

iNeuron

Course Name: Job Ready Bootcamp in C++, DSA and IOT

Submitted To: Sir Saurabh Shukla

Submitted By: Musharaf Ali

Assignment No: 15

Date: 16-9-2022

1. Write a function to find the greatest number from the given array of any size. (TSRS)

Program

```
#include<stdio.h>

int greatest(int b[]);

int main()
{
    int a[4],s;
    printf("Greatest number is:%d",greatest(a));
    return 0;
}

int greatest(int b[])
{
    int i,x;
    printf("Enter 4 numbers:");
    for(i=0;i<=3;i++)
        scanf("%d",&b[i]);
    x=b[0];
    for(i=1;i<=3;i++)
    {
        if(x<b[i])
            x=b[i];
    }
    return(x);
}
```

2. Write a function to find the smallest number from the given array of any size. (TSRS)

Program

```
#include<stdio.h>

int smallest(int b[]);

int main()
{
    int a[4],s;
    printf("smallest number is:%d",smallest(a));
    return 0;
}

int smallest(int b[])
{
    int i,x;
    printf("Enter 4 numbers:");
    for(i=0;i<=3;i++)
        scanf("%d",&b[i]);
    x=b[0];
    for(i=1;i<=3;i++)
    {
        if(x>b[i])
            x=b[i];
    }
    return(x);
}
```

3. Write a function to sort an array of any size. (TSRS)

Program

```
#include<stdio.h>

void sort(int c[]);

int main()
{
    int a[4];

    sort(a);

    return 0;
}

void sort(int c[])
{
    int i,b,x;

    printf("Enter a 4 numbers:");

    for(i=0;i<=3;i++)

        scanf("%d",&c[i]);

    for(b=0;b<=3;b++)
    {
        x=c[b];

        for(i=b+1;i<=3;i++)
        {
            if(x>c[i])
            {
                x=c[i];

                c[i]=c[b];

                c[b]=x;
            }
        }
    }
}
```

```

        }
    }
    for(i=0;i<=3;i++)
        printf("%d ",c[i]);
}

```

4. Write a function to rotate an array by n position in d direction. The d is an indicative value for left or right. (For example, if array of size 5 is [32, 29, 40, 12, 70]; n is 2 and d is left, then the resulting array after left rotation 2 times is [40, 12, 70, 32, 29])

Program

```

#include<stdio.h>

void rotate(int b[]);

int main()
{
    int a[5];
    rotate(a);
    return 0;
}

void rotate(int b[])
{
    int i,p,d,x,j;
    printf("Enter a 5 number:");
    for(i=0;i<=4;i++)
        scanf("%d",&b[i]);
    printf("1 mean right and 0 mean left\n3");
    printf("Enter position and direction:");
    scanf("%d%d",&p,&d);
}

```

```
if(d==1)
{
    for(i=0;i<p;i++)
    {
        x=b[0];
        for(j=0;j<=4;j++)
        {
            if(j==4)
                b[j]=x;
            else
                b[j]=b[j+1];
        }
    }
    for(i=0;i<=4;i++)
        printf("%d ",b[i]);
}
else
{
    for(i=0;i<p;i++)
    {
        x=b[4];
        for(j=4;j>=0;j--)
        {
            if(j==0)
                b[j]=x;
            else
                b[j]=b[j-1];
        }
    }
}
```

```

        }
    }
    for(i=0;i<=4;i++)
        printf("%d ",b[i]);
    }
}

```

5. Write a function to find the first occurrence of adjacent duplicate values in the array. Function has to return the value of the element.

Program

```

#include<stdio.h>

int duplicate(int b[]);

int main()
{
    int a[5];

    printf("First duplicate value is:%d",duplicate(a));

    return 0;
}

int duplicate(int b[])
{
    int i,j;

    printf("Enter 5 numbers:");

    for(i=0;i<=4;i++)
        scanf("%d",&b[i]);

    for(i=0;i<=4;i++)
    {
        for(j=i+1;j<=4;j++)

```

```

        {
            if(b[i]==b[j])
                return(b[i]);
        }
    }
}

```

6. Write a function in C to read n number of values in an array and display it in reverse order.

Program

```

#include<stdio.h>

void reverse(int b[]);

int main()
{
    int a[5];
    reverse(a);
    return 0;
}

void reverse(int b[])
{
    int i;
    printf("Enter a 5 numbers:");
    for(i=0;i<=4;i++)
        scanf("%d",&b[i]);
    for(i=4;i>=0;i--)
        printf("%d ",b[i]);
}

```


7. Write a function in C to count a total number of duplicate elements in an array.

Program

```
#include<stdio.h>

int duplicate(int b[]);

int main()
{
    int a[5];

    printf("Duplicate value is:%d",duplicate(a));

    return 0;
}

int duplicate(int b[])
{
    int i,j,count=0;
    printf("Enter 5 numbers:");
    for(i=0;i<=4;i++)
        scanf("%d",&b[i]);
    for(j=0;j<=4;j++)
    {
        for(i=j+1;i<4;i++)
        {
            if(b[j]==b[i])
                count++;
        }
    }
    return(count);
}
```

8. Write a function in C to print all unique elements in an array.

Program

```
#include<stdio.h>

void unique(int b[]);

int main()
{
    int a[5];

    unique(a);

    return 0;
}

void unique(int b[])
{
    int i,j,count=0;
    printf("Enter 5 numbers:");
    for(i=0;i<=4;i++)
        scanf("%d",&b[i]);
    for(i=0;i<=4;i++)
    {
        count=0;
        if(b[i])
        {
            for(j=i+1;j<=4;j++)
            {
                if(b[i]==b[j])
                {
                    count++;
                }
            }
        }
    }
}
```

```

        b[j]=0;
    }
}
if(count==0)
    printf("%d ",b[i]);
}
}
}

```

9. Write a function in C to merge two arrays of the same size sorted in descending order .

Program

```

#include<stdio.h>

void merge(int x[],int y[]);

int main()
{
    int a[3],b[3];
    merge(a,b);
    return 0;
}

void merge(int x[],int y[])
{
    int i,z[6],j,temp;
    printf("Enter 3 numbers:");
    for(i=0;i<=2;i++)
    {

```

```
        scanf("%d",&x[i]);
        z[i]=x[i];
    }
    printf("Enter 3 numbers:");
    for(i=0;i<=2;i++)
    {
        scanf("%d",&y[i]);
        z[3+i]=y[i];
    }
    for(i=0;i<=5;i++)
    {
        temp=z[i];
        for(j=i+1;j<=5;j++)
        {
            if(temp<=z[j])
            {
                temp=z[j];
                z[j]=z[i];
                z[i]=temp;
            }
        }
    }
    for(i=0;i<=5;i++)
        printf("%d ",z[i]);
}
```

10. Write a function in C to count the frequency of each element of an array.

Program

```
#include<stdio.h>

void frequency(int x[]);

int main()
{
    int a[5];
    frequency(a);
    return 0;
}

void frequency(int x[])
{
    int i,j,count;
    printf("Enter a 5 numbers:");
    for(i=0;i<=4;i++)
        scanf("%d",&x[i]);
    for(i=0;i<=4;i++)
    {
        count=1;
        if(x[i])
        {
            for(j=i+1;j<=4;j++)
            {
                if(x[i]==x[j])
                {
                    count++;
                    x[j]=0;
                }
            }
        }
    }
}
```

```
        }  
    }  
    printf("%d fre is:%d\n",x[i],count);  
}  
}  
}
```