

# PGE Tutorial: discrete event simulation within a game engine

- notice that a single polygon bounces unconvincingly along the ramps
- open up the source file `twoDsim.mod` and change `Debugging = FALSE` to `Debugging = TRUE` near the top of the file

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- now rebuild ramps2 and run it again

- ```
$ make ramps2 && ./run
```

- notice you can now see the game engine searching for the earliest collision
- now change the line 2491 to `drawCollisionFrame := FALSE`
- remake and rerun ramps2
- turn off debugging, by undoing the Debugging change

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- this time you only see the game engine searching for collisions (events)

## PGE Tutorial: discrete event simulation within a game engine

- using a pencil and paper, convince your self that the function `collideCircleAgainstFixedEdge` will yield the correct velocity vector after hitting a horizontal and vertical wall
- hint only the sign for the appropriate x and y velocity component should change
  - if it bumps into a vertical wall then the x component changes sign
  - if it bumps into a horizontal wall then the y component changes sign