Solutions:

1.

```
window.onload = function() {
      document.getElementById("add").onclick = add;

}

function add() {
      var el = document.createElement("div");
      el.innerHTML = document.getElementById("input").value;
      el.onmouseenter = color;
      el.onmouseleave = uncolor;
      el.onclick = del;
      document.getElementById("game").appendChild(el);
}

function color() {
      this.style.backgroundColor = "cyan";
      this.style.fontSize =
            parseInt(window.getComputedStyle(this).fontSize) + 5 + "px";
}

function uncolor() {
      this.style.backgroundColor = "white";
      this.style.fontSize =
            parseInt(window.getComputedStyle(this).fontSize) - 5 + "px";
}

function del() {
      this.parentNode.removeChild(this);
}
```

2.
```php
<?php
    $start = $_GET["start"];
    $end = $_GET["end"];

    $file = file("classes.txt");

    $classCount = 0;
    $classes = array();
    for($i = 0; $i < count($file); $i++) {
        #CSE154 1:30 2:30 250 250 Web Programming
        $split = split(" ", $file[$i], 6);

        if($split[1] == $start && $split[2] == $end) {
            $classCount++;
            if($split[3] < $split[4]) {
                $class = array("code" => $split[0],
                                "spaces" => ($split[4]-$split[3]),
                                "name" => $split[5]);
                $classes[] = $class;
            }
        }
    }
    $all = array("count" => $classCount, "classes" =>$classes);

    header("Content-type: application/json");
    print(json_encode($all));
?>
```

3.

```javascript
window.onload = function() {
      document.getElementById("search").onclick = search;
}

function search() {
      document.getElementById("count").innerHTML = "";
      document.getElementById("results").innerHTML = "";
      var start = document.getElementById("start").value;
      var end = document.getElementById("end").value;
      var request = new XMLHttpRequest();
      request.onload = processData;
      request.open("GET", "classes.php?start=" + start +
                                    "&end=" + end, true);
      request.send();
}

function processData() {
      var data = JSON.parse(this.responseText);
      for(var i = 0; i < data.classes.length; i++) {
            var item = document.createElement("li");
            item.innerHTML = data.classes[i].name + " - " +
                                    data.classes[i].spaces + " spaces"
            document.getElementById("results").appendChild(item);
      }
      document.getElementById("count").innerHTML = data.count +
                                    " total classes offered";
}
```

4.
a) /^#[A-Fa-f0-9]{6}$/

b) /^5[1-5][0-9]{14}$/

c) /^([1-9]|10|11|12):[0-5][0-9] (A|P)M$/

5.
```sql
SELECT DISTINCT r1.role
FROM roles r1
JOIN movies m1 ON m1.id = r1.movie_id
JOIN roles r2 ON r1.role = r2.role
JOIN movies m2 ON m2.id = r2.movie_id
WHERE r1.movie_id <> r2.movie_id
AND m1.name LIKE 'Pirates of the Caribbean%'
AND m2.name LIKE 'Pirates of the Caribbean%'
ORDER BY r1.role;
```