



Experiment 1.1

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Semester: 6

Subject Name: Project based learning in Java with Lab

Subject Code: 21CSH-319

1. Aim:

Create an application to save the employee information using arrays.

2. Objective:

Create an application to save the employee information using arrays.

3. Script and Output:

```
package unit1;
import java.util.*;
public class Main {
    public static void main(String[] args) {
        int empno[] = {1001,1002,1003,1004,1005,1006,1007};
        String name[] =
{"Ashish","Sushma","Rahul","Chahat","Ranjan","Suman","Tanmay"};
        String JoinDate[] =
{"01/04/2009","23/08/2012","12/11/2008","29/01/2013",
"16/07/2005","1/1/2000","12/06/2006" };
        char d_code [] = {'e','c','k','r','m','e','c'};
        String dept[] =
{"R&D","PM","Acct","front","Desk","Engg","Manufacturing","PM"};
        int basic [] = {20000,30000,10000,12000,50000,23000,29000};
        int hra [] = {8000,12000,8000,6000,20000,9000,12000};
        int it [] = {3000,9000,1000,2000,20000,4400,10000};

        String designation = null; int da=0;
```



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```
int salary = 0;
int index = -1;

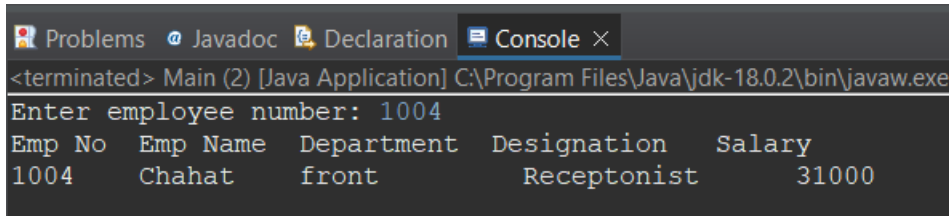
System.out.print("Enter employee number: ");
Scanner sc = new Scanner(System.in);
int emp= sc.nextInt();

for(int i=0;i<empno.length;i++){
    if (empno[i]==emp){
        index=i;
    }
}
if (index==--1){
    System.out.println("There is no such employee." +emp);
} else {
    char code; code=d_code[index];
    switch(code){
        case 'e':
            designation="Engineer"; da=20000;
            break;
        case 'c':
            designation="Consultant"; da=32000;
            break;
        case 'k':
            designation="Clerk"; da=12000;
            break;
        case 'r':
            designation="Receptionist"; da=15000;
            break;
        case 'm':
            designation="Manager"; da=40000;
            break;
        default:
            designation="Invalid"; da=0;
    }

    salary=basic[index]+ hra[index]+da-it[index];

    System.out.println("Emp No"    "+"    "+"Emp Name"  "+"    "+"Department"+"
    "+"Designation"+"    "+"Salary");
}
```

```
        System.out.println(empno[index]+"    "+name[index]+"    "+dept[index]
+"        "+designation +"        "+salary);
    }
}
}
```



```
<terminated> Main (2) [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe
Enter employee number: 1004
Emp No   Emp Name   Department   Designation   Salary
1004     Chahat     front       Receptionist   31000
```

4. Optimized code:

```
import java.util.Scanner;
import java.io.File;
import java.io.FileNotFoundException;
import java.util.HashMap;
import java.util.Map;

class Employee {
    String id, name, dateOfJoining;
    char dept;
    int basic, hra, it;

    public Employee(String id, String name, String dateOfJoining, char
dept, int basic, int hra, int it) {
        this.id = id;
        this.name = name;
        this.dateOfJoining = dateOfJoining;
        this.dept = dept;
        this.basic = basic;
        this.hra = hra;
        this.it = it;
    }
}

class Department {
    char dept;
    String designation;
```



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```
int da;

public Department(char dept, String designation, int da) {
    this.dept = dept;
    this.designation = designation;
    this.da = da;
}

}

public class EMS {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        HashMap<String, Employee> mpp = new HashMap<>();
        HashMap<Character, Department> deptInfo = new HashMap<>();
        int choice = 0;

        Scanner fr = null;
        try {
            fr = new Scanner(new File("data.csv"));
        } catch (FileNotFoundException e) {
            e.printStackTrace();
        }
        while (fr.hasNext()) {
            String id, name, dateOfJoining;
            char dept;
            int basic, hra, it;

            String line = fr.nextLine();
            String[] content = line.split(",");
            id = content[0];
            name = content[1];
            dateOfJoining = content[2];
            dept = content[3].charAt(0);
            basic = Integer.parseInt(content[4]);
            hra = Integer.parseInt(content[5]);
            it = Integer.parseInt(content[6]);

            mpp.put(id, new Employee(id, name, dateOfJoining, dept, basic,
hra, it));
        }
    }
}
```

```
try {
    fr = new Scanner(new File("dept.csv"));
} catch (FileNotFoundException e) {
    e.printStackTrace();
}
while (fr.hasNext()) {
    char dept;
    String designation;
    int da;

    String line = fr.nextLine();
    String[] content = line.split(",");
    dept = content[0].charAt(0);
    designation = content[1];
    da = Integer.parseInt(content[2]);

    deptInfo.put(dept, new Department(dept, designation, da));
}
fr.close();

do {
    System.out.println("Menu: ");
    System.out.println("1. Add an employee");
    System.out.println("2. Display employee info");
    System.out.println("3. Exit");
    System.out.println("Enter your choice: ");

    choice = sc.nextInt();

    switch (choice) {

        case 1:
            addEmployee(mpp, sc);
            break;
        case 2:
            displayInfo(mpp, deptInfo, sc);
            break;
        case 3:
            System.out.println("Exiting the program. Bye Bye...");
            break;
    }
}
```

👉👉");



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```
                break;
            default:
                System.out.println("Invalid Input.. 😞😞");

        }
    } while (choice != 3);

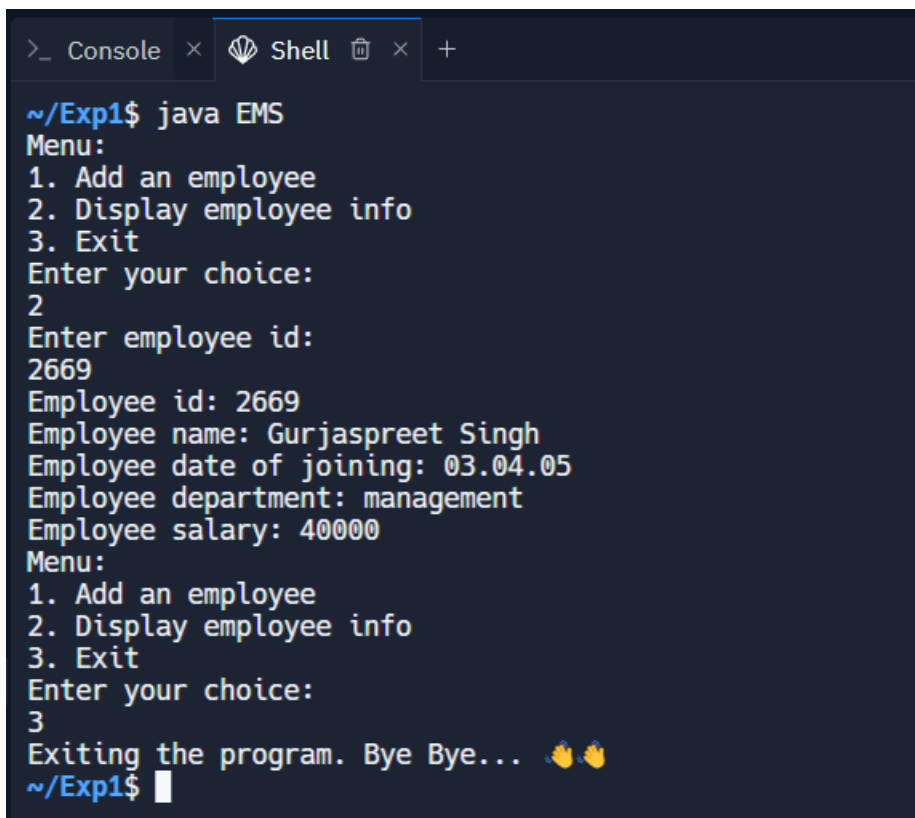
    sc.close();
}

static void addEmployee(HashMap<String, Employee> mpp, Scanner sc) {
    String id, name, dateOfJoining;
    char dept;
    int basic, hra, it;
    System.out.println("Enter employee id: ");
    id = sc.next();
    sc.nextLine();
    System.out.println("Enter employee's name: ");
    name = sc.nextLine();
    System.out.println("Enter Date of joining: ");
    dateOfJoining = sc.next();
    sc.nextLine();
    System.out.println("Enter dept: ");
    dept = sc.nextLine().charAt(0);
    System.out.println("Enter basic salary: ");
    basic = sc.nextInt();
    System.out.println("Enter hra: ");
    hra = sc.nextInt();
    System.out.println("Enter it: ");
    it = sc.nextInt();

    mpp.put(id, new Employee(id, name, dateOfJoining, dept, basic,
hra, it));
}

static void displayInfo(HashMap<String, Employee> mpp,
HashMap<Character, Department> deptInfo, Scanner sc) {
    System.out.println("Enter employee id: ");
    String key = sc.next();
    if (mpp.containsKey(key)) {
        Employee temp = mpp.get(key);
```

```
        System.out.println("Employee id: " + temp.id);
        System.out.println("Employee name: " + temp.name);
        System.out.println("Employee date of joining: " +
temp.dateOfJoining);
        System.out.println("Employee department: " +
deptInfo.get(temp.dept).designation);
        System.out.println("Employee salary: " + (temp.basic +
temp.hra + temp.it + deptInfo.get(temp.dept).da));
    } else {
        System.out.println("Employee not found");
    }
}
}
```



```
>_ Console x Shell x +
~/Exp1$ java EMS
Menu:
1. Add an employee
2. Display employee info
3. Exit
Enter your choice:
2
Enter employee id:
2669
Employee id: 2669
Employee name: Gurjaspreet Singh
Employee date of joining: 03.04.05
Employee department: management
Employee salary: 40000
Menu:
1. Add an employee
2. Display employee info
3. Exit
Enter your choice:
3
Exiting the program. Bye Bye... 🙌🙌
~/Exp1$
```