

# CS 203 Lab Assignment 1

Data Collection using OpenTelemetry and Jaeger

## Team Members:

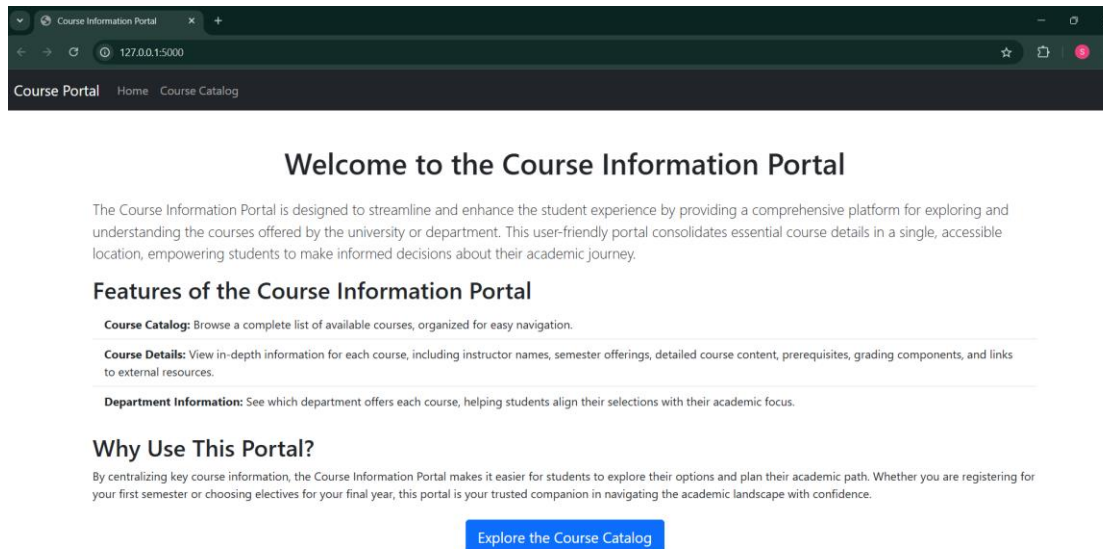
Name	Roll
Soham Gaonkar	23110314
Chaitanya Sharma	23110072

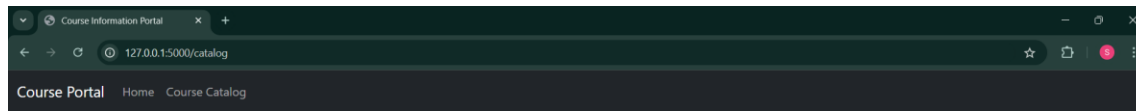
Github Repository: [https://github.com/Soham-Gaonkar/CS\\_203\\_Labs](https://github.com/Soham-Gaonkar/CS_203_Labs)

## Features

### 1. Logging and Tracing of Page Visits

1. **Screenshot 1 , 2:** Homepage and Course Catalog page.



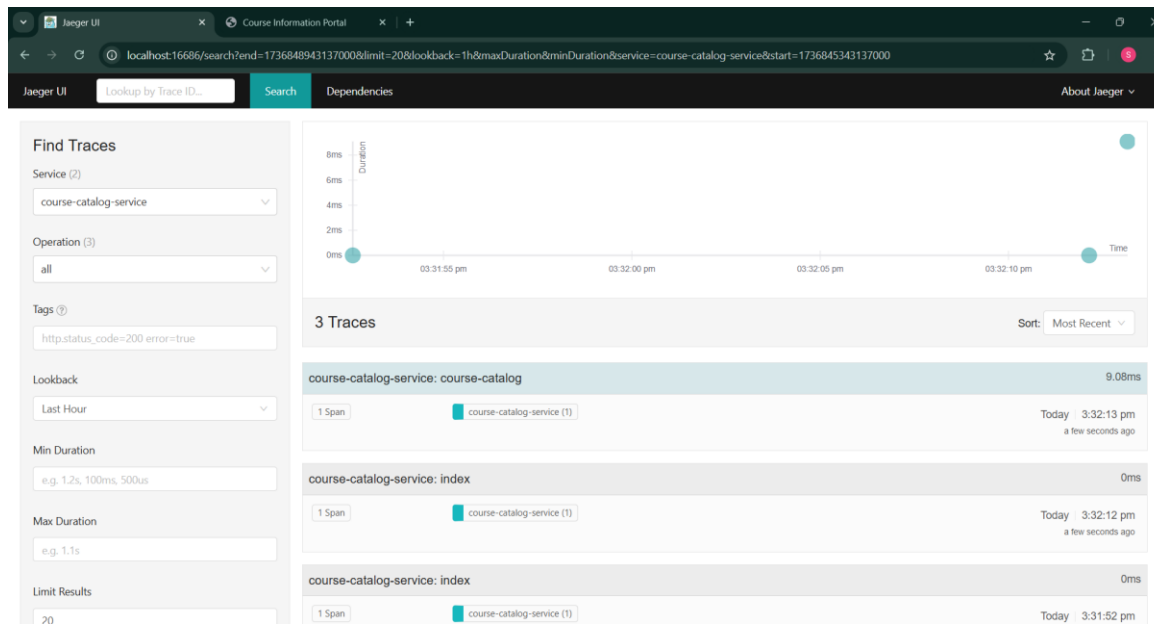


## Course Catalog

[Add Course](#)

- [Introduction to Computer Science](#) - CS101
- [Software and Tools for AI](#) - CS 203
- [Intro to Data Science](#) - 328
- [Probability and Random Processes](#) - 333
- [Intro to Electrical Engineering](#) - 113

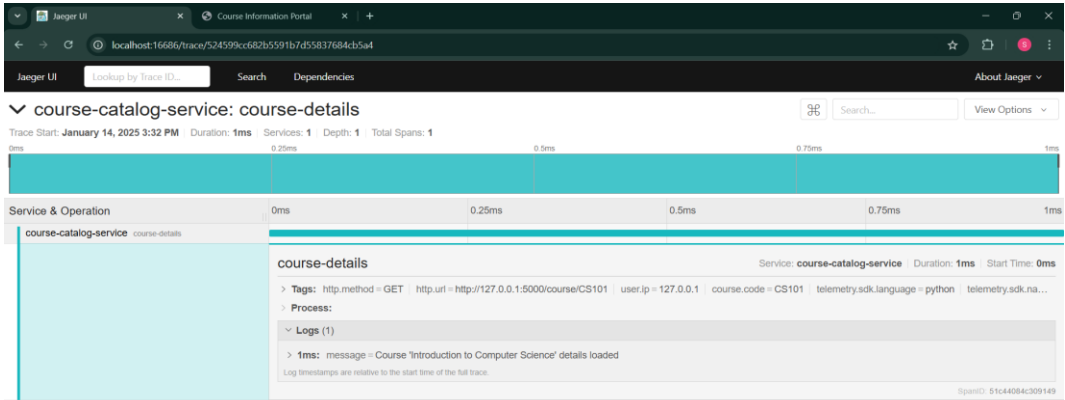
2. Screenshot 3: Trace Collected on Jaeger of homepage and course catalog visit.



3. Screenshot 4: Viewing Course Details.

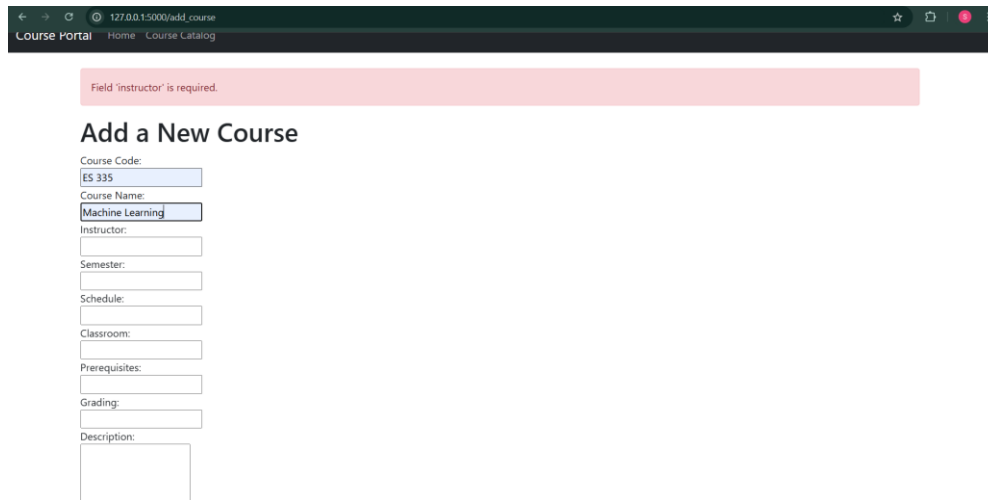


4. Screenshot 5: Trace Collected on Jaeger of course page visit.



## 2. Adding Courses

### 1. Screenshot 6: Incomplete Form Submission.



The screenshot shows a web browser window with the address bar displaying '127.0.0.1:5000/add\_course'. The browser's address bar also shows 'Course Portal' and navigation links for 'Home' and 'Course Catalog'. A red error message at the top of the page states: 'Field 'instructor' is required.' Below this message is the heading 'Add a New Course'. The form contains several input fields: 'Course Code:' with the value 'ES 335', 'Course Name:' with the value 'Machine Learning', 'Instructor:', 'Semester:', 'Schedule:', 'Classroom:', 'Prerequisites:', 'Grading:', and 'Description:'. The 'Instructor' field is empty, which is why the error message is displayed.

### 2. Screenshot 7 , 8 , 9: Confirmation message after successfully adding a course.

127.0.0.1:5000/add\_course

Add a New Course

Course Code:  
ES 335

Course Name:  
Machine Learning

Instructor:  
Nipun Batra

Semester:  
3 rd Sem

Schedule:  
N1 N2

Classroom:  
AB 10/103

Prerequisites:  
-

Grading:  
A+ >98 ,A 90>A- 80>

Description:  
Recommended for  
second year students

Add Course

[Back to Home](#)

Course Portal

Home

Course Catalog

Course 'Machine Learning' added successfully!

## Course Catalog

[Add Course](#)

- [Introduction to Computer Science](#) - CS101
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- [Probability and Random Processes](#) - 333
- [Intro to Electrical Engineering](#) - 113
- [Machine Learning](#) - ES 335

127.0.0.1:5000/course/ES%20335

Machine Learning (ES 335)

Instructor: Nipun Batra

Semester: 3 rd Sem

Schedule: N1 N2

Classroom: AB 10/103

Prerequisites: -

Grading: A+ >98 ,A 90>A- 80>

Description: Recommended for second year students.

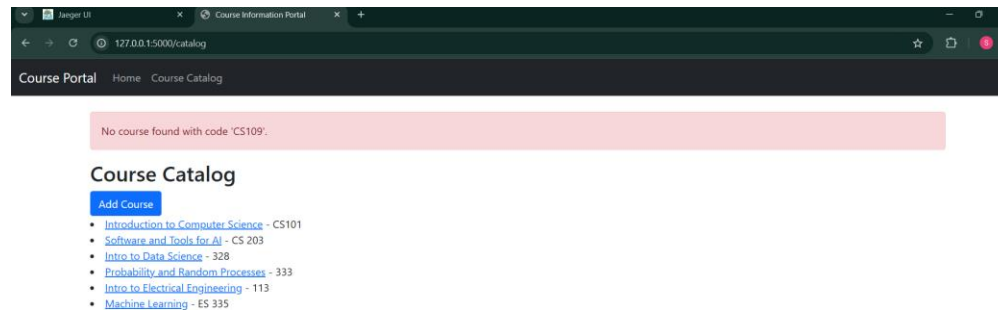
[Back to Catalog](#)

### 3. Screenshot 10: Log of successful course addition.

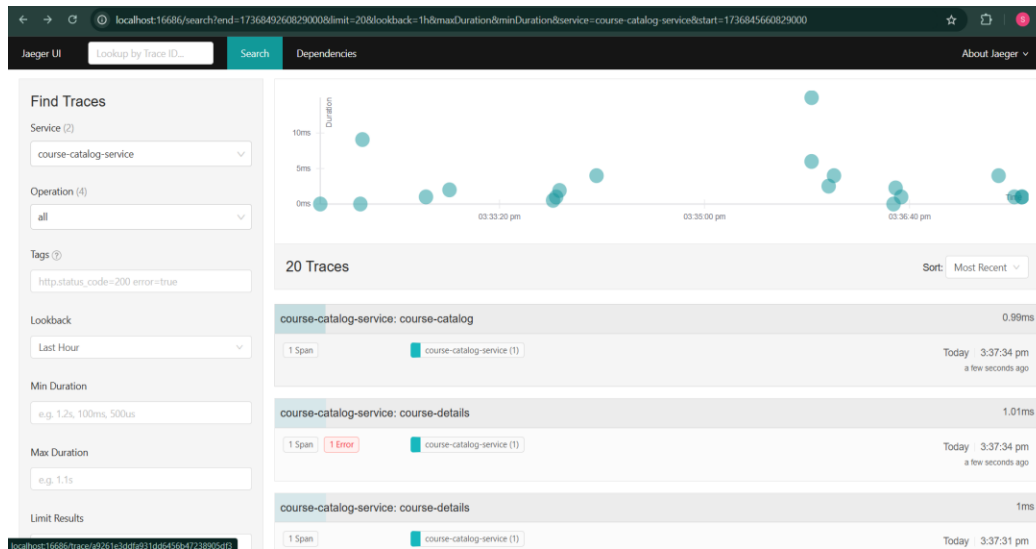
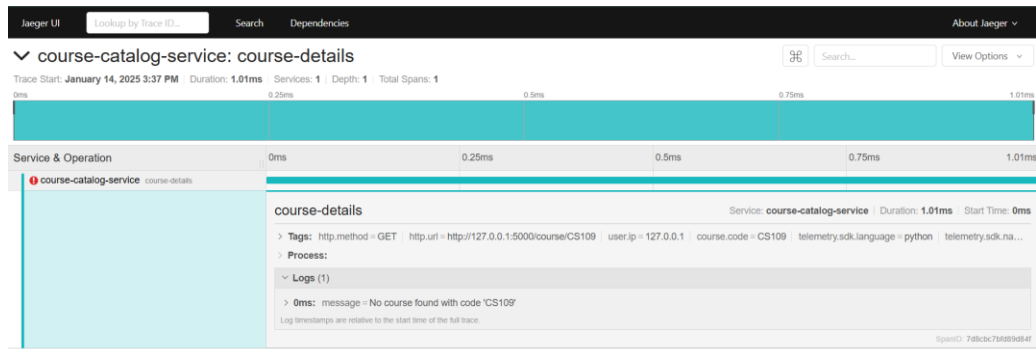
```
    ],
    "schema_url": ""
  },
  ],
  "schema_url": ""
}
]
}
127.0.0.1 - - [14/Jan/2025 16:07:19] "POST /add_course HTTP/1.1" 302 -
127.0.0.1 - - [14/Jan/2025 16:07:19] "GET /catalog HTTP/1.1" 200 -
{
  "resource_metrics": [
    {
      "resource": {
        "attributes": {
          "telemetry.sdk.language": "python",
          "telemetry.sdk.name": "opentelemetry",
          "telemetry.sdk.version": "1.29.0",
          "service.name": "unknown_service"
        }
      }
    }
  ]
}
```

## 2. Invalid Page Requests and Error Handling

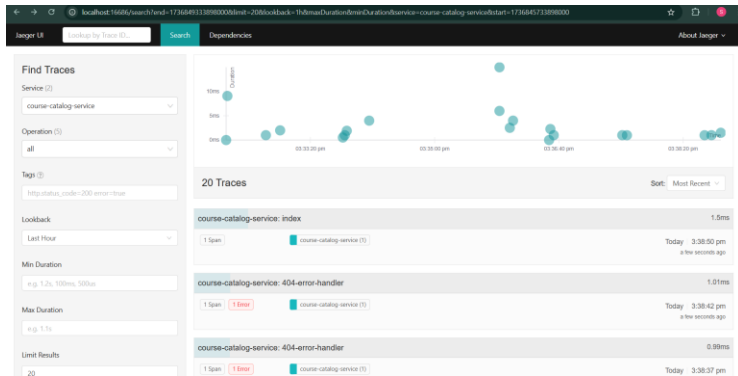
### 1. Screenshot 10: Invalid Course ID.



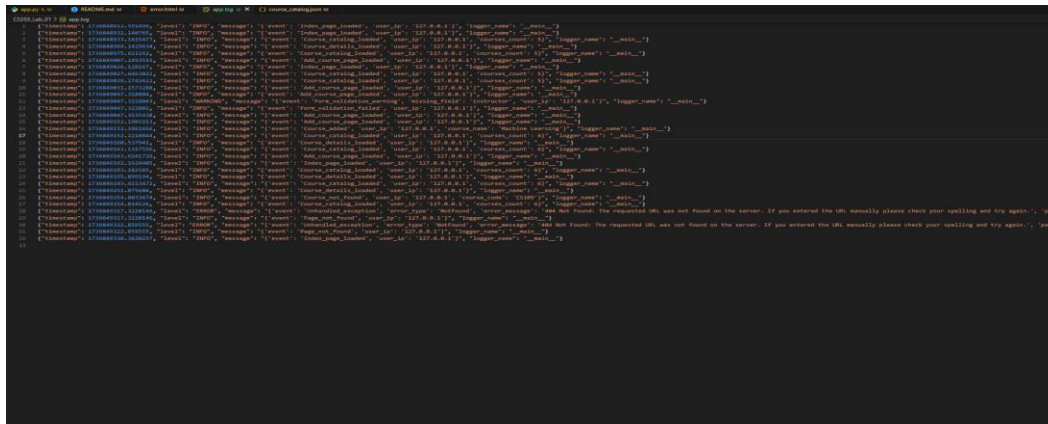
### 2. Screenshot 11: Tracing data for invalid course request.



### 3. Screenshot 12: Invalid Page Handling.



#### 4. Screenshot 13: Structured Logs Saved in JSON Format





### 3. Metrics Data

1. Screenshot 14: Total number of requests made to each endpoint.

```

"requests": [
  {
    "name": "total_requests_index",
    "description": "Total number of requests",
    "unit": "s",
    "data": {
      "data_points": [
        {
          "attributes": {
            "index": "1"
          },
          "start_time_unix_nano": 173048891201691000,
          "time_unix_nano": 1730489399999163000,
          "value": 5,
          "examples": []
        }
      ]
    }
  },
  {
    "attributes": {
      "catalog": "Acatalog"
    },
    {
      "start_time_unix_nano": 173048893316653000,
      "time_unix_nano": 1730489399999163000,
      "value": 5,
      "examples": []
    }
  },
  {
    "attributes": {
      "course_id": "CcourseC1181"
    },
    {
      "start_time_unix_nano": 173048934411921000,
      "time_unix_nano": 1730489399999163000,
      "value": 2,
      "examples": []
    }
  },
  {
    "attributes": {
      "add_course": "add_course"
    },
    {
      "start_time_unix_nano": 173048987248151000,
      "time_unix_nano": 1730489399999163000,
      "value": 6,
      "examples": []
    }
  },
  {
    "attributes": {
      "course_id": "CcourseIS 237"
    },
    {
      "start_time_unix_nano": 173049116573633000,
      "time_unix_nano": 1730489399999163000,
      "value": 1,
      "examples": []
    }
  },
  {
    "attributes": {
      "course_id": "CcourseC1181"
    },
    {
      "start_time_unix_nano": 1730491254881367000,
      "time_unix_nano": 1730489399999163000,
      "value": 1,
      "examples": []
    }
  }
]
}

```

2. Screenshot 15: Processing time for each endpoint.

[illegible]

3. Screenshot 16: Error Count for each endpoint.

```
    },
    {
      "name": "exceptions_index",
      "description": "Total number of exceptions",
      "unit": "1",
      "data": {
        "data_points": [
          {
            "attributes": {},
            "start_time_unix_msec": 17364011732016600,
            "time_unix_msec": 17364010812830000,
            "value": 2,
            "exemplars": []
          }
        ],
        "aggregation_temporality": 2,
        "is_monotonic": true
      }
    },
    "schema_url": ""
  },
  "schema_url": ""
}
```