Lab exercise 3

1. What's the output of the following program?

```
#include <stdio.h>
int main (void)
{
int values[10];
int index;
values[0] = 197;
values[2] = -100;
values[5] = 350;
values[3] = values[0] + values[5];
values[9] = values[5] / 10;
--values[2];
for ( index = 0; index < 10; ++index )
    printf ("values[%i] = %i\n", index,values[index]);
return 0;
}
```

Modify this program, so that the elements of the array values are initially set to 0. Use a for loop to perform the initialization.

2. Write a program that calculates the average of an array of 10 floating point values.

3. What output do you expect from the following program?

```
#include <stdio.h>
int main (void)
{
int numbers[10] = { 1, 0, 0, 0, 0, 0, 0, 0, 0, 0 };
int i, j;
for ( j = 0; j < 10; ++j )
      for ( i = 0; i < j; ++i )
            numbers[j] += numbers[i];
for ( j = 0; j < 10; ++j )
      printf ("%i ", numbers[j]);
printf ("\n");
return 0;
}
```

4. You don't need to use an array to generate Fibonacci numbers. You can simply use three variables: two to store the previous two Fibonacci numbers and one to store the current one. Rewrite Program (slides page 11) so that arrays are not used. Because you'

re no longer using an array, you need to display each Fibonacci number as you generate it.