatre name or not
- If the theatre name is empty or the field is not itself given in the request then we will send a message saying

"Failed! Theatre name is not provided!"

```
//Validate the theatre name
  if (!req.body.name) {
    return res.status(400).send({
        message: "Failed! Theatre name is not provided!"
    });
}
```



3. Validating the theatre description

- Here, we will check if the user has provided theatre description or not
- If the description is not given in the request then we will send a message saying

"Failed! Theatre description is not provided!"

```
//Validate the theatre description
if(!req.body.description) {
    return res.status(400).send({
        message: "Failed! Theatre description is not provided!"
    });
}
```

4. Validating the theatre city

- Here, we will check if the theatre city is provided or not
- If the city is not given in the request then we will send a message saying

"Failed! Theatre city is not provided!"

```
//Validate the theatre city
if(!req.body.city) {
    return res.status(400).send({
        message: "Failed! Theatre city is not provided!"
    });
}
```

5. Validating the theatre pincode

- Here, we will check if a user has provided the pincode of the theatre where it is located
- If the pincode is not given in the request then we will send a message saying

"Failed! Theatre location pincode is not provided!"

```
//Validate the theatre pincode

if(!req.body.pinCode){

return res.status(400).send({

message: "Failed! Theatre location pincode is not provided !"

});

}
```



- 6. Validating if there exists same theatre at same location
 - Here, we will check if there is a theatre present with the same name at the same location based on pincode
 - If the theatre already exists then we will send a message saying

"Failed! Same theatre in same location already exists!"



```
/**

    * Validate same theatre at the same location is not created
    */

    const theatre = await Theatre.findOne({name: req.body.name , pinCode
: req.body.pinCode});

    if(theatre!=null){
        return res.status(400).send({
        message: "Failed! Same theatre in same location already exists!"
        });
    }
}
```

• Once all the validation checks are passed, the theatre will get registered/created.



Updating existing theatre.routes.js for validating theatre registration and updation of theatre details:

Let's make changes to the required routes with the middleware validations -

[Code Link] -

https://github.com/Vishwa07dev/mba_backend/blob/session5/routes/theatre.routes.js

 We will now update the existing theatre.routes.js and add the verifyTheatreReqBody.validateTheatreRequestBody middleware validations as below.

```
app.post("/mba/api/v1/theatres",[verifyTheatreReqBody.validateTheatreRequ
estBody], theatreController.createTheatre);
app.put("/mba/api/v1/theatres/:id",[verifyTheatreReqBody.validateTheatreReqBody], theatreController.updateTheatre);
```



Let's see the valid request and response for theatre registration and updation first and then the different validation failures.

Valid Theatre creation/registration Request:

Valid Theatre creation/registration Response:

Valid Theatre updation Request:

Valid Theatre updation Response:

Validation Failures:

1. Validating the theatre name

Request:

Response:



2. Validating the theatre description

Request:



3. Validating the theatre city

Request:



4. Validating the theatre pincode

Request:



5. Validating if there exists same theatre at same location

Request:

```
localhost:8080/mba/api/v1/theatres
POST
                                              Pre-request Script
Params
         Authorization
                       Headers (9)
                                    Body .
                                                                Tests
                                                                        Settings
        form-data
x-www-form-urlencoded
                                                     binary
                                                               GraphQL
                                                                          JSON V
       "name": "testTheatre",
       "description": "Newly opened",
       ...."city": "Mumbai",
       ---- "pinCode": 400075
   6
```

```
Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON > 

1  
2     "message": "Failed! Same theatre in same location already exists!"
```

Practice Code

- 1. Write an API that can delete a theatre based on the theatre name as a query parameter. If the theatre doesn't exist then it will throw an error message saying that "Theatre doesn't exist with the given name". If a theatre exists, then delete the theatre using its name
- 2. Make this deleteTheatre API secure by allowing only Admin to access it.

- 1. What is the correct representation of a middleware in Express.js?
 - A. function(req){ }
 - B. method(req){ }
 - C. function(req,res,next){ }
 - D. method(req,res,next){ }

- 1. What is the correct representation of a middleware in Express.js?
 - A. function(req){ }
 - B. method(req){ }
 - C. function(req,res,next){ }
 - D. method(req,res,next){ }

Answer: C

- 2. Which of the following middleware parses cookies bound to the client request object?
 - A. cookie
 - B. cookie-parser
 - C. cookies
 - D. None of the above

- 2. Which of the following middleware parses cookies bound to the client request object?
 - A. cookie
 - B. cookie-parser
 - C. cookies
 - D. None of the above

Answer: B

- 3. Captured values of Route parameters are populated in which of the following?
 - A. req.data
 - B. app.locals
 - C. req.params
 - D. All of the above

- 3. Captured values of Route parameters are populated in which of the following?
 - A. req.data
 - B. app.locals
 - C. req.params
 - D. All of the above

Answer: C



- 4. Identify the correct API call we make in Postman for fetching all the movies?
 - A. GET -> localhost:8080/mba/api/v1/movies/id:
 - B. PUT -> localhost:8080/mba/api/v1/movies/id:
 - C. POST > localhost:8080/mba/api/v1/movies
 - D. GET > localhost:8080/mba/api/v1/movies

- 4. Identify the correct API call we make in Postman for fetching all the movies?
 - A. GET -> localhost:8080/mba/api/v1/movies/id:
 - B. PUT -> localhost:8080/mba/api/v1/movies/id:
 - C. POST > localhost:8080/mba/api/v1/movies
 - D. GET > localhost:8080/mba/api/v1/movies

Answer: D



- 5. What is used in the is Valid Email method to check if the email is valid?
 - A. String matching
 - B. Character matching
 - C. Regular expression for String matching
 - D. All of the above

- 5. What is used in the is Valid Email method to check if the email is valid?
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Answer: C



Thank You!

