BINARY SEARCH

CODE:

```
#include <stdio.h>
#include <stdlib.h>
#include<sys/types.h>

int main(int argc , char *argv[])

{
        int i;
        int array[argc];

        //store the elements into the array (command line arguments)
        for(int i=1 ; i<argc ; i++)
        {
                array[i-1] = atoi(argv[i]);
        }

        printf("\nThe elements stored in array (after sorting ) are :\n");
        for(int i=2; i<argc ;i++)
        {
                printf("%d\n",array[i-1]);
        }

        int search;
        printf("Enter the target to search : ");
        scanf("%d",&search);
        int low = 1;
        int high = argc-1;
        int found=0;
        while ( low <= high)
        {
                //int mid =low + (high - low) / 2;
                int mid =(high + low) / 2;
                if (array[mid] == search)
                {
                        printf("\nElement Found at index: %d \n", mid-1);
                        printf("\nB process id : %d \n",getpid());
                        printf("\nB Parent process id : %d \n",getppid());
                        found=1;
                        break;
                }
                else if (array[mid] < search)
                {
                          low = mid + 1;
                }
                else
                {
                        high = mid - 1;
                }
    }
    if(found==0)
    {
        printf("\nThe element %d is not present in the given array !!!\n",search);
    }
return 0;

}
```

Sorting, fork() and execv()

CODE:

```
#include<sys/types.h>
#include<unistd.h>
#include<stdio.h>

int main(int argc , char *argv[])
{
        pid_t processid;
        int n=argc;


        processid=fork();
        if( processid==0 )
        {
                printf("\nChild process id : %d \n",getpid());
                printf("\nChild Parent process id : %d \n",getppid());

                char* array[argc];
                //store the elements into the array (command line arguments)
                int k;
                for(k=1 ; k<argc+1 ; k++)
                {
                        array[k-1] = argv[k];
                }
                printf("\nThe elements stored in array (before sorting) :\n");
                for(int q=3 ; q<argc ;q++)
                {
                        printf("%d\n",atoi(array[q-1]));
                }
                char* temp;
                for(int i=2;i<n-1;i++)
                {
                        for(int j=2;j<n-i-1;j++)
                        {
```

```
                    if( atoi(array[j]) > atoi(array[j+1]) )
                    {
                            temp=array[j];
                            array[j]=array[j+1];
                            array[j+1]=temp;
                    }
                }
            }
            //inserting NULL at the end of the array.
            array[k]=NULL;

            //execl()to pass a list
            //execv() to pass a vector

            execv(array[0],array);
        }
        else
        {
            wait();
            printf("\nParent process id : %d",getpid());
            printf("\nParent parent process id : %d",getppid());
        }
}
```

OUTPUT

```
superbird@superbird-VirtualBox:~/Downloads$ gcc demo.c -o b.out
demo.c: In function ‘main’:
demo.c:36:57: warning: implicit declaration of function ‘getpid’
[-Wimplicit-function-declaration]
   36 |                 printf("\nB process id : %d \n",getpid());
      |                                                 ^~~~~~
demo.c:37:64: warning: implicit declaration of function ‘getppid’
[-Wimplicit-function-declaration]
   37 |               printf("\nB Parent process id : %d \n",getppid());
      |                                                      ^~~~~~~


superbird@superbird-VirtualBox:~/Downloads$ gcc tia05_4.c
tia05_4.c: In function ‘main’:
tia05_4.c:27:39: warning: implicit declaration of function ‘atoi’
[-Wimplicit-function-declaration]
   27 |                 printf("%d\n",atoi(array[q-1]));
      |                               ^~~~
```

```
tia05_4.c:52:17: warning: implicit declaration of function ‘wait’
[-Wimplicit-function-declaration]
   52 |              wait();
      |              ^~~~


superbird@superbird-VirtualBox:~/Downloads$ ./a.out ./b.out 10 67 3 5 1 55 90 7 1 32
100

Child process id : 3791

Child Parent process id : 3790

The elements stored in array (before sorting) :
67
3
5
1
55
90
7
1
32
100

The elements stored in array (after sorting ) are :
1
1
3
5
7
32
55
67
90
100
Enter the target to search : 90

Element Found at index: 8

B process id : 3791

B Parent process id : 3790

Parent process id : 3790
Parent parent process id : 3425

superbird@superbird-VirtualBox:~/Downloads$
```