CptS 122 – Data Structures
January 15, 2018

Your Name: _____ TA's Name: _____
ID#: _____ Section #: _____

Take Home: Quiz 1 (15 pts) - Review of C Language Concepts

1. (5 pts) Write/Implement a function definition for a function `my_strcpy()` with the following header:

```
char *my_strcpy (char *destination, const char *source)
```

```c
char *my_strcpy (char *destination, const char *source) {
  // Get size of src string (w/ '\0')
  int size = 1;
  while (source[size - 1] != '\0')
    size ++;
  // Allocate memory for destionation
  destination = malloc(sizeof(char) * size);
  // Assign value to destination
  for (int i = 0; i < size; i ++)
    destination[i] = source[i];
  return destination;
}
```

2. (5 pts) Write/Implement a function definition for a function `my_strncat()` with the following header:

```
char *my_strncat (char *destination, const char *source, int n)
```

```c
char *my_strncat (char *destination, const char *source, int n) {
  // Get size of src string (w\o '\0')
  int size = 1;
  while (destination[size] != '\0')
    size ++;
  // Create new string (+1 for space of '\0')
  char *newString = malloc(sizeof(char) * (size + n + 1));
  // Copy destination to newstring
  for (int i = 0; i < size; i ++)
    newString[i] = destination[i];
  // Copy source to newstring
  for (int i = size; i < (size + n); i ++) {
    newString[i] = *source;
    // If encounter a NULL in source, break the loop
    if (*source == '\0')
      break;
    else
      source ++;
  }
  // Add '\0' at the end;
  newString[size + n] = '\0';
  return (newString);
}
```

3. (5 pts) Write/Implement a function definition for a function `my_strcmp()` with the following header:

```
int my_strcmp (const char *s1, const char *s2)
```

```c
int my_strcmp (const char *s1, const char *s2) {
  do {
    if (*s1 < *s2)
      return -1;
    else if (*s1 > *s2)
      return 1;
  } while (*s1 ++ == *s2 ++);
  return 0;
}
```