Space Impact (Game in Nokia 3310)

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Objective and Requirements

Purpose of this project is to develop Space Impact on a CHIPKIT board, a classic game in Nokia 3310. The game involves a spaceship which travels through space. Player has to move the spaceship up and down to avoid incoming projectiles or shoot a laserbeam to destroy the projectiles. Goal with the game is to survive as long as possible. Main requirements of the game are as follows:

- A moveable spaceship (up and down function) with the help of buttons on the ChipKIT Uno32.
- Spaceship has to have the ability to shoot laserbeams.
- Projectiles moves towards spaceship and are destroyable.
- Player has to be able to use buttons on ChipKIT Uno32 to control spaceship.

Optional features, if *time* allows:

- Pause and high score
- Faster pace with switches
- Extern hardware to control spaceship.

Solution

The game is developed on the ChipKIT Uno32 together with Basic I/o shield. LED-display on the Basic I/O shield is used for output and the buttons are as input to move the spaceship vertically and to shoot laserbeams. Optional features are implemented with the help of interrupts which triggers a pause. The player should be able to navigate through a menu and see high scores with the help of the buttons.

Advance part of the project is to use external hardware, e.g. flexcables and gloves, to control the spaceship. Exploring and learning external hardware and implementing it together with ChipKIT Uno32 and Basic I/O shield expands our knowledge outside of the course which is why we would consider it as an advanced project. We will implement this feature if time allows it.

Verification

We will verify the game throughout the project by performing tests during and after each version. Main tests consist of testing the controls the spaceship and if it is displayed on the Basic I/O shield. We will also test if projectiles are destroyable. We will construct a specification consisting of our requirements and make sure the program passes it.

Contributions

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Reflections

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