Game Control
Camera Control

- **Types**
  - First-personal view
  - Third-personal view but following the playable character
  - God view
    - Fixed
    - Following the playable character
  - Fixed view
    - Pre-rendered background
  - Pre-set view
  - ...

- Very sensitive to game play design & game control
- Camera control is not an independent system
Case Study I - Simplified Third-person View (1/6)

- Use arrow keys (or WASD keys) on keyboard or gamepad

- Basic key assignments:
  - Up key to move the playable character forward
  - Down key to turn character facing to the camera and move forward
  - Left & right keys to turn the character to left or right
The camera following the character to move
And keeping a range of distance, a reasonable height and look-down angle with the character.
Case Study I - Simplified Third-personal View (3/6)

- Detailed key assignments:
  - Up key
    - Turn the character facing back to the camera
    - Move the character forward
    - If the distance between the character and the camera is larger a pre-set range, move the camera forward to keep the distance.
    - At the same time, the height to the ground will be changed to synchronize with the character.
  - Down key
    - Turn the character facing to the camera
    - Move the character forward
    - The camera will move backward to keep a distance with the character.
    - The height to the ground will be changed to synchronize with the character.
If the camera is blocked by obstacle to move backward, raise the height of the camera but keep the eyes on the character.
Right key

- Turn the character facing to the right of the camera.
- Take the camera’s position as a circle center and the distance between the camera and the character as the radius.
- Set the circle as the movement orbit.
- Let the character move on the orbit.
- When the character moving, turn the camera to right to keep eyes on the character.
When the character hitting the obstacle, let the character keep on turning and moving, use the same approach in “Down key” step to raise the camera.

- Left key
  - As same as “Right key” step except the left direction.

Reference game examples:
- Sprinter cell 3
- PSO
- Prince of Persia (波斯王子)
- The Legend of Zelda (薩爾達傳說)
- ... 

Demo : 1st DCI students’ work : iRobot
Case Study II - First Personal Shooting (1/2)

- Use arrow keys (or WASD keys) on keyboard or gamepad for camera moving

- Basic key assignments:
  - Up key to move the playable character forward
  - Down key to move the character backward
  - Left & right keys to move the character in left or right direction
Case Study II - First Personal Shooting (2/2)

- Use mouse moving to control the camera’s orientation
  - Horizontal moving turns the camera to right or left
  - Vertical moving makes the camera to tilt
- A hierarchical structure for the FPS camera
  - Camera
    - Only performing the camera tilt
  - Camera stand
    - The parent of the camera
    - Performing the camera’s movements and turning in horizontal