Assignment - Week 5

https://github.com/Aarhus-University-ECE/assignment-5-EN99-bit

(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 }
```

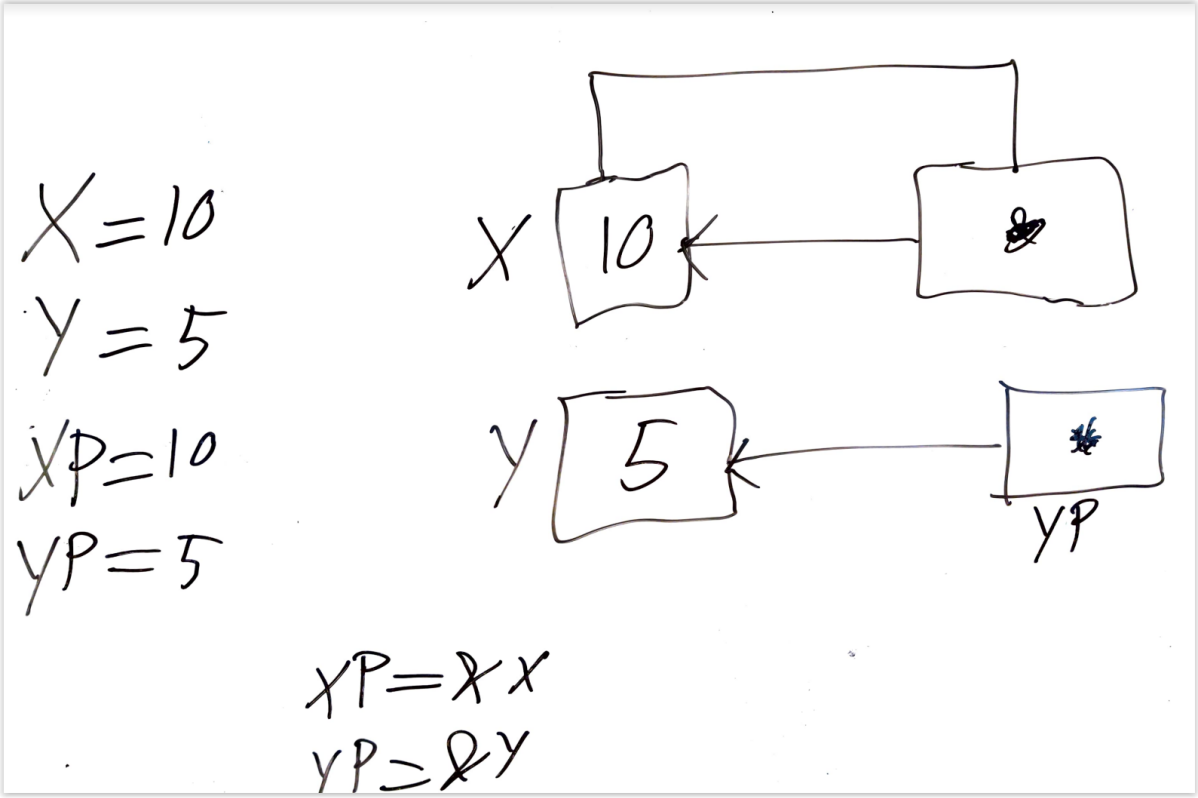
```c
#include <stdio.h>

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.

```
#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:



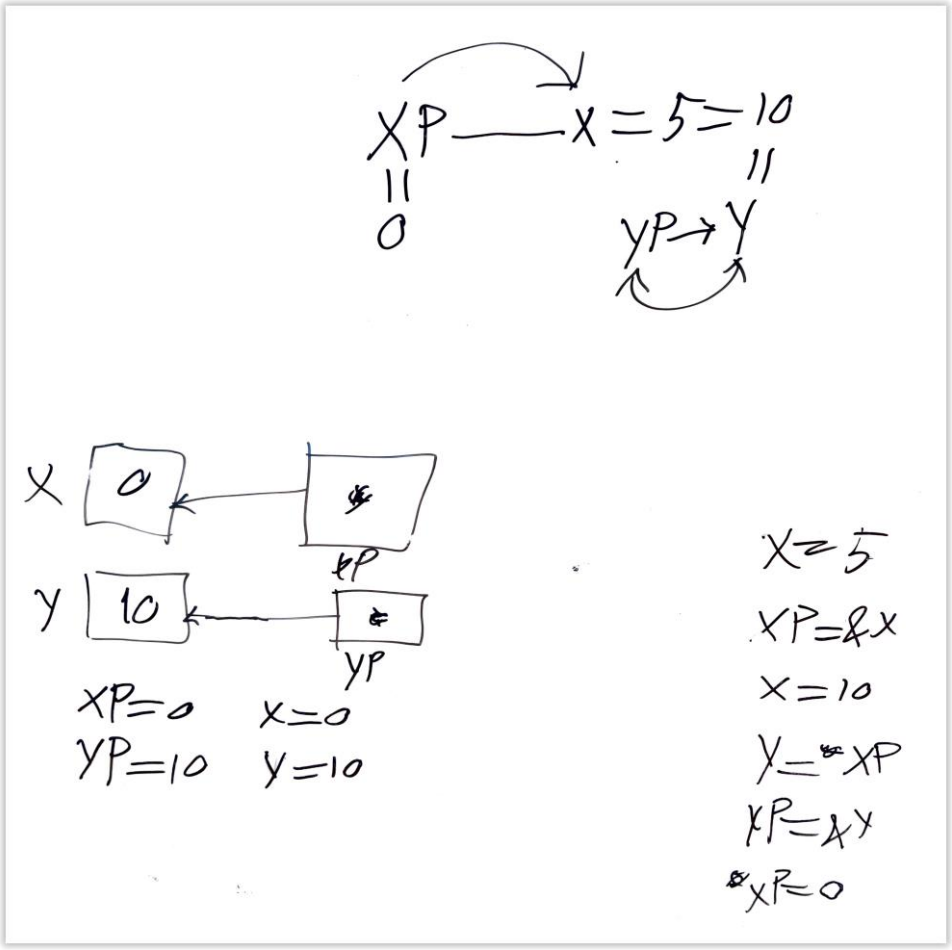
Opgave 4:

(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.

```
#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;
}
```

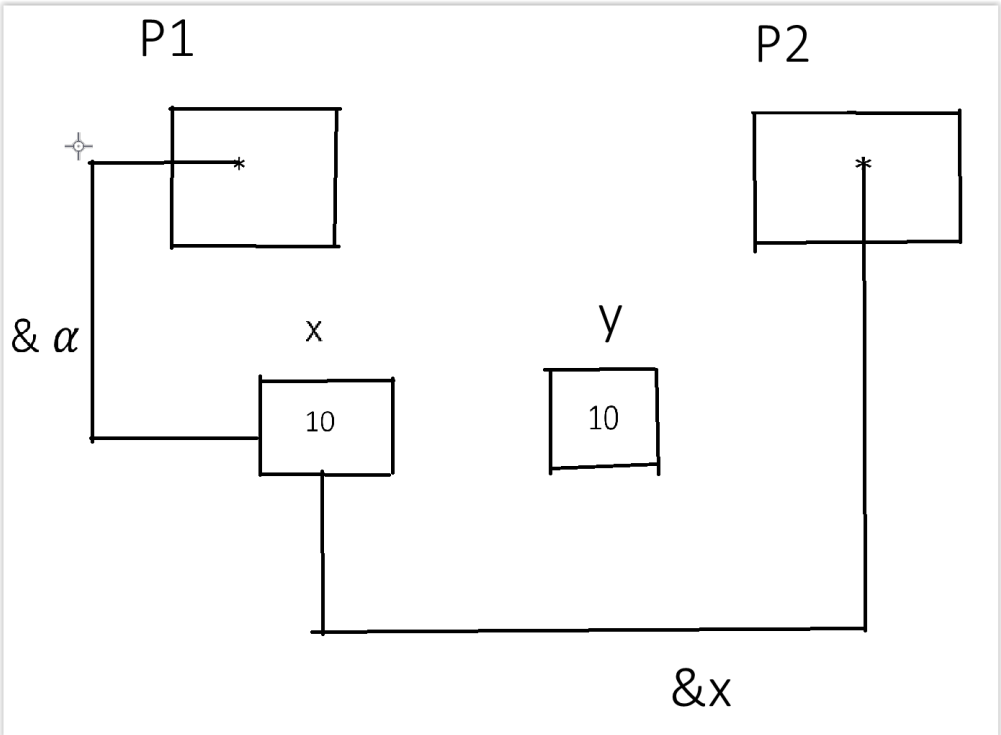
Svar:



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.

```
#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 */
```



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