CS 565 – Scientific Computing

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COMPUTER SCIENCE

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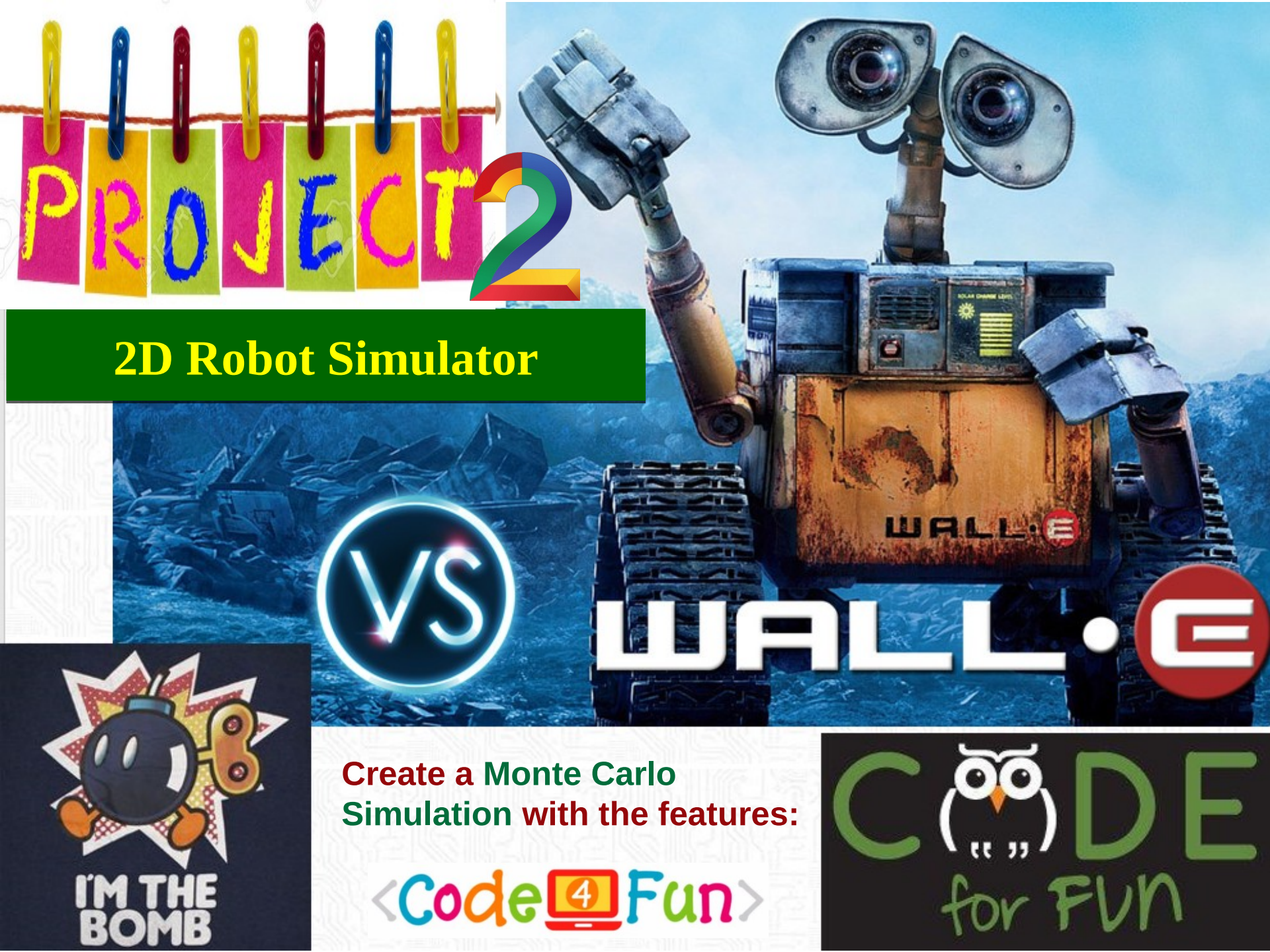
PROJECT 2
2D Robot Simulator
VS
WALL·E
I'M THE BOMB
Create a Monte Carlo Simulation with the features:
Code 4 Fun
CODE for Fun

Create a Monte Carlo Simulation

Start

API

create_world

rand_positions

run4Gold

still_gold?

Yes

No

end

gold?

No

Yes

get_gold

jump_next_square

bomb?

No

Yes

check_next_square

2D Robot Simulator

Code4Fun

2D Robot Simulator

Create a Monte Carlo Simulation

	1	2	3	4
1				
2				
3				
4				

2D Robot Simulator

Create a Monte Carlo Simulation with the features:

Make a computing model that implementats an automata system with a walking bomb and a walking robot:

1) The model should have a visualization of each event. (2 points)

2) The Robot, and the Bomb are running autonomously, accessing the board coordinates as state event control variables located inside the defined workspace. (2 points)

3) The Robot and the Bomb walking steps should be synchronized as follow: for each two steps/squares walked by the Robot, Bomb will walk one square in the grid / hash table. (2 points)

4) The Robot should walk around and avoid stepping on any square where a Bomb is randomly placed. The Bomb should not step on any GoldBar. The Robot can move one square at time; the Bomb moves one square walking around only after the Robot has moved two squares/steps in the grid / hash table. (2 points)

5) Robot should keep walking around for as long as there is still a GoldBar to be found and collected in the workspace; if the Bomb catches the Robot, or there is no GoldBar left in the workspace, then the automatas reached their goal with two possible states: <Happy Ending! Robot won> or <Kabum: Game over! Bomb killed the Robot> . (2 points)