# Qiskit Hackathon at World of Quantum

June 24-25



Attendee Guide



## About

Welcome to Qiskit Hackathon at World of QUANTUM!

We are excited to welcome you to our hackathon in Germany and to see what amazing projects you create.

Please read through this Attendee Guide to find answers about the structure, setup, agenda, and resources for the hackathon. A more detailed version that includes the challenge information will be shared at the event.

We'll see you at the Qiskit Hackathon at World of QUANTUM!

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### Schedule



### **Training**

**June 12 @16:00 CET:** Introduction to quantum computing with Qiskit [*Join here*]

#### 24 June

Tuesday

Snacks, drinks, and throughout the entire

coffee will be available hackathon

### 25 June

Wednesday

| 11:00 | Check-In at the Hackathon Space                   |
|-------|---------------------------------------------------|
| 12:00 | Opening Presentation and Guideline Review         |
| 12:30 | Lunch and Team Formation                          |
| 13:30 | Start of the Hacking Phase in the Hackathon Space |
| 18:30 | Dinner                                            |
| 24:00 | Midnight Snack                                    |

Between 20:00 (24 June) and 08:00 (25 June) you may ask questions in the Qiskit Slack Channel #woq25-hackathon-support for remote assistance. Please allow a few days for approval to go through. Contact <u>serena.godwin@ibm.com</u> with further questions or concerns.

#### **Breakfast** 08:00

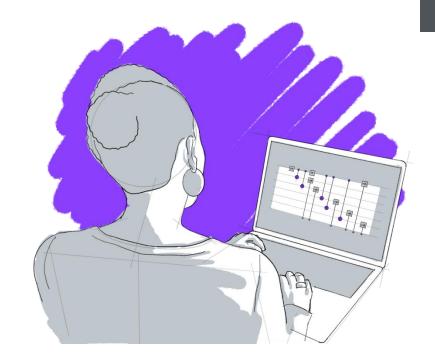
Lunch 12:00

13:30 End of the Hacking Phase and start of the Judging Phase

15:00 - 16:25 Optional Presentations in the hackathon space

16:30 - 17:00Closing Ceremony on main stage at World of QUANTUM

Note: Time zone is CET



### Code of Conduct

The Qiskit Hackathon at World of QUANTUM is committed to maintaining the highest level of enjoyment, accessibility, and inclusivity by maintaining an environment of respect, empathy, and compassion for others. In order to support that, we ask that each attendee review the **Qiskit Community Code** of Conduct before the event, and be familiar with our community standards to join us in maintaining a safe and welcoming event for all.

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### **Useful Information**



#### What to bring

We recommend bringing the below to make the most of your hackathon experience:

- Laptop with charger
- Phone charger
- Germany electric adapter if needed
- Notebook and pen
- · Comfortable clothing
  - Jumper/jacket as fair halls can be slightly cold
- Re-usable water bottle

### Food and beverage

- Food and beverages will be provided by the organizers throughout the hackathon.
- Please refer to the Schedule on page 03 for expected mealtimes.
- Food restrictions have been taken into account, but we recommend you bring your own food items if you are concerned about the available offerings.

#### Staying overnight

- Hackathon attendees are welcome to stay overnight in the hackathon space if desired.
  - If you plan on staying overnight, we recommend you plan accordingly with any items you might need such as blankets, pillows, sleeping bag and personal toiletries.
- Your hackathon ticket also allows you to leave and enter the venue throughout the night if needed.
- A security guard will be monitoring the space throughout the night.

### Team Formation



#### **Team Formation**

Once you've reviewed the challenge format, you should connect with other attendees to form a group!

Group up in teams of a minimum of 4 or maximum of 5 members.

If you are interested in a topic based on the challenge format, write it on one of the boards so that others can join your team.

Interested in joining a team? Check out the topics on the boards and add your name to the topic post-it note (please do not exceed 5 members).



#### Roles

To make it easier for you to organize your team, we have listed some roles which might be distributed among the team. This is a suggestion & is <u>not required</u> to be used.

Of course, it's still fundamental to discuss, brainstorm, and help the rest of the team, even if you use these roles.

#### Coder

Writes efficient
Qiskit code
implementing the
theory

#### Mathematician

Comes up with formulas and theories.

#### Planner

Brings everything together, plans & has an overview of the lecture

### Scientific Visualization

Makes illustrations/
animations to help
understand the idea
and the
improvements

#### Lector

Rewrites text to be easier to understand and better to follow

# Project Submission

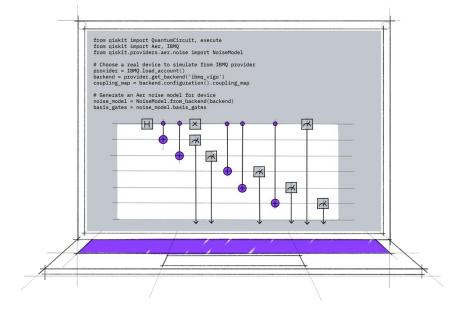


This is what you are required to submit in order to be eligible for the judging phase.

### Jupyter Notebook

To make it easy for the judges we request you to submit a single Jupyter Notebook on a GitHub page containing all the content you want to be judged.

Exact components that need to be included in the notebook will be shared at the event.



Note: Your Jupyter Notebook must use Qiskit.

Teams can do an

optional

presentation to be

eligible for a

Community Choice

Award.

Presentations will occur at 15:00 on 25 June and should be a maximum of 3 minutes/3 slides.

### Awards and Prizes



#### First Place Winning Team

1<sup>st</sup> Place Certificate 2500€ for Team Exclusive Quantum Swag

Selected by team of Judges



#### Community Choice Award

Exclusive Quantum Swag
Exclusive Stickers

Participants will choose a team based on an *optional* presentation



#### **Active Participants**

**Quantum Swag** 

To recognize your hard work in the Hackathon

# Judging Criteria



Below is the criteria our expert panel of judges will be using to select the top team.

### Originality and Uniqueness (40%)

- The idea is original and shows promise over other possible implementations.
- There are no factual errors in the material.
- How general is the idea? Can it be applied to a wide variety of states?

### Structure (30%)

- The Jupyter notebook is easy to understand.
- · The structure of the notebook makes sense.
- It would be easy to modify the code.

### Results (30%)

- You show clear improvements over a naive/simple implementation.
- Your results show improvements in theory and with noise (on the simulator).
- The results are taking real hardware into consideration.

### Resources



### The Necessities

Install these software packages before the event:

- Python 3.9 or later
- Jupyter notebook

For installing Qiskit, you can follow the instructions provided <u>here</u>.

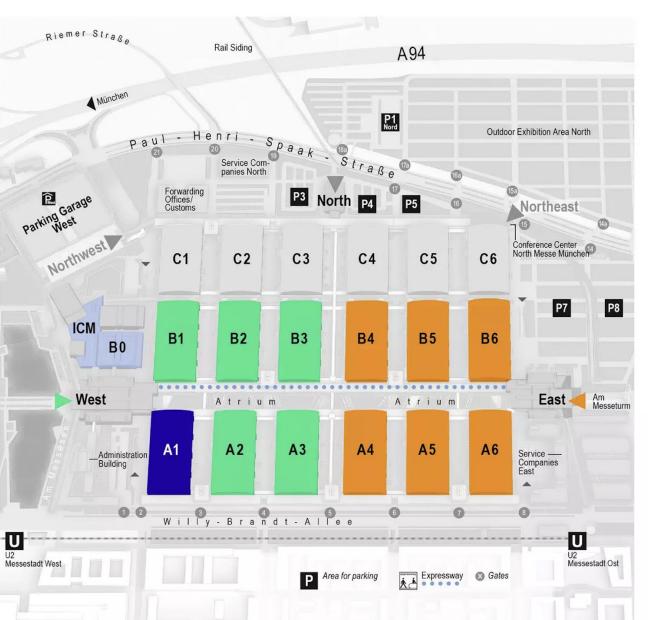
### Qiskit Resources

Top Qiskit resources for you to review:

- Qiskit
- <u>Documentation</u>
- Qiskit tutorials
- <u>Contributing to Qiskit</u> (required for code contributions!)
- API

## Map of the Venue









- Laser and optoelectronics, integrated photonics, optical information and communication
- Laser and laser systems for production engineering, sensors, test and measurement, optical measurement systems, imaging
- B1 Optics, manufacturing technology for optics
- B2 Lasers and optoelectronics, biophotonics and medical engineering
- **B3** Laser and laser systems for production engineering
- WORLD OF PHOTONICS



- Laser systems, subsystems and components for quantum technology, quantum computing and stimulation, quantum communication and cryptography, quantum sensing and quantum imaging
- automatica
- Industrial robots, drive technology, control systems technology and industrial communications, software and cloud computing, electrical engineering
- **B5** Machine vision, sensor technology, industrial robots
- Industrial robots (incl. collaborative, mobile), professional service robotics, start-ups
- Assembly and handling technology, fluid technology
- Assembly and handling technology, clamping and gripping technology, drive technology
- Machine vision, safety components, industrial robots (incl. collaborative, mobile), professional service robotics



# Stay connected!

- Join the dedicated event channel <u>#woq25-hackathon-support</u>
- Follow us on <u>LinkedIn</u>



If you have any questions, please reach **ask the mentors in-person** or **post in the** #woq25-hackathon-support Slack channel.