

کہہ دو کہ اگر آخرت کا گھر اور لوگوں (یعنی مسلمانوں) کے لیے نہیں اور خدا کے نزدیک تمہارے ہی لیے مخصوص ہے تو اگر سچے ہو تو موت کی آرزو تو کرو۔

### البقرة آیت ۹۴

A man should look for what is, and not for what he thinks should be. Albert Einstein

## Solution Homework 04

### [If, Nested If]

#### Task 1:

Write a program to input number from user (1-5). Print respective English word like One, Two, Three, Four and Five. Show error message if output is out of range?

```
System.out.print("Enter number (1-5):");
n=in.nextInt();
if (n==1)
    System.out.println("One");
else if (n==2)
    System.out.println("Two");
else if (n==3)
    System.out.println("Three");
else if (n==4)
    System.out.println("Four");
else if (n==5)
    System.out.println("Five");
else
    System.out.println("Number is Out of Range");
```

#### Task 2:

Write a program to input full name from user. Check if user has given space or not to separate first and last name. If user has not given space show error message?

```
String name;
System.out.print("Enter full name:");
name=in.nextLine();
int index=name.indexOf(' ');
if (index==-1)
    System.out.println("Error: Give Spaces");
else
    System.out.println("Valid Name");
```

#### Task 3:

Write a program to generate 3 random numbers n1, n2 and n3 in range 1 to 10. If any of them comes same show them otherwise show message all numbers are different?

```
int n1, n2, n3;
n1=(int)(Math.random()*9+1);
n2=(int)(Math.random()*9+1);
n3=(int)(Math.random()*9+1);
if (n1==n2)
    System.out.println("N1 and N2 has same value:"+n1);
else if (n1==n3)
    System.out.println("N1 and N3 has same value:"+n1);
else if (n3==n2)
    System.out.println("N3 and N2 has same value:"+n2);
else
    System.out.println("All values are different");
```

**Task 4:**

Write a program to generate 2 random numbers n1 and n2 in range 1 to 5. Display n1 and check if both are equal, show message "Same number generated again, Let me try again." generate n2 again and check if same number generated again, show message "Sorry same number again." otherwise show second number?

```
int n1, n2;
n1=(int)(Math.random()*4+1);
n2=(int)(Math.random()*4+1);
System.out.println("First Number:"+n1);
if (n1==n2){
    System.out.println("Same number generated again, let me try
again!");
    n2=(int)(Math.random()*4+1);
    if (n1==n2)
        System.out.println("Sorry same number again");
    else
        System.out.println("Second Number:"+n2);
}
else
    System.out.println("Second Number:"+n2);
```

\*\*\*\*\*

Next tasks are from deck of cards, if students are luckily unaware of detail of cards used in card games. Read detail of cards, otherwise move to next task:

A pack of cards called deck has 52 cards of 4 types. Each type has 13 cards, 4 types given below. Cards have two colors Red or Black see details below. Each type of card is numbered from 2-10. Where remaining 4 cards has symbols instead of number that is 11 is Jack, 12 is Queen, 13 is King and A for Ace:

Symbol	Type	Color
<b>D</b>	Diamonds	Red
<b>H</b>	Hearts	Red
<b>S</b>	Spades	Black
<b>C</b>	Clubs	Black

Symbol	Representation
<b>A</b>	Ace
<b>2 ... 10</b>	Card values
<b>J</b>	Jack
<b>Q</b>	Queen
<b>K</b>	King

**Task 5:**

Write a program to input card type (String) and print color of the card?

```
String cType;
System.out.print("Enter card type:");
cType=in.next();
if (cType.equals("Diamonds") || cType.equals("Hearts"))
    System.out.println("Red Color Card");
else if (cType.equals("Spades") || cType.equals("Clubs"))
    System.out.println("Black Color Card");
else
    System.out.println("Invalid Type");
```

**Task 6:**

Write a program to generate a card randomly out of deck. Idea is generate a number 1 to 13 both included. Generate another number say type 0 to 4 (4 not included). Now using checks print card like:

Four of Club

```
int cNo, cType;
cNo=(int)(Math.random()*13+2);
cType=(int)(Math.random()*4);
String card;
if (cNo==2)
    card="Two of ";
else if (cNo==3)
    card="Three of ";
else if (cNo==4)
    card="Four of ";
else if (cNo==5)
    card="Five of ";
else if (cNo==6)
    card="Six of ";
else if (cNo==7)
    card="Seven of ";
else if (cNo==8)
    card="Eight of ";
else if (cNo==9)
    card="Nine of ";
else if (cNo==10)
    card="Ten of ";
else if (cNo==11)
    card="Jack of ";
else if (cNo==12)
    card="Queen of ";
else if (cNo==13)
    card="King of ";
else
    card="Ace of ";
if (cType==0)
    card+="Diamonds";
else if (cType==1)
    card+="Hearts";
else if (cType==2)
    card+="Clubs";
else
    card+="Spades";
System.out.println(card);
```

### Task 7:

Extend previous task to generate two cards. Check and show appropriate messages if:

- both cards have same number
- both cards have same type
- both cards have same color
- cards are in sequence

```
int cNo1, cType1, cNo2, cType2;
cNo1=(int)(Math.random()*13+2);
cType1=(int)(Math.random()*4);
cNo2=(int)(Math.random()*13+2);
cType2=(int)(Math.random()*4);
if (cNo1==cNo2)
    System.out.println("Both cards have same number");
if (cType1==cType2)
    System.out.println("Both cards have same type");
int diffType=Math.abs(cType1-cType2);
if (diffType<=1)
    System.out.println("Both cards have same color");
int diffNo=Math.abs(cNo1-cNo2);
if (diffNo<=1)
    System.out.println("Cards in sequence");
```