Week 8 in-class exercises. Memory leaks

1. Explain what is wrong with the following code, and show how you would fix the problem

```
int* killer() {
      int temp;
      return(&temp);
}

void victim() {
      int* ptr;
      ptr = killer();
      *ptr = 42;
}
```

2. When would this code cause memory trespassing and how would you fix it?

```
void update_previous (char * str, int pos, char new_char){
   int len = strlen (str);
   if (pos <=len)
        str [pos -1] = new_char;
 }
```

3. Can you detect a memory leak in the following code? How would you fix it (hint: *realloc*)?
```
typedef struct person {
     char * name ;
     struct person * next;
}Person;

Person * create_person (char *name) {
   p = malloc (sizeof (Person));
   p->name = malloc (strlen (name)+1);
   strcpy (p->name, name);
}

void change_name (Person *p, char *new_name) {
   p->name = malloc (strlen (new_name)+1);
   strcpy (p->name, new_name);
}
```