# Objects and Arrays Lab

1) Given the following class:

```
class Item {
  float price;
  Item(float price) {
    this.price = price;
  }
  float getPrice() {return price};
}
```

a) Create an array `things` to hold 50 `Item` and fill it with `Item` objects with a price between 5 and 100.

b) Write code to find the index of `things` that holds the `Item` object with the highest price and store it in a variable called `idxMostExpensive`.

c) Add a method `void sale (float pct)` to the `Item` class, which will lower the value of `price` by `pct`. For example, `sale(0.2)` will change the value of `price` to `price`*0.8, i.e. a 20% off sale. You can assume that `pct` is between 0 and 1.

d) Write code to perform a 30% sale on every 5th element in `things`.

2) Creat a `Student` class with the following instance variables (types in parens): `name`(`String`), `id`(`int`) and `GPA`(`float`).
   a) Write the appropriate constructor to initialize the instance variables.
   b) Write a method `isPassing` which returns true if `GPA` is above 2.0 and false otherwise.
   c) Write a function `int numPassed(Student[] students)` that loops through the array `students` and returns the number of students who passed.
   d) Write a function `int searchID(Student[] students, int id)` that loops through the array `students` and returns the index of the `Student` object that matches the given `id`.

   Note that c) and d) are not `Student` class methods, but regular functions that are intended to take an array of `Student` (as designed by you) as a parameter. You do not need to worry about how that array is created/initialized or passed in as argument. You can simply assume that it will be passed in correctly when your function is called.