ENSF 337 Tutorial 2 – Tuesday Sept 26 2018

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Problem I: Draw AR diagrams when function double_trouble reaches point one for the **first time** and then for **the second** time (2 separate diagrams).

```
#include <stdio.h>
void double_trouble(int *p, int y);
void trouble(int *x, int *y);

int main(void){
  int x , y ;
  int *q = &x ;
  trouble(q, &y);
  return 0;
}

void double_trouble(int *p, int y){
  int x;
  x = 15;
  *p = 2 *x -y;
  // point one
}

void trouble (int *x, int *y){
  double_trouble(x, 5);
  double_trouble(y, *x);
}
```

Problem II: Write a function that matches the following function interface comment:

```
 char* clean(char *s, int c);
/* REQUIRES: s points to the beginning of a string. c contains a character code.
 * PROMISES: to remove all occurrences of c in s and returns the result
 * EXAMPLE USES:
 * char s[] = "banana";
 * clean(s, 'b') should return anana.
 */
```

Problem III: Write the definition of function `str_to_num` as indicated in the following function interface comment. You are not allowed to use any C Library function.

```
int str_to_num (const char *s);
/* REQUIRES: s is pointing to a built-in string that terminates with '\0'.
 * Characters in s must be all digits
 * PROMISES: returns an integer value equivalent to the string of digit.
 * EXAMPLE:
 *   if s [0]== '8', s[1] == 5, s[2] == 3, and s[4] == '\0', the return value must be 853.
 */
```

Problem IV: Write the definition of the following function. You are not allowed to use any C Library function.

```
int first_occurance(const char* str, const char ch);
/* REQUIRES: str pointing to a built-in string terminated with '\0'
 * PROMISES: returns -1 if ch doesn't exist in str. Otherwise, returns the position
 * of the first occurrence of ch in str.
 */
```