Course: ENSF 337 - Fall 2020

Lab #: 2

Instructor: M. Moussavi

Student Name: Alexander Sembrat (30089188)

Lab Section: B01

Submission Date: September 28th 2020

ENSF 337

Lab 2 Part A

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Point 1

Stack

AR
MAIN

Sam	?	9880
fred	9892	9884
bar	100	9888
foo	200	9892

No Args

Point 2

Stack

AR
MAIN

Sam	9888	9880
fred	9892	9884
bar	130	9888
foo	160	9892

No Args

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Point 3

AR
MAIN

Stack

Sam	9888	9880
fred	9888	9884
bar	135	9888
foo	160	9892

No Args

Point 4

AR
MAIN

Stack

Sam	9892	9880
fred	9888	9884
bar	135	9888
foo	135	9892

No Args

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Point 5

AR
MAIN

Stack

Sam	9888	9880
fred	9888	9884
bar	135	9888
foo	13500	9892

No Args

Part B2:

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LAB 2 PART B2

Stack

AR
bar

| No Local |
| a ▱ |
| b ▱ |

AR
quux

| n [503] |
| P ▱ |
| q ▱ |

AR
MAIN

| x [500] |
| y [604] |
| No Args |
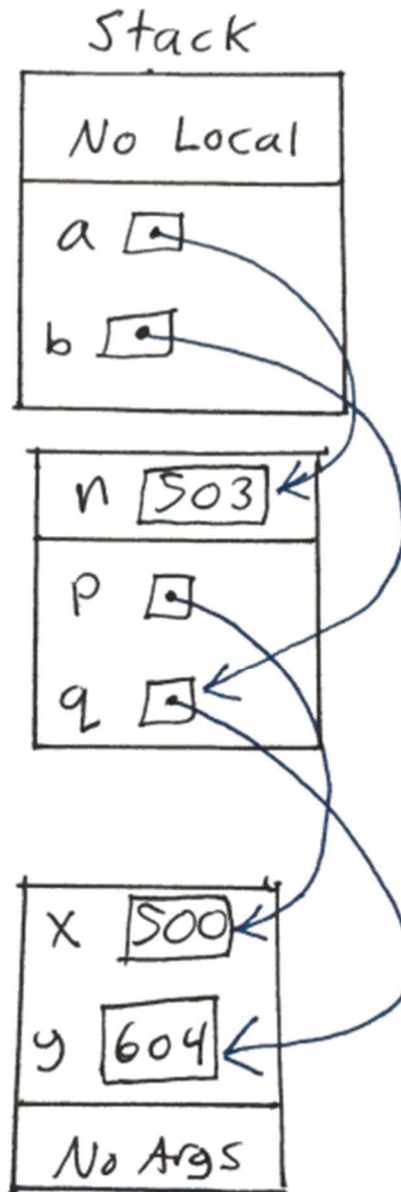
Part C:

```c
/*
 *  File Name: lab2exe_C.c
 *  Assignment: Lab 2 Exercise C
 *  Lab Section: B01
 *  Completed by: Alexander Sembrat (30089188)
 *  Submission Date: Sept 28th 2020
 */

#include <stdio.h>
#include <stdlib.h>

void time_convert(int ms_time, int *minutes_ptr, double *seconds_ptr);
/*
 * Converts time in milliseconds to time in minutes and seconds.
 * For example, converts 123400 ms to 2 minutes and 3.4 seconds.
 * REQUIRES
 *     ms_time >= 0.
 *     minutes_ptr and seconds_ptr point to variables.
 * PROMISES
 *     0 <= *seconds_ptr & *seconds_ptr < 60.0
 *     *minutes_ptr minutes + *seconds_ptr seconds is equivalent to
 *     ms_time ms.
 */

int main(void)
{
  int millisec;
  int minutes;
  double seconds;
  int nscan;

  printf("Enter a time interval as an integer number of milliseconds: ");
  nscan = scanf("%d", &millisec);

  if (nscan != 1) {
    printf("Unable to convert your input to an int.\n");
    exit(1);
  }

  printf("Doing conversion for input of %d ms ... \n", millisec);

  /* MAKE A CALL TO time_convert HERE. */

  time_convert(millisec, &minutes, &seconds);

  printf("That is equivalent to %d minute(s) and %f second(s).\n", minutes, seconds);

  return 0;
}
```

```c
50
51    void time_convert(int ms_time, int *minutes_ptr, double *seconds_ptr)
52    {
53        if(ms_time>0)
54        {
55            *minutes_ptr = ms_time / 60000;
56            double temp = ms_time - (*minutes_ptr * 60000);
57            *seconds_ptr = temp/1000;
58        }
59        else
60        {
61            printf("Invalid Number of Miliseconds Entered");
62            exit(1);
63        }
64    }
65
```

```
Alexander@Alexander-PC /cygdrive/c/Users/Alexander/Documents/UCalgary/F2020/ENSF
337/lab2
$ gcc -Wall lab2exe_c.c

Alexander@Alexander-PC /cygdrive/c/Users/Alexander/Documents/UCalgary/F2020/ENSF337/lab2
$ ./a.exe
Enter a time interval as an integer number of milliseconds: -6
Doing conversion for input of -6 ms ...
Invalid Number of Miliseconds Entered
Alexander@Alexander-PC /cygdrive/c/Users/Alexander/Documents/UCalgary/F2020/ENSF337/lab2
$ ./a.exe
Enter a time interval as an integer number of milliseconds: 65500
Doing conversion for input of 65500 ms ...
That is equivalent to 1 minute(s) and 5.500000 second(s).
```

Part D2:

ENSF 331
Lab 2 Part D2

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Run #	Inputs		n	i	d
1	12	0.56	2	12	0.56
2	5.12	9.56	2	5	0.12
3	12	ab	1	12	1234.5
4	ab	12	0	333	1234.5
5	5ab	9.56	1	5	1234.5
6	13	67	2	13	67.0

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Lab 2 Part F

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Point 1

Stack

AR
MAIN

Sum [0]

x. [0][0][0][0]

y [2.3][1.2][2.0][4.0]

No Args

Point 2

Stack

AR
Try_to_Copy

No Local

dest [•] — 8 bytes

Source [•] — 8 bytes

AR
MAIN

Sum [0] — 8 bytes

x [0][0][0][0] — 32 bytes

y [2.3][1.2][2.0][4.0] — 32 bytes

No Args
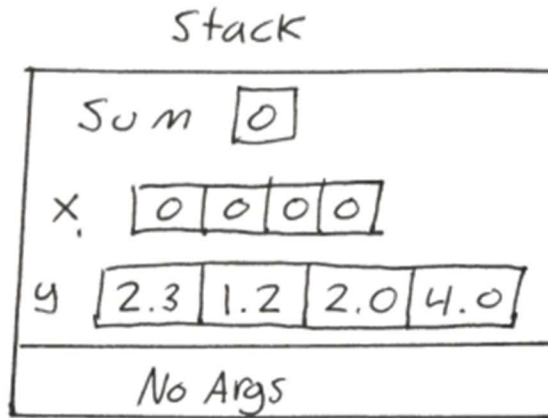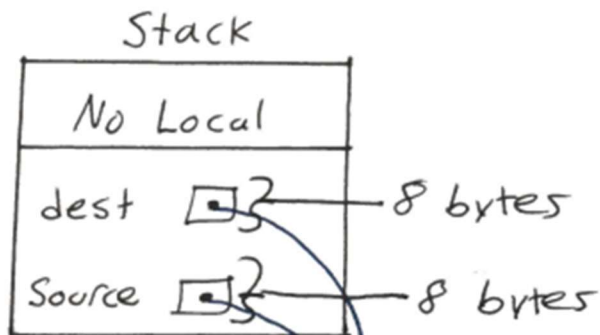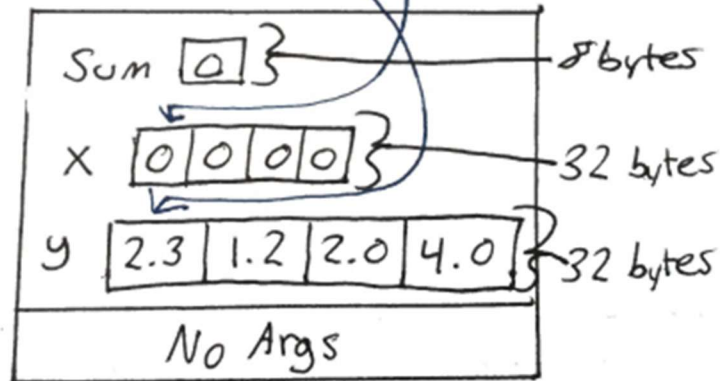
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Point 3

Stack

AR
try_to_change

| No Local |
| dest ▫ |

AR
MAIN

Sum 0

X | 0 | 0 | 0 | 49.0 |

y | 2.3 | 1.2 | 2.0 | 4.0 |

No Args

Point 4

Stack

AR
add_them

| No local |
| arg ▫ |

AR
MAIN

Sum 0

X | 0 | 0 | 0 | 49.0 |

y | 2.3 | -8.25 | 2.0 | 4.0 |

No Args