CSSE 132 – Introduction to Systems Programming
Rose-Hulman Institute of Technology

Worksheet 24 Pass Pointers for Output

Name (Print):_____ RHIT Username:_____

1. Complete the code below by filling in the blanks.

```c
#include <stdio.h>
void swap(int* a, int* b, int c) {
  int temp;
  temp = ____;
  ____ = ____;
  ____ = temp;
  c = 0;
}
void main() {
  int a = 10, b = 20, c = 30;
  printf("a = %d, b = %d, c = %d\n", a, b, c);
  // This prints a = 10, b = 20, c = 30
  swap(&a, &b, c);
  printf("a = %d, b = %d, c = %d\n", a, b, c);
  // This prints a = __, b = __, c = __
}
```

2. Complete the code below by filling in the blanks. Read the `main` function to understand the requirements of the function `createArray`.

```c
#include <stdio.h>
void createArray(_______ arr, _______ len) {
  int my_len = 5; // hard-coded
  ______ = my_len;
  ______ = malloc(_______ * sizeof(int));
  for(int i = 0; i < my_len; i++)
    _________ = _________;
}
void main() {
  int* array;
  int length = 100;
  createArray(_________, _________);
  for(int i = 0; i < length; i++)
     printf("%d ", array[i]);
  //The program will print 0 2 4 6 8
}
```

3. Complete the code below by filling in the blanks. Read the `main` function to understand the requirements of the function `createStudentArray`.

```
#include <stdio.h>
struct student{
  char name[10];
  int id;
};
void createStudentArray(____________ arr, int len) {
  ________ = malloc(len * ________________);
  for(int i = 0; i < my_len; i++){
     memcpy(________________, "student", __________);
     _________________ = i;
  }
}
void main() {
  ________________ array; // declare the variable
  int length = 3;
  createStudentArray(&array, length);
  for(int i = 0; i < length; i++)
     printf("%d: %s\n", array[i].id, array[i].name);
  // The program will print
  // 0: student
  // 1: student
  // 2: student
}
```

4. **Reflection:** What is one thing from this topic that you found interesting, OR what is one question you are now curious to learn more about?