

PHP

Question #3

```
function findNumber(Array $arr, $x)
{
    // check if the array is empty
    if (count($arr) === 0) return -1;
    $low = 0;
    $high = count($arr) - 1;

    while ($low <= $high) {

        // get middle index
        $mid = floor(($low + $high) / 2);

        // element found at mid
        if($arr[$mid] == $x) {
            return -1;
        }

        if ($x < $arr[$mid]) {
            // search the left side of the array
            $high = $mid -1;
        }
        else {
            // search the right side of the array
            $low = $mid + 1;
        }
    }

    // If we reach here element x does not exist
    return -1;
}
```

Question #2

It will give me a php fatal error: we cannot declare class main\Debug because the name is already in use.

MySQL

1. These are the tables that we must create :

- users (id, user_firstname, user_lastname)
- skills (id, skill_name, skill_level, skill_usage, skill_last_used)
- users_skills (id, user_id, skill_id, user_skill_last_modified, user_skill_date_created, user_skill_endorsed)

2. select

```
users.user_firstname,  
users.user_lastname,  
skills.skill_name  
FROM users_skills  
JOIN users ON users_skills.user_id = users.id  
JOIN skills ON users_skills.skill_id = skills.id  
where users_skills.user_id=1 limit 10  
( i considered that we are fetching data only for this user "user_id=1", if not remove  
"where users_skills.user_id=1")
```

3. Query:

- a. Select c.* from companies as c, users as u, jobs as j where u.companyid=c.id and j.jobid=123.
- b. Select c.* from companies as c,jobs as j where c.id in (select companyid from users where id=j.userid) and j.jobid=123
- c. Select c.* from companies as c join users as u using(companyid) join jobs as j using(userid) where j.jobid=123;