If you have anything to know about error handling, (Like create an alert) please drop a message.

Registration Page

POST: localhost:5000/api/auth/register

```
Json input:
{
    "name": "Malith Dilshan",
    "email": "kdrm421542@gmail.com",
    "password": "adminPassword123",
    "role": "admin"
```

When a user registered a unique user id is automatically created. It is not the object id in Mongodb database.

Output After Registered;

```
"user": {
       "id": "U-0004",
        "name": "Malith Dilshan",
        "email": "kdrm421542@gmail.com",
        "password": "$2b$12$4gpheIgorevRbhZUJNe0QOTWD5WdQ8CUzBozVjZiHEltI2.pX1/Zq",
        "role": "admin",
        "courses": [],
        "activityCount": 0,
        " id": "67c42582f7d53ba25a0c0cda",
        "createdAt": "2025-03-02T09:31:46.236Z",
        " v": 0
   },
    "token":
"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2N2M0MjU4MmY3ZDUzYmEyNWEwYzBjZGEiLCJp
ZCI6IlUtMDAwNCIsInJvbGUiOiJhZG1pbiIsImlhdCI6MTc0MDkwNzkwNiwiZXhwIjoxNzQwOTExNTA2fQ.Zkd
81xnV GLSIhR wNMv6nnzzCCKbLOOlVtIfML3p9k"
```

Login Page

```
POST: localhost:5000/api/auth/login
```

```
Json Input:
  "email": "kdrm421542@gmail.com",
  "password": "adminPassword123"
Output After Loggedin;
    "user": {
        " id": "67c3f1588c6ce3e6f409ab9b",
        "id": "U-0004",
        "name": "Malith Dilshan",
        "email": "kdrm421542@gmail.com",
        "password": "$2b$12$uK47F5.k1G9z42bC2vucIeYqNhrDjIIYPhFYZq0TcW8kpolnK/Iei",
        "role": "admin",
        "courses": [],
        "activityCount": 0,
        "createdAt": "2025-03-02T05:49:12.775Z",
        " v": 0
    },
    "token":
"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2N2MzZjE1ODhjNmNlM2U2ZjQwOWFiOWIiLCJp
ZCI6IlUtMDAwNCIsInJvbGUiOiJhZG1pbiIsImlhdCI6MTc0MDkwNzc1NCwiZXhwIjoxNzQwOTExMzU0fQ.bj1
wP4djl6e7jJ-L58DKTWrRAhrzG35U60dOFPG gWs"
}
```

The Auth Token will expire after one hour.

User Controller

Get all users

GET: localhost:5000/api/users

No input

Output:

```
[
   {
       "activityCount": 0,
       " id": "67bf60cebc8df970b9232802",
       "id": "U-0001",
       "name": "John Doe",
       "email": "john.doe@university.com",
       "password": "$2b$12$Qn2QJrcn158k0rlzFWxMAO0ZvHs/0dwZe3OT5GMHV/Wci.b3Xwo8m",
       "role": "admin",
       "courses": [],
       "createdAt": "2025-02-26T18:43:26.594Z",
       " v": 0
   },
       "activityCount": 0,
       " id": "67bf60eebc8df970b9232806",
       "id": "U-0002",
       "name": "Jane Smith",
       "email": "jane.smith@student.com",
       "password": "$2b$12$p4pbrS31W3BdQ62AOZENA.9TTnPihvAz.mGtSuo7/6Z1jXZKOyZci",
       "role": "admin",
       "courses": [],
       "createdAt": "2025-02-26T18:43:58.217Z",
       " v": 0
   },
       "activityCount": 0,
       " id": "67c099e4baafb6776146a974",
       "id": "U-0003",
       "name": "Ravindu Madusanka",
       "email": "kdonrmadusanka@gmail.com",
       "password": "$2b$12$mUrRw66EzWrGko8XKv8JIunGRqYxJlQxHI4UxlBkdkfaBYrTM9z0y",
       "role": "student",
       "courses": [],
       "createdAt": "2025-02-27T16:59:16.383Z",
       " v": 0
   },
```

(Array of users)

Get a single user by ID

GET: localhost:5000/api/users/:id Ex: localhost:5000/api/users/U-0001

Here the id is the user Id. When the user Id is typed the output will the user details as follows.

```
"activityCount": 0,
    "_id": "67bf60cebc8df970b9232802",
    "id": "U-0001",
    "name": "John Doe",
    "email": "john.doe@university.com",
    "password": "$2b$12$Qn2QJrcn158k0r1zFWxMAO0ZvHs/0dwZe3OT5GMHV/Wci.b3Xwo8m",
    "role": "admin",
    "courses": [],
    "createdAt": "2025-02-26T18:43:26.594Z",
    "__v": 0
}
```

After the user loaded updated the role

PUT: localhost:5000/api/users/:id/role

Json input:

```
"role": "Student"
```

Get the user activity analytics

Admin Controller

These features are capable of being accessed only by admins.

Get all users

GET: localhost:5000/api/users

```
Json output:
Γ
    {
       "activityCount": 0,
        " id": "67bf60cebc8df970b9232802",
        "id": "U-0001",
        "name": "John Doe",
        "email": "john.doe@university.com",
        "password": "$2b$12$Qn2QJrcn158k0rlzFWxMAO0ZvHs/0dwZe3OT5GMHV/Wci.b3Xwo8m",
        "role": "admin",
        "courses": [],
        "createdAt": "2025-02-26T18:43:26.594Z",
       " v": 0
    },
        "activityCount": 0,
       " id": "67bf60eebc8df970b9232806",
        "id": "U-0002",
       "name": "Jane Smith",
        "email": "jane.smith@student.com",
        "password": "$2b$12$p4pbrS31W3BdQ62AOZENA.9TTnPihvAz.mGtSuo7/6ZljXZKOyZci",
        "role": "admin",
        "courses": [],
        "createdAt": "2025-02-26T18:43:58.217Z",
        " v": 0
    },
        "activityCount": 0,
        " id": "67c099e4baafb6776146a974",
        "id": "U-0003",
        "name": "Ravindu Madusanka",
        "email": "kdonrmadusanka@gmail.com",
        "password": "$2b$12$mUrRw66EzWrGko8XKv8JIunGRqYxJlQxHI4UxlBkdkfaBYrTM9z0y",
        "role": "student",
        "courses": [],
        "createdAt": "2025-02-27T16:59:16.383Z",
       " v": 0
    },
       " id": "67c42582f7d53ba25a0c0cda",
        "id": "U-0004",
```

Get all events

GET: localhost:5000/api/admin/events

```
Json output:
```

```
[
       " id": "67c18e196a9024f7444b2ff0",
        "title": "Tech Conference 2025",
        "description": "An annual conference for software engineers and AI
enthusiasts.",
        "date": "2025-05-15T10:00:00.000Z",
        "location": "Kingston University, London",
        "organizer": {
            " id": "67bf60cebc8df970b9232802",
            "name": "John Doe",
            "email": "john.doe@university.com"
        },
        "attendees": [],
        "attendeesCount": 0,
       "createdAt": "2025-02-28T10:21:13.629Z",
        " v": 0
   }
]
```

Get all resources

GET: localhost:5000/api/admin/resources

```
[
       " id": "67c1840aff9d2b6c77f4e2a1",
       "name": "Projector A",
       "type": "equipment",
       "availability": true,
       "reservedBy": null,
       "reservationDate": null,
       "createdAt": "2025-02-28T09:38:18.278Z",
       " v": 0,
       "reservationExpiry": null
   },
       "_id": "67c19920da979622c5d1d88c",
       "name": "1-A",
       "type": "classroom",
       "availability": true,
       "reservationDate": null,
       "createdAt": "2025-02-28T11:08:16.467Z",
       " v": 0,
       "reservationExpiry": null,
       "reservedBy": null
   }
```

Event Controller

Create new event

POST: localhost:5000/api/events

Json input

```
"title": "Tech Conference 2026",

"description": "A conference for SE enthusiasts to discuss AI and DevOps.",

"date": "2026-10-19",

"location": "Kingston University, London"
```

Get all events

This is for everyone to see the events and organizers(lecturers).

```
GET: localhost:5000/api/events
[
    {
        " id": "67c18e196a9024f7444b2ff0",
        "title": "Tech Conference 2025",
        "description": "An annual conference for software engineers and AI
enthusiasts.",
        "date": "2025-05-15T10:00:00.000Z",
        "location": "Kingston University, London",
        "organizer": {
            " id": "67bf60cebc8df970b9232802",
            "name": "John Doe",
            "email": "john.doe@university.com"
        },
        "attendees": [],
        "attendeesCount": 0,
        "createdAt": "2025-02-28T10:21:13.629Z",
        " v": 0
    }
```

Get all events with attendees

Can get the details of attendees also.(Only for admin)

GET:localhost:5000/api/events/with-attendance

Json output

]

```
"organizer": {
        "_id": "67c42582f7d53ba25a0c0cda",
        "name": "Malith Dilshan",
        "email": "kdrm421542@gmail.com"
    },
    "attendees": [
            " id": "67c42582f7d53ba25a0c0cda",
            "name": "Malith Dilshan",
            "email": "kdrm421542@gmail.com"
        },
            " id": "67c099e4baafb6776146a974",
            "name": "Ravindu Madusanka",
            "email": "kdonrmadusanka@gmail.com"
    ],
    "attendeesCount": 2,
    "createdAt": "2025-03-02T12:46:32.264Z",
    " v": 2
},
```

Get the event analytics

(Put it in to the admin dashboard)

It provides total events, total attendees and first five most attended events.

GET: localhost:5000/api/events/analytics

Json output

```
" id": "67c4580cee559ec6f4183abb",
        "title": "Tech Conference 2026",
        "attendeesCount": 0
    },
        "_id": "67c44fa3a11f5af538a4bb80",
        "title": "Tech Conference 2026",
        "attendeesCount": 0
    },
    {
        " id": "67c18e196a9024f7444b2ff0",
        "title": "Tech Conference 2025",
        "attendeesCount": 0
    },
        "_id": "67c4510593c1d0603e95f805",
        "title": "Tech Conference 2026",
        "attendeesCount": 0
]
```

Mark the attendance of a particular event

POST: localhost:5000/api/:eventId/attend

Sample: localhost:5000/api/events/67c4580cee559ec6f4183abb/attend

Output Jason

```
"attendeesCount": 1,
    "createdAt": "2025-03-02T13:07:24.740Z",
    "__v": 1
}
```

Resource Controller

Add a resource

POST: localhost:5000/api/resources

```
Input Json
```

```
{
   "name": "Physics Lab 101",
   "type": "lab"
}
```

Output json

```
"name": "Physics Lab 101",
    "type": "lab",
    "availability": true,
    "_id": "67c48468aa098875c563106d",
    "reservationDate": "2025-03-02T16:16:40.365Z",
    "createdAt": "2025-03-02T16:16:40.365Z",
    "__v": 0
}
```

Reserve a resource

(It is suitable to create a radio input and load the available resource And then click to reserve a resource).

Get the available resources

GET: localhost:5000/api/resources/available

Json output

```
{
        " id": "67c1840aff9d2b6c77f4e2a1",
        "name": "Projector A",
        "type": "equipment",
        "availability": true,
        "reservedBy": null,
        "reservationDate": null,
        "createdAt": "2025-02-28T09:38:18.278Z",
        " v": 0,
        "reservationExpiry": null
    },
    {
        " id": "67c19920da979622c5d1d88c",
        "name": "1-A",
        "type": "classroom",
        "availability": true,
        "reservationDate": null,
        "createdAt": "2025-02-28T11:08:16.467Z",
        " v": 0,
        "reservationExpiry": null,
        "reservedBy": null
    }
1
```

Reserve a resource

When a resource is reserved, one day after the reservation date the reservation will expire and availability will automatically become true.

POST: localhost:5000/api/resources/:resld/reserve Sample: localhost:5000/api/resources/67c48e47d74a57ef6eb9414b/reserve

```
"_id": "67c48e47d74a57ef6eb9414b",
    "name": "2-b",
    "type": "classroom",
    "availability": false,
```

```
"reservationDate": "2025-03-10T03:42:00.000Z",
    "createdAt": "2025-03-02T16:58:47.097Z",
    "__v": 0,
    "reservedBy": "67c42582f7d53ba25a0c0cda",
    "reservationExpiry": "2025-03-11T03:42:00.000Z"
}
```

Get all resources

GET: localhost:5000/api/resources

```
[
       " id": "67c19920da979622c5d1d88c",
       "name": "1-A",
       "type": "classroom",
       "availability": false,
       "reservationDate": "2025-03-03T00:00:00.000Z",
       "createdAt": "2025-02-28T11:08:16.467Z",
       " v": 0,
       "reservationExpiry": "2025-03-04T03:30:00.000Z",
       "reservedBy": {
           " id": "67c42582f7d53ba25a0c0cda",
           "name": "Malith Dilshan",
           "email": "kdrm421542@gmail.com"
   },
       "_id": "67c48468aa098875c563106d",
       "name": "Physics Lab 101",
       "type": "lab",
       "availability": false,
       "reservationDate": null,
       "createdAt": "2025-03-02T16:16:40.365Z",
       " v": 0,
       "reservationExpiry": null,
       "reservedBy": null
   },
       " id": "67c48e47d74a57ef6eb9414b",
```

Get the analytics (Add to the admin dashboard)

Here you can get the total resources, total reserved resources, most reserved resources.

GET: local host: 5000/api/resources/analytics

Schedule Controller (For Students)

Add an event to the schedule

(The above has not been integrated by adding google calendar, If the time will be available we can do it)

POST: localhost:5000/api/schedules/events

Input Json

```
"title": "Machine Learning Exam",

"description": "Final exam covering supervised and unsupervised learning topics.",

"date": "2025-03-20T10:00:00Z",

"location": "Room 205, Science Building",

"type": "exam"
```

```
"studentId": "67c42582f7d53ba25a0c0cda",
   "events": [
       {
            "title": "Machine Learning Exam",
            "description": "Final exam covering supervised and unsupervised learning
topics.",
            "date": "2025-03-20T10:00:00.000Z",
            "location": "Room 205, Science Building",
            "type": "exam",
            " id": "67c49347d74a57ef6eb94171",
            "createdAt": "2025-03-02T17:20:07.791Z"
    ],
    " id": "67c49347d74a57ef6eb9416f",
    "createdAt": "2025-03-02T17:20:07.472Z",
    " v": 1
}
```

Update an event in the schedule

PUT: localhost:5000/api/schedules/events/67c49347d74a57ef6eb94171

```
Input json
```

```
{
  "location": "Room 402, Computer Science Building"
}
```

Here you can provide whatever field to update.

Output json

```
{
    "message": "Your schedule has been updated.",
    "schedule": {
       " id": "67c49347d74a57ef6eb9416f",
        "studentId": "67c42582f7d53ba25a0c0cda",
        "events": [
            {
                "title": "Machine Learning Exam",
                "description": "Final exam covering supervised and unsupervised
learning topics.",
                "date": "2025-03-20T10:00:00.000Z",
                "location": "Room 402, Computer Science Building",
                "type": "exam",
                " id": "67c49347d74a57ef6eb94171",
                "createdAt": "2025-03-02T17:20:07.791Z"
           }
        ],
        "createdAt": "2025-03-02T17:20:07.472Z",
       " v": 2
    }
}
```

Get the schedule of the current user

GET: localhost:5000/api/schedules

Json output

{

```
" id": "67c49347d74a57ef6eb9416f",
    "studentId": {
        " id": "67c42582f7d53ba25a0c0cda",
        "name": "Malith Dilshan",
       "email": "kdrm421542@gmail.com"
    },
    "events": [
       {
            "title": "Machine Learning Exam",
            "description": "Final exam covering supervised and unsupervised learning
topics.",
            "date": "2025-03-20T10:00:00.000Z",
            "location": "Room 402, Computer Science Building",
            "type": "exam",
            " id": "67c49347d74a57ef6eb94171",
            "createdAt": "2025-03-02T17:20:07.791Z"
   ],
   "createdAt": "2025-03-02T17:20:07.472Z",
    " v": 2
```

Delete an event from the current user schedule

DELETE: localhost:5000/api/schedules/events/67c49347d74a57ef6eb94171

Course Controller

Create a course

POST : localhost:5000/api/courses (Only lecturers can create a course)

There is a functionality to add the lecture materials when creating a course, If you have anything ask me, please drop a message.

Input json

```
"name": "Machine Learning Fundamentals",

"code": "ML101",

"description": "Introduction to supervised and unsupervised learning techniques.",

"schedule": {
    "day": "Monday",
    "startTime": "09:00",
    "endTime": "11:00"
}
```

```
"message": "A new Course has been created",
"course": {
    "name": "Machine Learning Fundamentals",
    "code": "ML101",
```

Register for a course

POST: localhost:5000/api/courses/67c49c2981924e42896866fe/register

```
"message": "Course registration successful",
    "course": {
        "schedule": {
            "day": "Monday",
            "startTime": "09:00",
           "endTime": "11:00"
        },
        " id": "67c49c2981924e42896866fe",
        "name": "Machine Learning Fundamentals",
        "code": "ML101",
        "description": "Introduction to supervised and unsupervised learning
techniques.",
        "instructor": "67c42582f7d53ba25a0c0cda",
        "students": [
            "67c42582f7d53ba25a0c0cda"
       ],
        "lectureMaterials": [],
        "createdAt": "2025-03-02T17:58:01.768Z",
        " v": 1
```

}

Get the course registered by current user

GET: localhost:5000/api/courses/schedule

Output json

```
[
   {
        "schedule": {
            "day": "Monday",
            "startTime": "09:00",
            "endTime": "11:00"
        },
        "_id": "67c49c2981924e42896866fe",
        "name": "Machine Learning Fundamentals",
        "code": "ML101",
        "description": "Introduction to supervised and unsupervised learning
techniques.",
        "instructor": {
           " id": "67c42582f7d53ba25a0c0cda",
            "name": "Malith Dilshan",
            "email": "kdrm421542@gmail.com"
        },
        "students": [
            "67c42582f7d53ba25a0c0cda"
        ],
        "lectureMaterials": [],
        "createdAt": "2025-03-02T17:58:01.768Z",
       " v": 1
    }
]
```

Get the course by id

Only accessed for the admins

Here the admin can view all about course, lecturer details, registered student details.

```
GET: localhost:5000/api/courses/67c43d0fd0091e8015cd30e7
{
    "schedule": {
        "day": "Monday",
        "startTime": "10:00 AM",
        "endTime": "12:00 PM"
    " id": "67c43d0fd0091e8015cd30e7",
    "name": "Introduction to Artificial Intelligence",
    "code": "AI101",
    "description": "An introductory course on Artificial Intelligence covering
fundamental concepts and applications.",
    "instructor": {
        " id": "67c42582f7d53ba25a0c0cda",
        "name": "Malith Dilshan",
        "email": "kdrm421542@gmail.com"
    "students": [
            " id": "67c42582f7d53ba25a0c0cda",
            "name": "Malith Dilshan",
            "email": "kdrm421542@gmail.com"
        }
    ],
    "lectureMaterials": [],
    "createdAt": "2025-03-02T11:12:15.676Z",
    " v": 1
Get courses
(Get the courses available for students)
```

GET: localhost:5000/api/courses

```
"startTime": "10:00 AM",
            "endTime": "12:00 PM"
        },
        " id": "67c43d0fd0091e8015cd30e7",
        "name": "Introduction to Artificial Intelligence",
        "code": "AI101",
        "description": "An introductory course on Artificial Intelligence covering
fundamental concepts and applications.",
        "instructor": {
            " id": "67c42582f7d53ba25a0c0cda",
            "name": "Malith Dilshan",
            "email": "kdrm421542@gmail.com"
        },
        "students": [
            "67c42582f7d53ba25a0c0cda"
        ],
        "lectureMaterials": [],
        "createdAt": "2025-03-02T11:12:15.676Z",
        " v": 1
   },
        "schedule": {
           "day": "Monday",
            "startTime": "09:00",
           "endTime": "11:00"
        " id": "67c49c2981924e42896866fe",
        "name": "Machine Learning Fundamentals",
        "code": "ML101",
        "description": "Introduction to supervised and unsupervised learning
techniques.",
        "instructor": {
            " id": "67c42582f7d53ba25a0c0cda",
            "name": "Malith Dilshan",
            "email": "kdrm421542@gmail.com"
        },
        "students": [
            "67c42582f7d53ba25a0c0cda"
       ],
        "lectureMaterials": [],
        "createdAt": "2025-03-02T17:58:01.768Z",
        " v": 1
```

```
}
```

Get the lecture materials related to a course

Still no any materials has been uploaded.

GET: localhost:5000/api/courses/67c43d0fd0091e8015cd30e7/materials

Output json

```
"message": "No lecture materials found for this course"
}
```

Notification Controller

Fetch notifications related to a current user

GET: localhost:5000/api/notifications

```
[
    "_id": "67c45a4964e71ad43d5712ae",
    "userId": {
        "_id": "67c42582f7d53ba25a0c0cda",
        "name": "Malith Dilshan",
        "email": "kdrm421542@gmail.com"
    },
    "message": "New event: Tech Conference 2026 on 2026-10-19",
    "read": false,
    "createdAt": "2025-03-02T13:16:57.619Z",
    "__v": 0
    },
    {
        "_id": "67c49ae100715ff8d7e42e8b",
        "userId": {
```

```
"_id": "67c42582f7d53ba25a0c0cda",
            "name": "Malith Dilshan",
            "email": "kdrm421542@gmail.com"
        },
        "message": "New course: Machine Learning Fundamentals (ML101) has been
created. Check it out now!",
        "read": false,
        "createdAt": "2025-03-02T17:52:33.542Z",
        " v": 0
   },
        " id": "67c49c2a81924e4289686704",
        "userId": {
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