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Week 1 Assignment

1. Write a C program to print an array.

```
#include<stdio.h>
int main(){
  int n;
  printf("Enter the size of an array : ");
  scanf("%d", &n);
  int arr[n];

  printf("Enter the elements of array : ");
  for(int i = 0; i < n; i++) scanf("%d",&arr[i]);

  printf("The given array is : \n");
  for(int i = 0; i < n; i++) printf("%d ,  ", arr[i]);
  return 0;
}
```

2. Write a C program to check whether a given string is Palindrome or not.

```
#include<stdio.h>
#include<string.h>

int main(){
  char str[50];

  printf("Enter the elements of array : ");
  gets(str);

  int check = 0, n = strlen(str);

  for(int s = 0, e = n - 1; s <= e; s++, e--) {
    if(str[s] != str[e]) {
      check = 1;
      break;
    }
  }

  if(check) printf("The given array is not Palindrome");
```

```
  else printf("The given array is Palindrome");

  return 0;

}
```

3. Write a C program to convert temperature from degree Centigrade to Fahrenheit.

```
#include <stdio.h>

int main(){

  float temp;

  printf("Enter temperature in Centigrade : ");
  scanf("%f", &temp);
  printf("Temperature in Fahrenheit : %f", ((temp * 9/5) + 32));

  return 0;
}
```

4. Write a C program to sort an array.

```
#include<stdio.h>

void BubbleSort(int arr[], int n){

  for(int i = n - 2; i >= 0; i--){

    int isSwapped = 0;
    for(int j = 0; j <= i; j++){
      if(arr[j] > arr[j + 1]){
        isSwapped = 1;
        int temp = arr[j];
        arr[j] = arr[j + 1];
        arr[j + 1] = temp;
      }
    }
    if(!isSwapped) break;
  }

}
```

```
int main(){


  int n;
  printf("Enter the size of an array : ");
  scanf("%d", &n);
  int arr[n];


  printf("Enter the elements of array : ");
  for(int i = 0; i < n; i++) scanf("%d",&arr[i]);


  BubbleSort(arr, n);
  printf("After sorting the given array: \n");


  for (int i = 0; i < n; i++) printf("%d , " , arr[i]);


  return 0;
}
```

5. Write a C program to print the largest and second largest element of the array.

```
#include<stdio.h>
#include<limits.h>

int maxEl(int arr[], int n){
  int max = arr[0];
  for( int i = 0; i < n ; i++){
    if(max < arr[i]) max = arr[i];
  }
  return max;
}
int secondMax(int arr[], int n){
  int max = INT_MIN, smax = INT_MIN;
  for( int i = 0; i < n ; i++){
    if(max < arr[i]) {
      smax = max;
      max = arr[i];
    }
    if(arr[i] != max && arr[i] > smax) smax = arr[i];
  }
```

```
  return smax;
}

int main(){
  int n;
  printf("Enter the size of an array : ");
  scanf("%d", &n);
  int arr[n];

  printf("Enter the elements of array : ");
  for(int i = 0; i < n; i++) scanf("%d",&arr[i]);

  printf("Largest element is : %d\n\n", maxEl(arr, n));
  printf("Second Largest element is : %d", secondMax(arr, n));
  return 0;
}
```

6. Write a C program to display Fibonacci series.

```
#include<stdio.h>


int main(){
  int n, sum = 1, a = 1, b = 1;
  printf("Enter the term : ");
  scanf("%d", &n);
  if(n >= 1) printf("1  , ");
  for(int i = 2; i <= n; i++){
    printf("%d  , ", sum);
    sum = a + b;
    a = b ;
    b = sum;


  }
  return 0;
}
```

7. Write a C program to print reverse array.

```
#include<stdio.h>

int main(){
  int n;
  printf("Enter the size of an array : ");
  scanf("%d", &n);
  int arr[n];

  printf("Enter the elements of array : ");
  for(int i = 0; i < n; i++) scanf("%d",&arr[i]);

  printf("The given array is : \n");
  for(int i = n - 1; i >= 0; i--) printf("%d ,  ", arr[i]);
  return 0;
}
```

8. Write a C program to check the sum of all elements of an array.

```
#include<stdio.h>

int main(){
  int n, sum = 0;
  printf("Enter the size of an array : ");
  scanf("%d", &n);
  int arr[n];

  printf("Enter the elements of array : ");
  for(int i = 0; i < n; i++) scanf("%d",&arr[i]);

  for(int i = 0; i < n; i++) sum += arr[i];

  printf("Sum : %d", sum);
  return 0;
}
```

9. Write a C program to check duplicate number in an array.

```
#include<stdio.h>

int main(){
  int n, sum = 0, check = 0, dup;
  printf("Enter the size of an array : ");
  scanf("%d", &n);
  int arr[n];

  printf("Enter the elements of array : ");
  for(int i = 0; i < n; i++) scanf("%d",&arr[i]);

  for(int i = 0; i < n; i++)
    for(int j = i + 1; j < n; j++){
      if(arr[i] == arr[j]) {
        check = 1;
        dup = arr[i];
        break;
      }
    }
```

```
  if(check) printf("Duplicate number is : %d", dup);
  else printf("There is no duplicate number in this array.");

  return 0;
}
```