

## 2.Dynamic memory allocation (malloc(),calloc(),realloc(),free())

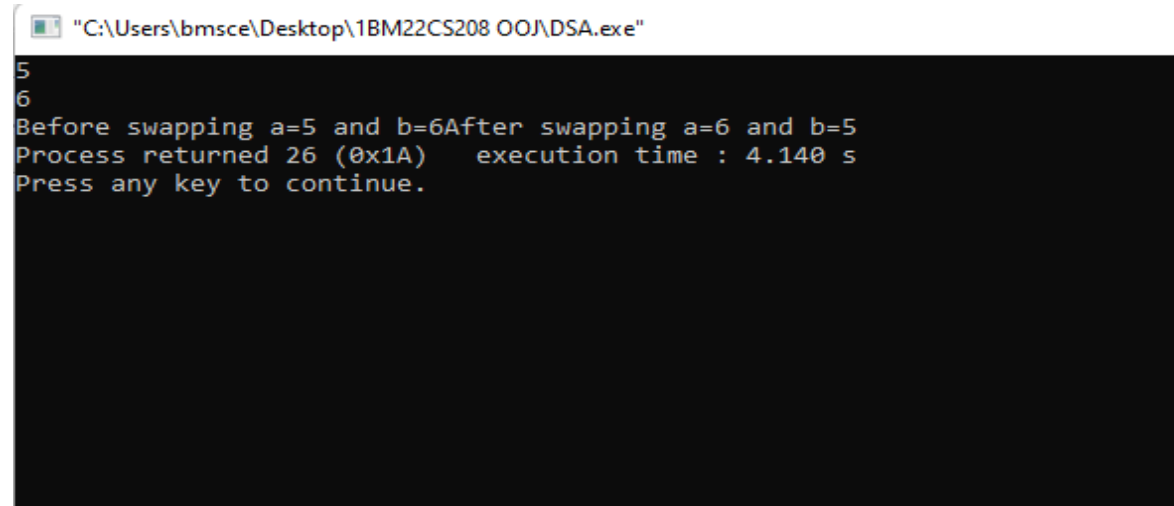
```
#include <stdio.h>
#include <stdlib.h>
void main()
{
    int *p1,*p2;
    int n,i;
    printf("Enter the number of array elements\t");
    scanf("%d",&n);
    p1=(int*)malloc(n*sizeof(int));
    p2=(int*)calloc(n,sizeof(int));
    if(p1==NULL&& p2==NULL)
    {
        printf("memory is not allocated\n");
        exit(0);
    }
    else
    {
        printf("memory is succesfully allocated");

        for(i=0;i<n;i++)
            p1[i]=i+1;
        printf("array elements in malloc are:\n");
        for(i=0;i<n;i++)
            printf("%d",p1[i]);
```

```
for(i=0;i<n;i++)
    p2[i]=i+1;
printf("array elements in calloc are:\n");
for(i=0;i<n;i++)
    printf("%d",p2[i]);
}
printf("enter the new size of n\n");
scanf("%d",&n);
p2=(int*)realloc(p2,n*(sizeof(int)));
if(p2==NULL)
{
    printf("memory is not allocated");
    exit(0);
}
else
{
    printf("memory is succesfully allocated\n");
    for(i=0;i<n;i++)
        p2[i]=i+1;
    printf("array elements in realloc are:\n");
    for(i=0;i<n;i++)
        printf("%d",p2[i]);
}
free(p1);
printf("\nMalloc memory succesfully freed\n");
```

```
free(p2);  
printf("Calloc memory succesfully freed");  
}
```

### OUTPUT:



```
"C:\Users\bmsce\Desktop\1BM22CS208 OOI\DSA.exe"  
5  
6  
Before swapping a=5 and b=6After swapping a=6 and b=5  
Process returned 26 (0x1A) execution time : 4.140 s  
Press any key to continue.
```