

## Mario

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Project Description: For our final project, we will recreate the side-scrolling Mario Classic game for Nintendo with possibly several added functionalities.

One of the major challenges we expect will be storing and loading the graphics of the level as Mario moves. We will program this project on the FPGA using the XVGA display to host the game graphics. We will also make use of the internal-external memory to load the map and sprites to the display.

The initial goal of the project is to create a level where Mario can jump over and stomp Goombas to complete the level.

Possible Idea => Instead of using buttons to move Mario around the screen, the player will control Mario by performing them in real life with an IMU controller with at least two IMU sensors. For instance, to make Mario jump, the controller should be accelerated upward. To make Mario move in a direction, the IMU controller can be tilted in either direction.

Possible add-ons are: IMU controller

Possible idea => Mario figure just stays in one place and jumps as Goombas come towards him, FPGA controlled (Similar to Google's dinosaur run browser game)

Need:

- Mario avatar module
- Graphics module to display:

game platforms, Mario, square and Goombas