# Sheet 4
# Java Script BOM & DOM Objects

**Objectives:** On successful completion of this sheet, students should be able to

1. Deal with arrays of objects in JavaScript.
2. Deal with BOM & DOM-objects in JavaScript.
3. Make form-data validation.

Q1) Write a JavaScript program which has two buttons:

- Changes the text of all the "h1" headers in an HTML file to be "New Header after Change".
- Count the number of paragraphs in the current document.

Q2) Write a JavaScript program that looks like the following figure:



When clicking on the "insert" button, the data entered into the three inputs are used to create a new object from type "Student" and pushed into a global array, then a confirmation message appears:



If the user chooses "Ok" all the data at the three inputs are erased to let the user enter the values of a new student, but if he chooses "Cancel" then the "insert" button disappears.

When clicking on the "show" button, all the data pushed into the array are displayed into the text-area; each student in a new line, as shown below:

ID: [_____] Nmae: [_____] Program: [____▼] [show]

```
ID:1 Nmae: aaa Program: CS
ID:2 Nmae: bbb Program: CS-Math
ID:3 Nmae: ggg Program: CS
ID:4 Nmae: rrr Program: CS
ID:4 Nmae: zzz Program: CS-Stat
```

Q3) Rewrite the above program so that when clicking on "show" the results appear into a table.

Q4) Design the following HTML form, then do the following validations on the entered data:

- First name, Family name and department should be non-empty
- Salary should be:
  - Non-empty
  - Number
  - Between 3000 and 50000
- Age should be:
  - Non-empty
  - Number
  - Between 18 and 70
- Mobile should be:
  - Non-empty
  - Number
  - Of length 11 exactly
  - The first 3 numbers must be either:
    - 010, 011, 012, or 015

**Employee Data**

First Name [_____]
Family name [_____]
Department [_____]
Salary [_____]
Age [_____]
Mobile [_____]
[Signup]

Display an error message suitable to the non-valid entered data, such as:

**Employee Data**

First Name [abc]
Family name [____]
Department [____]
Salary [100]
Age [77]
Mobile [0123]
[Signup]

This page says

No Family Name was entered.
No Department was entered.
Salary must be between 3000 and 50000.
Age must be between 18 and 70.
Mobile number must be exactly 11 digits.

[OK]

**Employee Data**

First Name [abc]
Family name [efg]
Department [xyz]
Salary [10000]
Age [tw]
Mobile [01357913579]
[Signup]

This page says

No Age was entered.
Mobile number must start with either: 010, 011, 012, or 015

[OK]