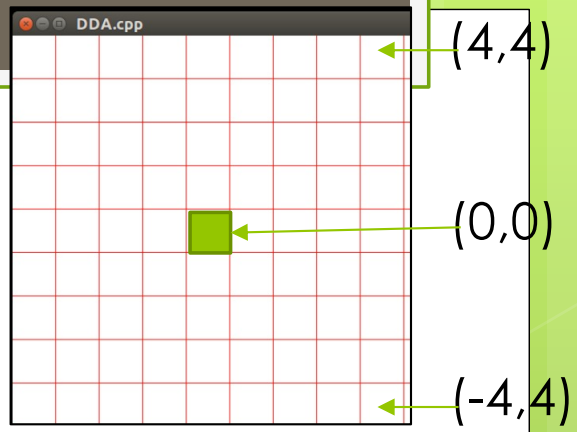
# Rasterization

2021/05/04




# Continue to use the 2D Grid

- Provide a popup menu to select from
  - (E.g. 9x9 or 25x25 or 85x85 cells ; at least 3 sizes)
  - Draw/Fill the center cell
    - It would be the origin (0,0)
- Select the two end points of a line
  - Each cell should be clickable
    - Draw the cell if you clicked on it
  - If you clicked on more than two cells:
    - Use the last two cells you selected to drawn a line

Do not use other library/tools

# Midpoint algorithm

**Task1**: The two cells (e.g, cell A and B)you selected are the end points of a line

- Once two cells are selected, use midpoint algorithm to calculate the pixels you should draw
- print out the following information:
  - The coordinates of the two endpoints A and B (the one which selected first will be the starting point. i.e. cell A)
  - Which region this case belong to? (total 8 regions)
  - The coordinate (x, y) of all the cells on the line
- Draw/fill all the cells on the grid

**Task2:** If you already have two cells selected (cell A and Cell B), and the line is drawn (line AB)

- Once you click on another cell C, you should undrawn/erase the current line AB and repeat task1 using the new pair of endpoints B and C to draw a line (line BC)

<Grading>

- Task1: Considering all regions
  - First 2 region for 30%, the rest regions total 20%
- Task2: 20%
- Submit your source code, demo videos and pdf document (10%)
  - In your demo video:
    - Screen record of using your program
  - In your pdf file:
    - Explain how you calculate all regions.
    - Put some sample results
- Deadline: 5/10 midnight