

## Solution Practice Array 1 (06-07-2021)

Q0. Create following program, discuss in class and already shared on google drive.

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>

int main(){
    srand(time(0));
    int a[10], i;
    for (i=0;i<10;i++){
        a[i] = rand() % 100;
        printf ("%d ", a[i]);
    }
    printf ("\n");
    return 0;0
}
```

Q1. Extend above program and count number of elements less than 50

```
int a[10], i, count = 0;
for (i=0;i<10;i++){
    a[i] = rand() % 100;
    printf ("%d ", a[i]);
    if (a[i]<50) count++;
}
printf ("\n%d numbers are less than 50:\n", count);
```

Q2. Extend/ modify above program, initialize array with values -50 to +50. Count and print negative numbers and positive numbers

```
int a[10], i, countN = 0;
for (i=0;i<10;i++){
    a[i] = rand() % 100 - 50;
    printf ("%d ", a[i]);
    if (a[i]<0) countN++;
}
printf ("\nCount of positive numbers: %d\n", 10 - countN);
printf ("Count of negative numbers: %d\n", countN);
```

Q3. Extend first program, print even number & odd numbers in separate lines. Hint: Use two separate loops to print even & odd numbers

```
int a[10], i;
for (i=0;i<10;i++){
    a[i] = rand() % 100 - 50;
}
for (i=0;i<10;i++)
    if (a[i]>=0)
        printf ("%d ", a[i]);
printf ("\n");
for (i=0;i<10;i++)
    if (a[i]<0)
        printf ("%d ", a[i]);
printf ("\n");
```

**Q4. Extend first program to generate each random number larger than previous number. Hint: You may generate first random number before loop**

```
int a[10], i;
a[0] = rand();
printf ("%d ", a[0]);
for (i=1;i<10;i++){
    a[i] = rand() % a[i-1];
    printf ("%d ", a[i]);
}
printf ("\n");
```

**Q5. Extend first program, compare pair of numbers and print first number is smaller or second is smaller. By pair, we mean first & second numbers are pair, third & fourth numbers are pair and so on**

```
int a[10], i;
for (i=0;i<10;i++){
    a[i] = rand() % 100;
    printf ("%d ", a[i]);
}
for (i=0;i<10;i=i+2)
    if (a[i]<a[i+1])
        printf ("%d is smaller than %d\n ", a[i] , a[i+1]);
    else
        printf ("%d is greater than equal %d\n ", a[i] , a[i+1]);
```

**Q6. Extend first program and print pair of numbers in separate lines. Here, each consecutive number are pairs. For example, first & second number are pair, second & third are pair, third & fourth are pair and so on**

```
int a[10], i, count = 0;
for (i=0;i<10;i++){
    a[i] = rand() % 100;
    printf ("%d ", a[i]);
}
for (i=0;i<9;i++)
    printf ("%d %d\n", a[i], a[i+1]);
```