Name:…… Q10

CS2123 Data Structures

Complete the three files below to develop a library called magic, then use it in a driver program.

- Library interface (magic.h) exports a new type `magicElement` based on `int` for application, an abstract data type called `magicADT` , and three functions: `magicADT NewMagic(); void FreeMagic(magicADT m);` and `void MagicIncrement(magicADT m);`
- Library implementation (magic.c) gives the underlying concrete structure/record which contains two `magicElement` fields and one double field. Also magic.c gives the implementation for `NewMagic(),` which dynamically allocates memory for the `magicADT,` sets all of its fields to zero and returns its address to the caller; `FreeMagic(magicADT m)` frees the memory; and `void MagicIncrement(magicADT m)` which inrements both `magicElement` fields by 1.

```
/****** magic.h ******/
```

```
/****** magic.c ******/
#include <stdlib.h>
#include <stdio.h>
#include "magic.h"
```

```
/****** driver.c ******/
#include <stdlib.h>
#include <stdio.h>
#include "magic.h"
```