

## Week 8 in-class exercises. Function pointers

Implement comparator functions for sorting the following arrays in a specified order:

```
typedef struct {
    int width;
    int height;
} Rectangle;

int compare_scores(const void* a, const void* b){

}

int compare_scores_desc(const void* a, const void* b){

}

int compare_areas (const void* a, const void* b){

}

int compare_strings (const void* a, const void* b) {

}
```

```

int main () {

    int scores[] = {543,323,32,554,11,3,112};

    int i;

    qsort(scores, 7, sizeof(int), compare_scores_desc);

    puts("These are the scores in descending order:");

    for (i = 0; i < 7; i++) {

        printf("Score = %i\n", scores[i]);

    }

    char *names[] = {"Karen", "Mark", "Brett", "Molly"};

    qsort(names, 4, sizeof(char*), compare_strings);

    puts("These are the names in order:");

    for (i = 0; i < 4; i++) {

        printf("%s\n", names[i]);

    }

    Rectangle rectangles [] = {{3,5}, {4,4}, {1,18}};

    qsort(rectangles, 3, sizeof(Rectangle), compare_areas);

    puts("These are the rectangles in order:");

    for (i = 0; i < 3; i++) {

        printf("width:%d height:%d area:%d\n",

            rectangles[i].width, rectangles[i].height,

            rectangles[i].width*rectangles[i].height);

    }

    return 0;

}

```