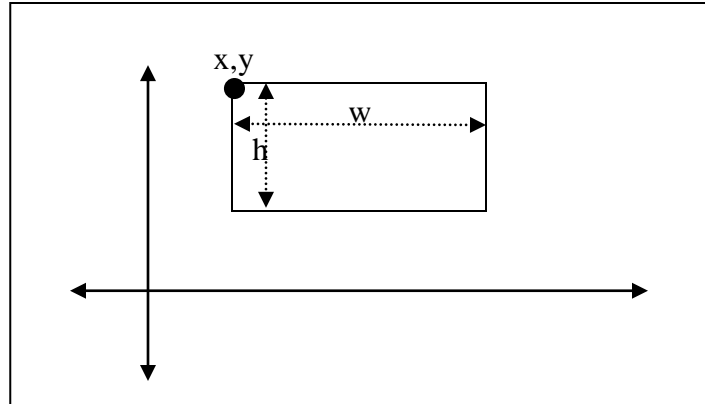


## CS 2213 Advanced Programming Recitation - Exercise

### Struct, Dynamic memory - functions

- Define a struct Rect as follows:

```
typedef struct Rect
{
    double x;
    double y;
    char color;
    double w; //width;
    double h; //height;
} RectT;
```



- Write a program that declares `RectT a, b, *recs;` and asks user to enter `x, y, w, h` of both `a` and `b`.
- Write a function `int chk_overlap(RectT *r1, RectT *r2)` which can be called to check if `a` and `b` overlap or not. If so return 1, else return 0.
- Dynamically create an array of 50 rectangles and save their address in `recs`. Then randomly initialize `x, y, w, h` of each rectangle (e.g., `recs[i].x = rand() % 20;`)
- Count/print how many of these rectangles overlap with `a` or `b`.

After implementing the program

- Run it with `valgrind` to see memory usage info  

```
> valgrind myprog
```
- Free the allocated memory then run it again with `valgrind`
- Compile your program with `-g` option and use `gdb` and `ddd`