



**Ballerina**  
Swan Lake

## Collaborative Learning Initiatives : WSO2/Ballerina and Universities



H1 2024

# About WSO2

- Founded in 2005, WSO2 was initially an open source middleware company.
- Today, we offer a suite of Integration, API management, and IAM technologies, available as open source or SaaS, enabling enterprises to create digital experiences quickly, easily, and securely.

## API Management

Deliver your business as APIs in any deployment environment.



API Platform for k8s

## Integration

New Programming Language for integration and Digital PaaS

Ballerina  
Swan Lake

choreo



Micro Integrator

## Identity and Access Management

Modern IAM solution for your on-premises or cloud environment.

WSO2 Identity Server

ASGARDEO\*

## Solutions

Pre-built APIs, Integrations, IDevPs, CIAM capabilities, and on-premises/SaaS solutions

WSO2  
Open Banking

WSO2  
Open Healthcare

## About Ballerina

# Flexible, Powerful, Beautiful Integrations as Code with Ballerina

- ✓ Open source, cloud-native programming language optimized for integration
- ✓ Batteries included: Rich ecosystem of network protocols, data formats, and connectors
- ✓ Edit/view source code textually or graphically as sequence diagrams and flowcharts
- ✓ Built-in, easy and efficient concurrency with sequence diagrams and safety primitives
- ✓ Developed by [WSO2](#) since 2016 and first released in February 2022



# Goals of the Program



## **For Students and the University:**

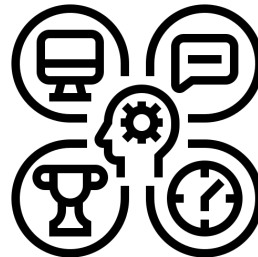
- We envision offering comprehensive learning experiences that equip students with industry-relevant skills.
- These skills, in turn, will prove invaluable in their academic projects, industrial internships, and eventual professional endeavors.

## **For Ballerina/WSO2:**

- The cornerstone of our endeavor is to leverage the Ballerina programming language as a central teaching tool during these programs.
- We aim to raise awareness and understanding of the language among university students, thereby nurturing a future generation of developers with cutting-edge expertise to help the growth of the Ballerina community.

## Some Initiatives

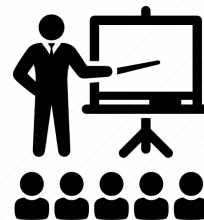
- Guest Lectures and Talks
- Workshops and Training Sessions
- Hackathons and Coding Challenges
- Research Collaborations
- Open-source Projects
- Project Mentorship



# Guest Lectures and Talks

- **Objective:** Provide students with valuable insights into contemporary industry practices.
- **Approach:** Can be part of non-credit modules, a guest lecture or student technical community group events.
- **Content:** Engaging sessions focused on vital topics such as
  - a. easy data persistence with databases
  - b. integration protocols
  - c. data oriented programming
  - d. microservices and cloud-native application development
  - e. application security

Content can be based on use cases related to projects of students too.



# Workshops and Training Sessions

- **Objective:** Empower students with practical skills and in-depth knowledge in cutting-edge technologies used in the industry.
- **Content:** Engaging sessions on interesting topics, utilizing Ballerina to demonstrate concepts.
- **Culmination:** The series concludes with a mini hackathon for students to apply their learnings with cash prizes and swag for participants.



# Hackathons and Coding Challenges

- **Objective:** Enhance the creativity, innovation, and teamwork while exploring new technologies and solving real-world problems
- **Content:** Engaging sessions on interesting topics, utilizing Ballerina to demonstrate concepts followed by a coding challenge/hackathon.
- **Culmination:** The series concludes with cash prizes and swag for participants.





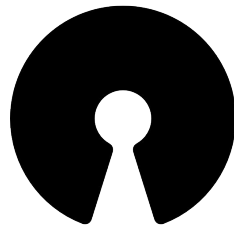
# Research Collaboration

- **Objective:** Students get the opportunity to explore innovative uses of technology and work on impactful projects.
- **Scope:** Research ideas will be in various domains with Ballerina utilized for the implementation of the solution.
- **Learning Outcome:** Students get to enhance their research skills and contribute to technological advancement using Ballerina.
- **Approach:** Joint supervision for the research projects with required guidance for implementing the solution.



## Open-source Projects

- **Objective:** Students get the opportunity to contribute to open-source projects. This can be an excellent way for students to gain practical experience in community-driven development.
- **Scope:** Projects can range from small to complex with Ballerina utilized for writing the code.
- **Learning Outcome:** Students get to experience community-driven development, and collaborate with developers worldwide while using Ballerina.
- **Approach:** Collaborating with students to provide mentorship and required project guidance.



# Project Mentorship

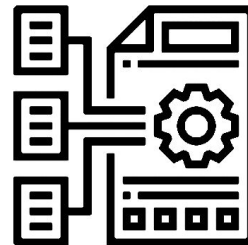
- **Objectives:** Enhance students' software development skills aligning with industry practices and standards.
- **Scope:** Projects can range from small to complex projects depending on the course requirement.
- **Learning Outcome:** Students will develop hands-on experience by using cutting-edge technology suited to their project requirements.
- **Approach:** Collaborating with lecturers and students to provide mentorship and required project guidance.



**More Initiatives...**

# Compiler Design Sessions

- **Objective:** Deep dive into compiler design theories. Will help the subjects like Compiler Theory in the curriculum.
- **Content:** 1-2 sessions dedicated to compiler design concepts and their practical implementation in Ballerina.
- **Importance:** Enhances understanding of language design principles and provides hands-on experience.



# Ballerina in Teaching

- **Potential:** Exploring the use of Ballerina as a teaching language for appropriate subjects.
- **Approach:** Collaboration with lecturers to integrate Ballerina into curriculum, requiring a moderate learning curve.
- **Benefits:** Exposing students to a modern programming language.



# Collaborations

- The University of Texas at Dallas, USA
- Sikkim Manipal Institute of Technology, India
- Bennett University, India
- KR Mangalam University, India
- KIET Group of Institutions, India
- MAIT Delhi Campus, India
- Manav Rachna International Institute of Research & Studies, India
- Namibia University of Science and Technology, Namibia
- Informatics Institute of Technology, Sri Lanka
- University of Moratuwa, Sri Lanka
- University of Peradeniya, Sri Lanka
- University of Colombo, Sri Lanka

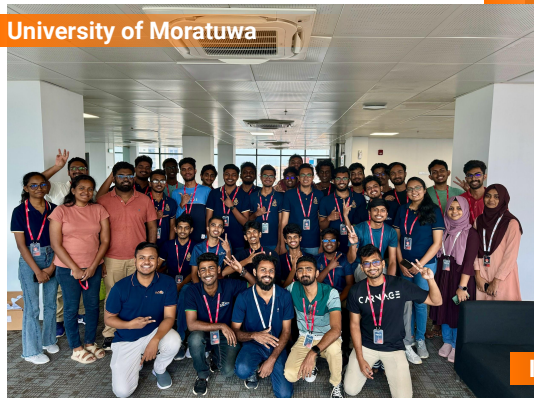
and more...



# Collaborations

Manav Rachna International Institute of Research & Studies

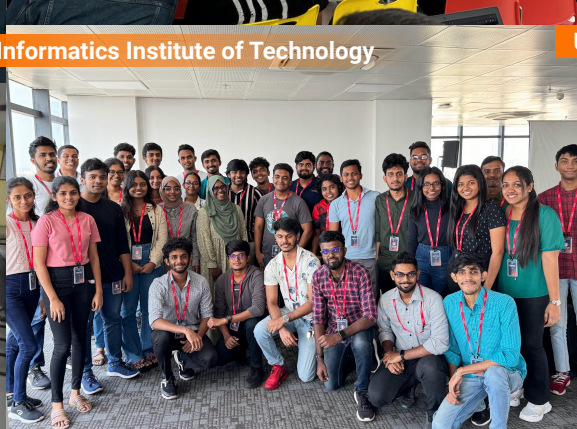
University of Moratuwa



Bennett University



Informatics Institute of Technology



University of Peradeniya



Sikkim Manipal Institute of Technology



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5GM2+5V6, E Quad Portico, Majitar, Sikkim 737136, India  
Lat 27.182913°  
Long 88.50181°  
14/08/23 06:22 PM GMT +05:30

Google

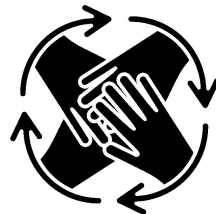
GPS Map Camera



## How to get involved

- **University Coordination:** Coordinate with university course coordinators to schedule sessions and involve lecturers.
- **Participation:** Encourage students to attend sessions, contribute to projects, and join the mini hackathon.
- **Support:** Ballerina experts available to assist with sessions, conduct hackathons, help with projects and answer questions.

Email to : [contact@ballerina.io](mailto:contact@ballerina.io)



# Thanks!



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