DTU Compute
Institut for Matematik og Computer Science

MarsLander

$$E_{ph}=h\frac{c}{\lambda}$$

Gravity
Acceleration
Mountainous terrain
Crystal clear night sky
Star constellation
Sensor information
Fuel platforms
.. and lots of explosions

FUEL: 070%   SPEED: X:000 Y:000   SCORE:00

GAME OVER

PLAY AGAIN PRESS Y

The mission in MarsLander is to make as many successful landings as possible on the surface of Mars with a limited amount of fuel and without crashing. When you land on an open platform, the spaceship will be refueled and a point is earned. But watch your speed! Continue visiting platforms and become the best astronaut in the Milky Way galaxy.

The diagram shown to the right is the overall hardware design of the game, and shows how the different components interacts with each other. The hardware is modelled in VHDL, while the logic of the game is implemented in C. The game runs on a FPGA Nexys 3 board with a LC3 processor directly connected to a monitor and a keyboard.

LC3 CPU

Data bus

Memory   UART   VGA controller   Keyboard controller
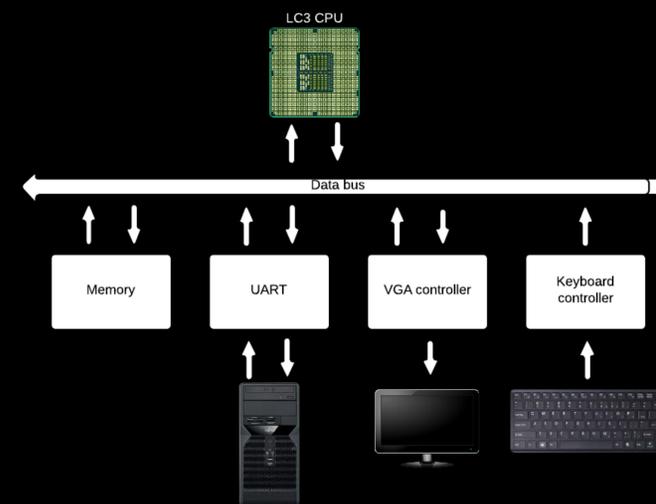
The overall goal was to build a hardware platform of a simple computer system, and embed a simple software system on the platform.

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