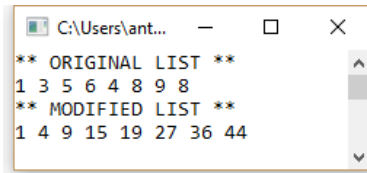# I2204 - INFO 216
Imperative Programming
Lab Exam
Group I #1

Full name: _____ **File number:** _____

Check the website 192.168.0.1 Use the following username: `info` *and password* `info`. *Open folder* `Student` *then open folder* `i2204 Group1 English`.

You should code your answer in the file named `i2204-1.c` *contained in the supplementary folder* `i2204#1`.

Rename the file `i2204-1.c` *as follows:* `XXXXX.c`, *where* `XXXXX` *designate your file number.*

Put the renamed file under the `d:` *directory in a new folder named* `i2204`.

You should write on this sheet only the required function, not the whole solution.

Modify a given simply linked list in such a way that each node contains the sum of the data up to and including the current node.


```
** ORIGINAL LIST **
1 3 5 6 4 8 9 8
** MODIFIED LIST **
1 4 9 15 19 27 36 44
```

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Imperative Programming
Lab Exam
Group I #2

Full name: _____   **File number:** _____

> *Check the website 192.168.0.1 Use the following username: `info` and password `info`. Open folder `Student` then open folder `i2204 Group1 English`.*
>
> *You should code your answer in the file named `i2204-2.c` contained in the supplementary folder `i2204#2`.*
>
> *Rename the file `i2204-2.c` as follows: `XXXXX.c`, where `XXXXX` designate your file number.*
>
> *Put the renamed file under the `d:` directory in a new folder named `i2204`.*
>
> *You should write on this sheet only the required function, not the whole solution.*

Given an non-negative integer, create a simply linked list of integers between 0 and 9 representing the integer. (0 is represented by an empty list.)
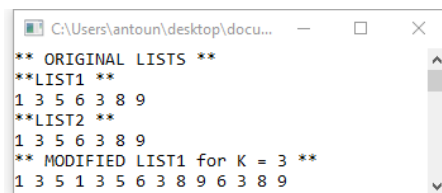


```
The number 145560494 is represented by the following list:
1 4 5 5 6 0 4 9 4
```

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Group I #3

Full name: _____ **File number:** _____

Write a function splice where the result is a list with the same items as the two input lists with the items from the second input inserted after the k-th node of the first, where k is another input. Ignore the case where $k \leq 0$. If $k \geq n$, (where n is the length of the first list), the items of the second list appear after the first. If either list is empty, the result is (a copy of) the other list.
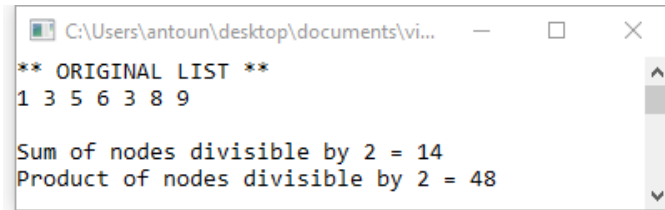
```
C:\Users\antoun\desktop\docu...   —   □   ×

** ORIGINAL LISTS **
**LIST1 **
1 3 5 6 3 8 9
**LIST2 **
1 3 5 6 3 8 9
** MODIFIED LIST1 for K = 3 **
1 3 5 1 3 5 6 3 8 9 6 3 8 9
```

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Group I #4

Full name: _____ **File number:** _____

Check the website 192.168.0.1 Use the following username: info and password info. Open folder Student then open folder i2204 Group1 English.

You should code your answer in the file named i2204-4.c contained in the supplementary folder i2204#4.

Rename the file i2204-4.c as follows: XXXXX.c, where XXXXX designate your file number.

Put the renamed file under the d: directory in a new folder named i2204.

You should write on this sheet only the required function, not the whole solution.

Given a circular linked list, write a function that calculates the sum and the product of the nodes which are divisible by a number k.
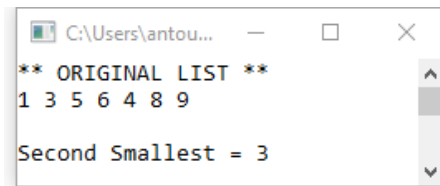


```
** ORIGINAL LIST **
1 3 5 6 3 8 9

Sum of nodes divisible by 2 = 14
Product of nodes divisible by 2 = 48
```

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Imperative Programming
Lab Exam
Group I #5

Full name: _____ **File number:** _____

Check the website 192.168.0.1 Use the following username: **info** *and password* **info**. *Open folder* **Student** *then open folder* **i2204 Group1 English**.

You should code your answer in the file named **i2204-5.c** *contained in the supplementary folder* **i2204#5**.

Rename the file **i2204-5.c** *as follows:* **XXXXX.c**, *where* **XXXXX** *designate your file number.*

Put the renamed file under the **d:** *directory in a new folder named* **i2204**.

You should write on this sheet only the required function, not the whole solution.

Given a linked list of integer. The task is to write a function that efficiently finds the second smallest element present in the linked list.

```
C:\Users\antou...   —   □   ×

** ORIGINAL LIST **
1 3 5 6 4 8 9

Second Smallest = 3
```