

اور ان میں سے جس کو بہکا سکے اپنی آواز سے بہکا تارہ۔ اور ان پر اپنے سواروں اور پیاروں کو چڑھا کر لاتارہ اور ان کے مال اور اولاد میں شریک ہوتا رہ اور ان سے وعدے کرتارہ۔ اور شیطان جو وعدے ان سے کرتا ہے سب دھوکا ہے۔ الاسراء - بنی اسرائیل ۶۳

(مسند احمد: جلد سوم: حدیث نمبر ۱۶۸۹) حضرت ابن عمر رضی اللہ عنہما سے مروی ہے کہ جناب رسول اللہ صلی اللہ علیہ وسلم نے ارشاد فرمایا تین آدمی جنت میں داخل ہوں گے اور نہ ہی قیامت کے دن اللہ ان پر نظر کرم فرمائے گا، والدین کا نافرمان، مردوں کی مشابہت اختیار کرنے والی عورت اور دیوث (وہ شخص جس کی ماں بہن بیٹی بے حیائی کا ارتکاب کریں اور اسے غیرت نہ آئے)

**Task 1:** Write function *isExist* to search and return true/ false whether element exist in array or not?

Test your function by writing main method, expected output is given on right hand side?

```
PSVM(String args[]){
    int a[]={23,36,45,11,18,19,34,26,25,39,42};
    System.out.println(isExist(a,34));
    System.out.println(isExist(a,37));
    System.out.println(isExist(a,44));
    System.out.println(isExist(a,45));
}
```

**Output:**

true  
false  
false  
true

**Task 2:** Write function *indexOf* to search and return index if element found otherwise -1?

Test your function by writing main method, expected output is given on right hand side?

```
PSVM(String args[]){
    int a[]={23,36,45,11,18,19,34,26,25,39,42};
    System.out.println(indexOf(a,34));
    System.out.println(indexOf(a,37));
    System.out.println(indexOf(a,44));
    System.out.println(indexOf(a,45));
}
```

**Output:**

6  
-1  
-1  
2

**Task 3:** Write function *shiftRight* to shift larger values on right side?

Test your function by writing main method, expected output given on right hand side?

```
PSVM(String args[]){
    int a[]={23,36,45,11,18};
    shiftRight(a);
    //function to print values in single row given in lecture notes
    printRowWise(a);
    shiftRight(a);
    printRowWise(a);
}
```

**Output:**

23 36 11 18 45  
23 11 18 36 45

**Task 4:** Use *shiftRight* function created in task 3 to write function *bubbleSort*?

**Task 5:** Write function *shuffle* to shuffle array values randomly *n* times. The simple idea is to run a loop *n* times and select 2 array indexes at random and swap their values? At the end test your method by writing main given:

```
PSVM(String args[]){
    int a[]={1,2,3,4,5,6,7,8,9,10};
    shuffle(a,5);
    printRowWise(a);
    shuffle(a,7);
    printRowWise(a);
}
```

Hope you are not exhaust yet only one task remaining! InshaAllah you finish that also with help of Allah

**Task 6:** [parallel arrays] Write functions to handle team score, main is given for your help:

- **public static void printScoreCard(String names[], int scores[])** to print score card as shown below

- **public static void sort(String names[], int scores[])** to sort score wise, idea is simple compare by score and swap both scores and names, two temporary variables required. One for score and other for name

```
public static void main(String args[]){
    ?ln("World Cup Final 1999 Pakistan vs. Australia, Australia won by 8 wickets");
    ?ln("(with 179 balls remaining)");
    ?ln("Pakistan Score Card");
    String players[]={ "Saeed Anwar", "Wajahatullah", "Abdul Razzaq", "Ijaz Ahmed",
        "Inzamam-ul-Haq", "Moin Khan", "Shahid Afridi", "Azhar Mahmood",
        "Wasim Akram*", "Saqlain Mushtaq", "Shoaib Akhtar"};
    int scores[]={15,1,17,22,15,6,13,8,8,0,2};
    printScoreCard(players, scores);
    sort(players, scores);
    ?ln("Sort by Scores:");
    printScoreCard(players, scores);
}
}
```

**Output:**

World Cup Final 1999 Pakistan vs. Australia, Australia won by 8 wickets (with 179 balls remaining)

Score Card

| Name            | Score |
|-----------------|-------|
| Saeed Anwar     | 15    |
| Wajahatullah    | 1     |
| Abdul Razzaq    | 17    |
| Ijaz Ahmed      | 22    |
| Inzamam-ul-Haq  | 15    |
| Moin Khan       | 6     |
| Shahid Afridi   | 13    |
| Azhar Mahmood   | 8     |
| Wasim Akram*    | 8     |
| Saqlain Mushtaq | 0     |
| Shoaib Akhtar   | 2     |

Sort by Scores:

| Name            | Score |
|-----------------|-------|
| Ijaz Ahmed      | 22    |
| Abdul Razzaq    | 17    |
| Saeed Anwar     | 15    |
| Inzamam-ul-Haq  | 15    |
| Shahid Afridi   | 13    |
| Azhar Mahmood   | 8     |
| Wasim Akram*    | 8     |
| Moin Khan       | 6     |
| Shoaib Akhtar   | 2     |
| Wajahatullah    | 1     |
| Saqlain Mushtaq | 0     |

**For further practice wait for homework to be sent soon InshahAllah!**