

2022 BEST Robotics Autonomous Programming Spring Challenge

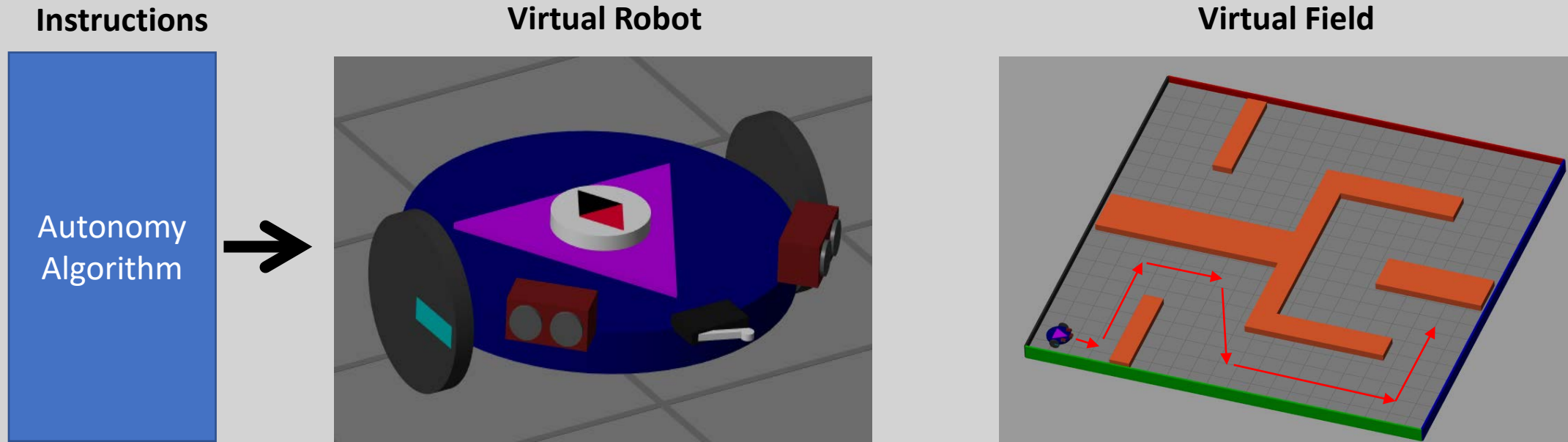
PREVIEW GUIDE



Autonomous Programming Skills Challenge

What is it?

- Create Autonomous programs to solve the game objectives
 - Responding, reacting and running independently, with no direct human control



Autonomous Programming Skills Challenge

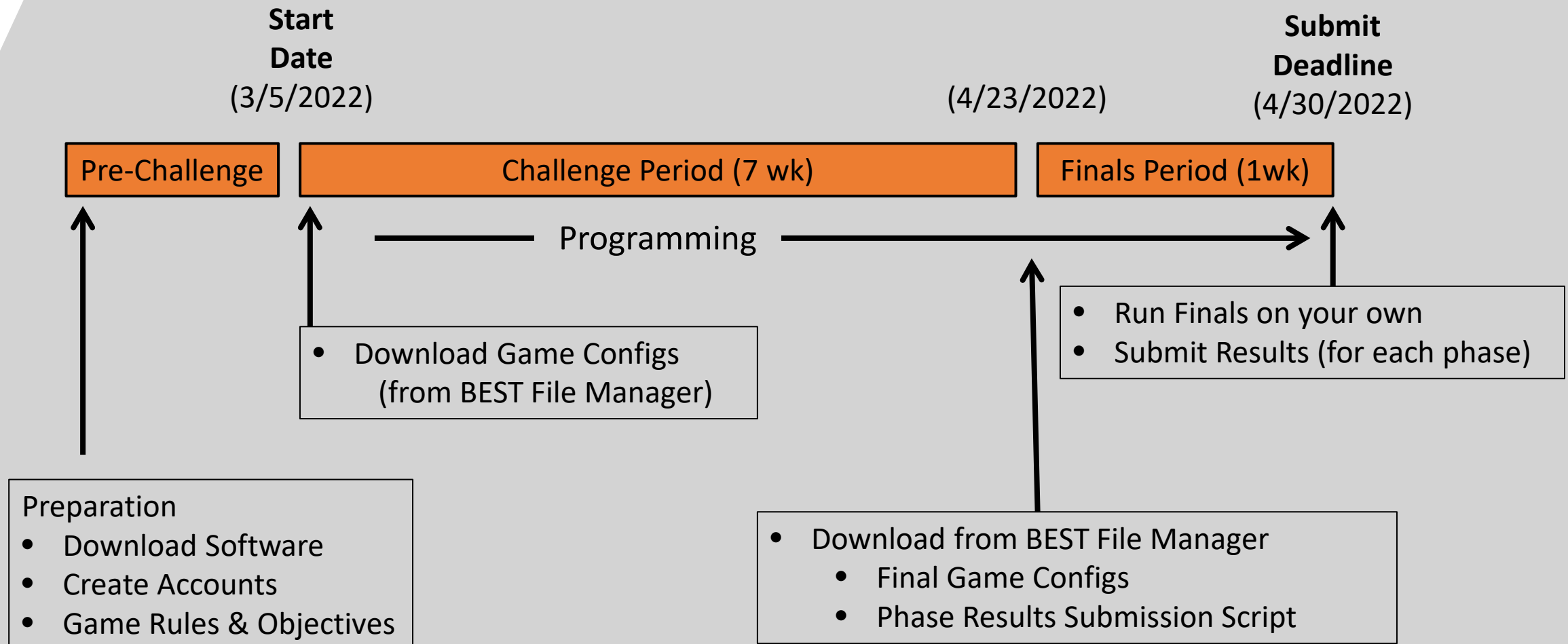
What is it?



- Uses Mathworks Robotics Playground
 - 3D Virtual Field and Virtual Robot provided
- Multiple Phases
 - Unique Objectives
 - Unique Time Constraints
- Multiple Levels of Ranking & Awards
 - Team Award (for 2021 BEST teams)
 - Individual Awards (for any participant)
- You can compete for team awards or individual awards
- Complete rules and instructions provided at the Kickoff, March 5th 2022

Autonomous Programming Challenge

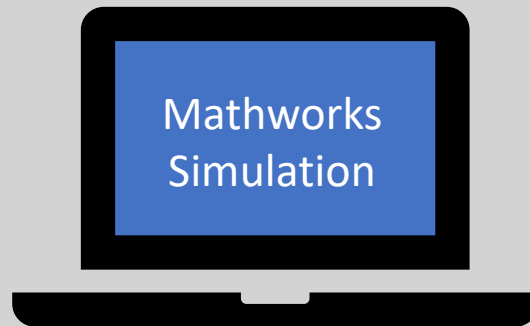
Challenge Protocol



Autonomous Programming Options

Local or Cloud Environments

OPTION 1



Student

Single Windows Computer
✓ meeting system requirements

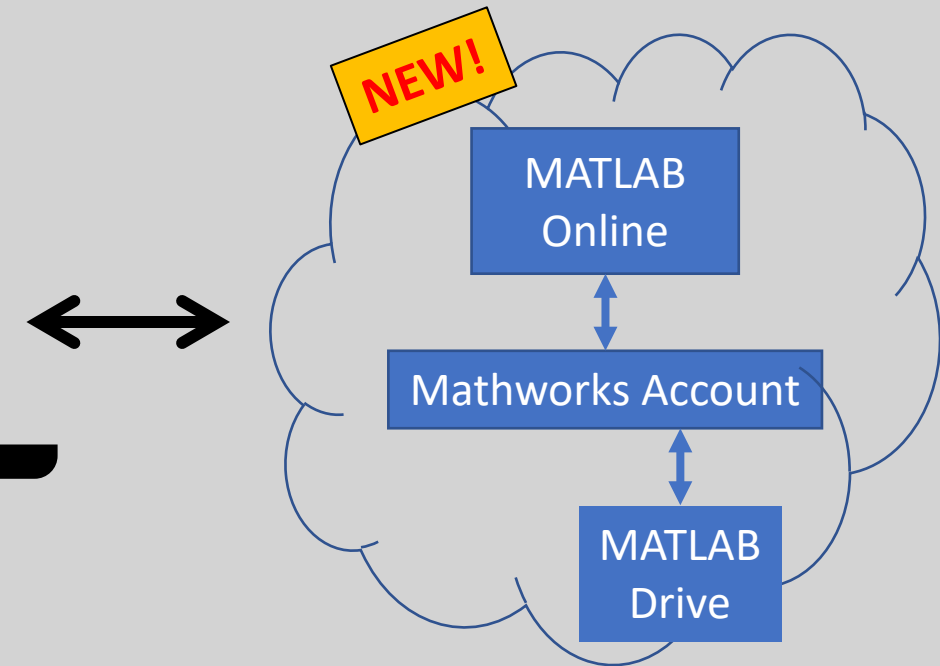
OR

OPTION 2



Student

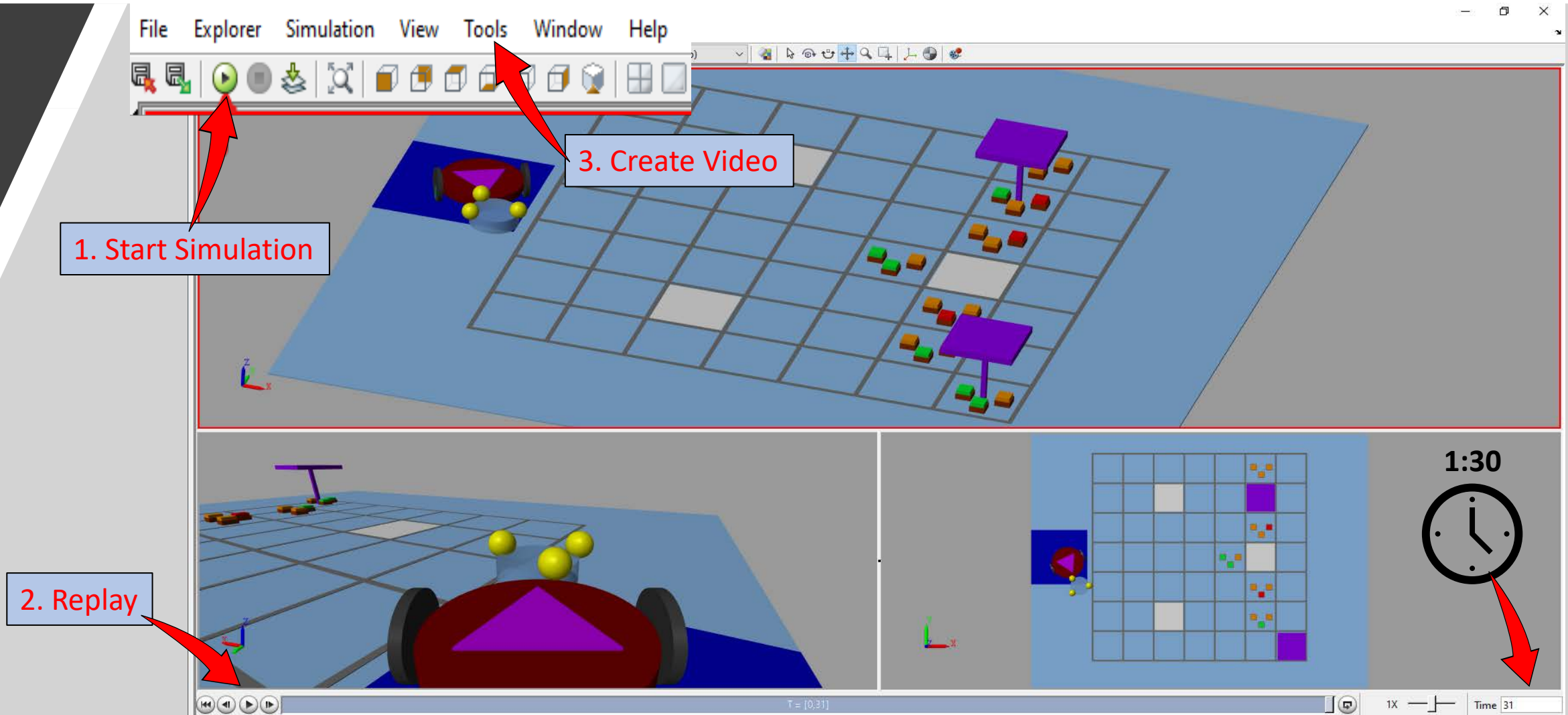
Any Computer
✓ With Internet Access



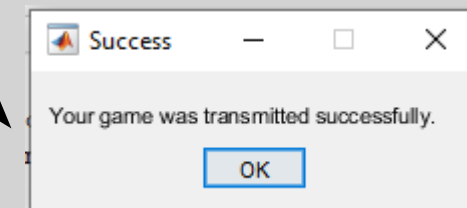
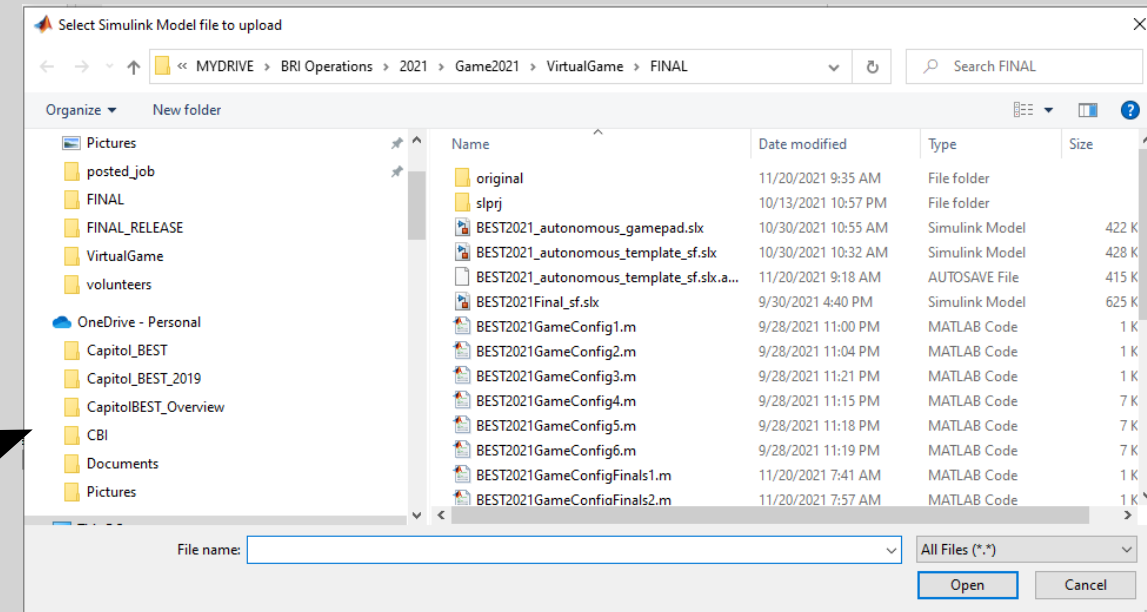
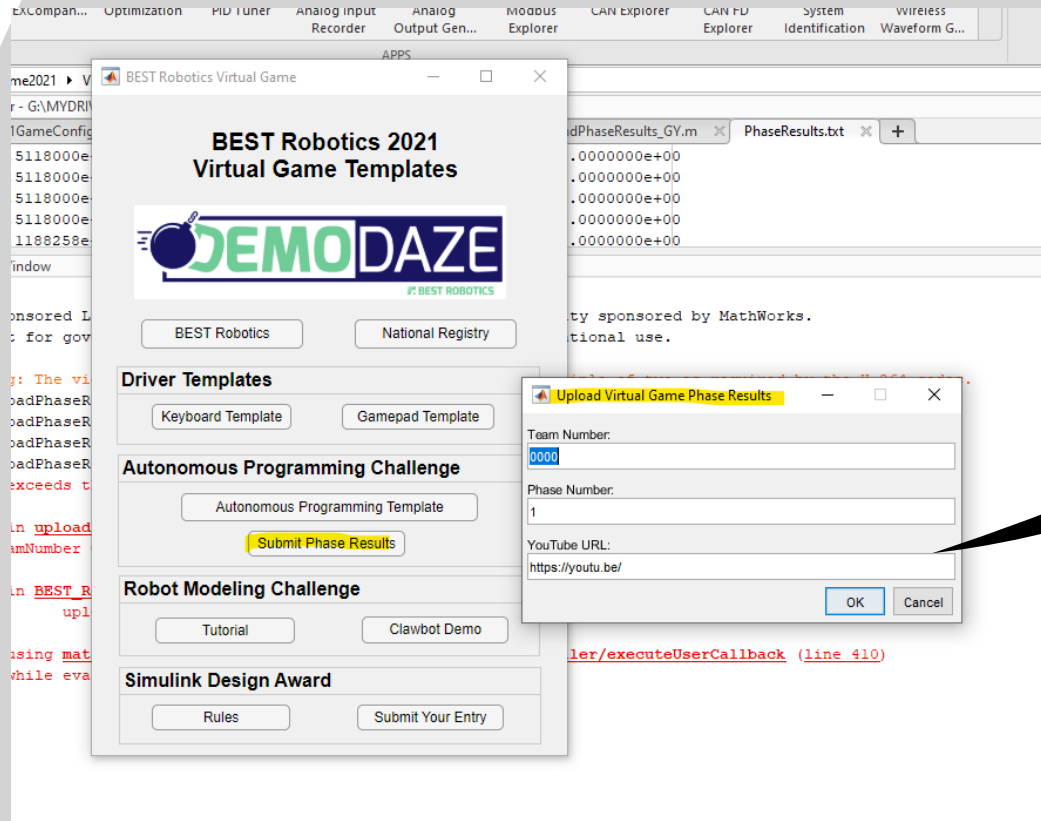
***3D Simulation is done in the cloud!
Access & run from any computer!***

Running each Phase Time Trial

Running Simulation, Creating Video



Submitting Final Results



Autonomous Programming Challenge

Summary

- 8-week programming challenge
- Autonomous Programming Only
- Local Software or MATLAB Online
- Final Game Configs available in final week (7 days for best run)
- Multiple Game Configs & Objectives to run (6 total)
- Submission deadline (results + video + slx model)
- Team ranking and awards (for 2021 BEST teams)
- Individual ranking and awards (all participants)

Autonomous Programming Challenge

RULES RELEASE



Complete Rules for each Phase
will be released on March 5, 2022

EXAMPLE

<u>Phase</u>	<u>Objectives</u>	<u>Simulation Time</u>
1	Item a	45 sec
2	Item b	60 sec
3	Items a,b	60 sec
4	Items a,b,c	120 sec
5	Items a,b,c,d	180 sec
6	All items	unlimited

Autonomous Programming Challenge

Registration

- Students REGISTER to participate at
 - <http://spring2022apc.eventbrite.com>
- I participated on a 2021 BEST team?
 - Enter your Team Number from your 2021 BEST Team
- Did not participate on a 2021 BEST team?
 - No problem, you can still participate!
- All participants will receive a participant UserID# on Kickoff day

MORE QUESTIONS?
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