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: