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Assignment 8

Using functions

1. Find minimum and maximum number in array.

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

int findMin(int *a,int n){
int min=a[0];
for(int i=1;i<n;i++)if(a[i]<min)min=a[i];
return min;
}

int findMax(int *a,int n){
int max=a[0];
for(int i=1;i<n;i++)if(a[i]>max)max=a[i];
return max;
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
printf("%d\n",findMin(a,n));
printf("%d\n",findMax(a,n));
free(a);
return 0;
}
```

2. Search the given number in array.

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

int search(int *a,int n,int x){
for(int i=0;i<n;i++)if(a[i]==x)return i;
return -1;
```

```
}

int main(){
int n,i,x;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
scanf("%d",&x);
int f=search(a,n,x);
if(f==-1)printf("Not found\n");
else printf("Found at %d\n",f);
free(a);
return 0;
}
```

3. Find sum of all numbers.

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

int findSum(int *a,int n){
int sum=0;
for(int i=0;i<n;i++)sum+=a[i];
return sum;
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
printf("%d",findSum(a,n));
free(a);
return 0;
}
```

4. Find odd and even among the numbers.

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

void printOdd(int *a,int n){
```

```
for(int i=0;i<n;i++)if(a[i]%2!=0)printf("%d ",a[i]);
}

void printEven(int *a,int n){
for(int i=0;i<n;i++)if(a[i]%2==0)printf("%d ",a[i]);
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
printOdd(a,n);
printf("\n");
printEven(a,n);
free(a);
return 0;
}
```

5. Print alternate elements in array.

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

void printAlternate(int *a,int n){
for(int i=0;i<n;i+=2)printf("%d ",a[i]);
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
printAlternate(a,n);
free(a);
return 0;
```

```
}
```

6. Accept array and print only prime numbers of array.

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

int isPrime(int n){
if(n<2)return 0;
for(int i=2;i*i<=n;i++)if(n%i==0)return 0;
return 1;
}

void printPrimes(int *a,int n){
for(int i=0;i<n;i++)if(isPrime(a[i]))printf("%d ",a[i]);
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
printPrimes(a,n);
free(a);
return 0;
}
```

7. Take two array and add sum in third array Example- arr[5]= {1,2, 3, 4,5} brr[5]={10,20,30, 40, 50} crr[5]={11,22,33,44,55}

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

void sumArrays(int *a,int *b,int *c,int n){
for(int i=0;i<n;i++)c[i]=a[i]+b[i];
```

```
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
int *b=(int*)malloc(n*sizeof(int));
int *c=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
for(i=0;i<n;i++)scanf("%d",&b[i]);
sumArrays(a,b,c,n);
for(i=0;i<n;i++)printf("%d ",c[i]);
free(a);free(b);free(c);
return 0;
}
```

8. Merge two arrays

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

void mergeArrays(int *a,int *b,int *m,int n){
for(int i=0;i<n;i++)m[i]=a[i];
for(int i=0;i<n;i++)m[n+i]=b[i];
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
int *b=(int*)malloc(n*sizeof(int));
int *m=(int*)malloc(2*n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
for(i=0;i<n;i++)scanf("%d",&b[i]);
mergeArrays(a,b,m,n);
```

```
for(i=0;i<2*n;i++)printf("%d ",m[i]);
free(a);free(b);free(m);
return 0;
}
```

9. Reverse the given array.

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

void reverseArray(int *a,int n){
for(int i=n-1;i>=0;i--)printf("%d ",a[i]);
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
reverseArray(a,n);
free(a);
return 0;
}
```

10. Sort the array.

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

void sortArray(int *a,int n){
int i,j,t;
for(i=0;i<n-1;i++)
for(j=0;j<n-i-1;j++)
if(a[j]>a[j+1]){t=a[j];a[j]=a[j+1];a[j+1]=t;}
```

```
}

int main(){
int n,i;
scanf("%d",&n);
int *a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)scanf("%d",&a[i]);
sortArray(a,n);
for(i=0;i<n;i++)printf("%d ",a[i]);
free(a);
return 0;
}
```