Assignment - Week 5

Note:

Jeg havde en del problemer med "commit and push" fra VSC til github, så i får afleveringen i morgen:

(1) (Text answer) (Old exam question) A function `area` calculates and returns the area of a rectangle as an integer. The input rectangle is given as four integer coordinates: `x1, x2, y1, y2`. Complete the function signature below.

```
1
2
3  _____  _____  ( _____ ) {
4
5    return (x2 - x1) * (y2 - y1);
6  }
```

```
int Area (int x1,int x2,int y1,int y2)
{
return (x2-x1)*(y2-y1);
}
```

Opgave 2:

(2) (Text answer) (Old exam question) The function `increment` takes a pointer to an integer and adds 1 to the integer value to which it pints. The function does not return any value. Complete the function signature and function body below, so that the main function prints 6 when executed.

```
1
2
3  _____  _____  ( _____ ) {
4
5
6    _____;
7  }
8
9  int main () {
10    int v = 5;
11    increment(&v);
12    printf("%d", v);
13    return 0;
14 }
```

```c
#include <stdio.h>

void increment (int *v){
    *v = 6;
}

int main (void)
{
int v = 5;
increment (&v);
printf("%d",v)
return 0;
}
```

Opgave 3:

(3) (Text answer) Consider the following code. At the end of the function, what are the values for $x, y, *xp, *yp$? Using pen and paper, draw a diagram (like in the lectures) to explain your answer. Your submission must include your diagram. The following diagram formats are allowed: PDF, JPG and PNG.

```c
#include <stdio.h>

int main(void)
{
   int x;
   int y;

   int *xp;
   int *yp;

   x = 5;
   y = x;

   xp = &x;
   yp = &y;

   x = 10;

   /* What are values of: x,y,*xp,*yp */

   printf("x=%d, y=%d, *xp=%d, *yp=%d\n", x,y,*xp,*yp);

   return 0;
}
```
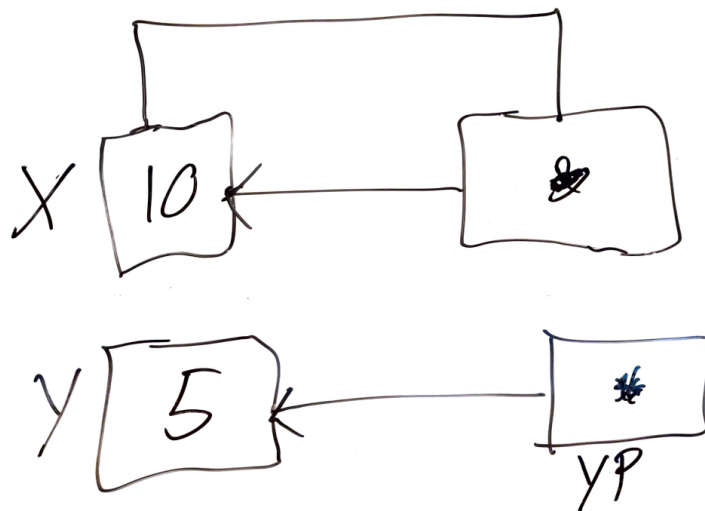
Svar:

X = 10
Y = 5
XP = 10
YP = 5

X [10]

Y [5]

YP

XP = &X
YP = &Y

(4) (Text answer) Consider the following code. At the end of the function, what are the values for $x, y, *xp, *yp$? Using pen and paper, draw a diagram (like in the lectures) to explain your answer. Remember to include your diagram (in PDF, JPG or PNG format) in your submission.

```c
#include <stdio.h>

int main(void)
{
    int x;
    int y;

    int *xp;
    int *yp;

    x = 5;
```

```
    xp = &x;

    x = 10;

    y = *xp;

    yp = &y;

    *xp = 0;

    /* What are values of: x,y,*xp,*yp */

    printf("x=%d, y=%d, *xp=%d, *yp=%d\n", x,y,*xp,*yp);

    return 0;
}
```
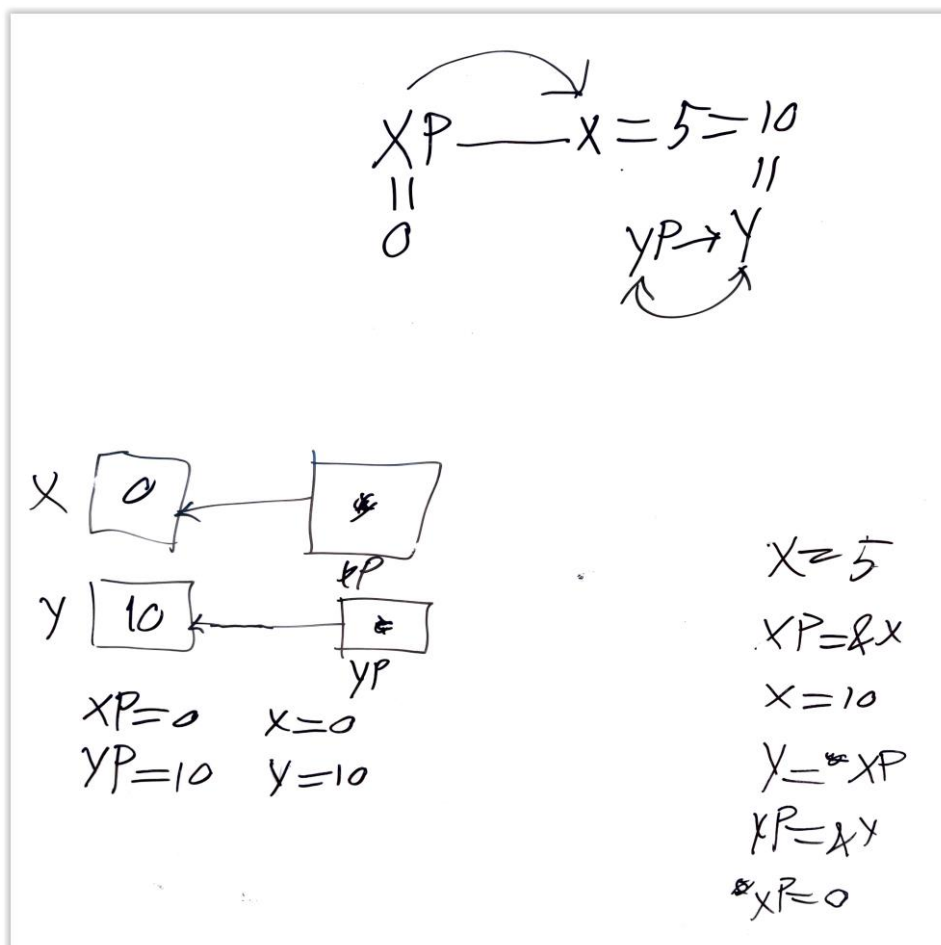
Svar:

Opgave 5:

(5) (Text answer) Once again, consider the following code. At the end of the function, what are the values for $x, y, *xp, *yp$? Using pen and paper, draw a diagram (like in the lectures) to explain your answer. Remember to include your diagram (in PDF, JPG or PNG format) in your submission.

```c
#include <stdio.h>

int main(void)
{
    int x;
    int y;

    int *p1;
    int *p2;

    x = 5;
    y = 10;

    p1 = &x;
    p2 = p1;

    *p2 = y;

    p1 = &x;

    /* What are values of: x,y,*xp,*yp */
```