PaperMan

Cepstrum Initiative

Visit us at:
http://www.iitg.ac.in/scifac/cep/public_html

Exam 1

R. Inkulu
http://www.iitg.ac.in/rinkulu/

Write a function $func$ that takes two parameters, a pointer p that points to a constant string and an integer *copystart*: the function need to copy the substring from *copystart* location of the string pointed by p till the end of the same to another memory region. Further write a test function that invokes $func$ and prints the contents of the copied string.

- You are allowed to traverse the contents of the string pointed by p only once.
- Time vs space: assume that every byte of memory is precious (do not use memory unless it is essential).
- Assume that the string pointed by p has at least '*copystart*' number of locations.
- If necessary, you may use printf, scanf, malloc, calloc, realloc, and/or free functions and the sizeof operator; but invoking no other library function is permitted.
- Only ANSI C is allowed.

a solution

```
char *func(const char *p, int copystart) {
   char *q = malloc(1*sizeof(char));
   int buflen = 0;
   p += copystart;

   while (*p != '\0') {
      q = realloc(q, (++buflen)*sizeof(char));
      *(q+buflen-1) = *p++;
   }
   *(q+buflen) = '\0';

   return q;
}
```

homework: make the code more robust

a solution (cont)

```
void testfunc(void)
{
   char *q = func("Terrance Tao is the greatest
    mathematician of our time", 4);
   printf("%s \n", q);
   free(q);
   return;
}
```