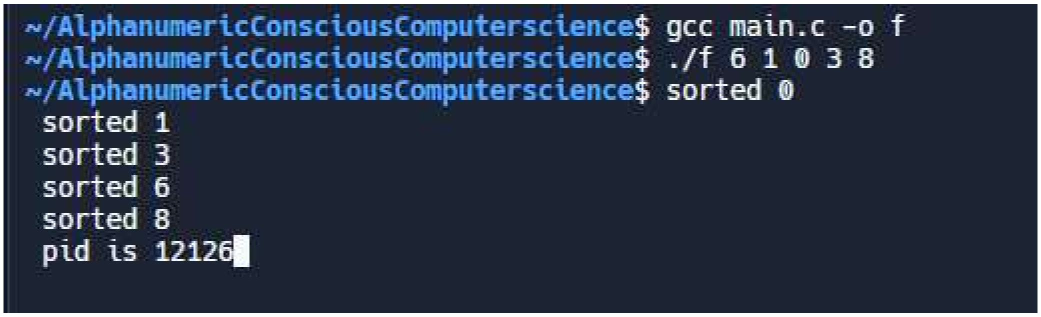
question 1

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

int main(int argc ,char*argv[]) {
    int arr[argc-1];
    int n=argc-1;
    for(int i=1;i<argc;i++)
        {
            arr[i]=atoi(argv[i]);
        }
    pid_t pid=fork();

    if(pid==0)
    {
        for(int i=1;i<n;i++)
            {
                for(int j=i+1;j<=n;j++)
                    {
                        if(arr[i]>arr[j])
                        {
                            int a=arr[i];
                            arr[i]=arr[j];
                    arr[j]=a;

                 }

              }

        }


     for(int i=1;i<=n;i++)

        {

           printf("sorted %d\n ",arr[i]);

        }

     printf("pid is %d",getpid());

  }


}
```

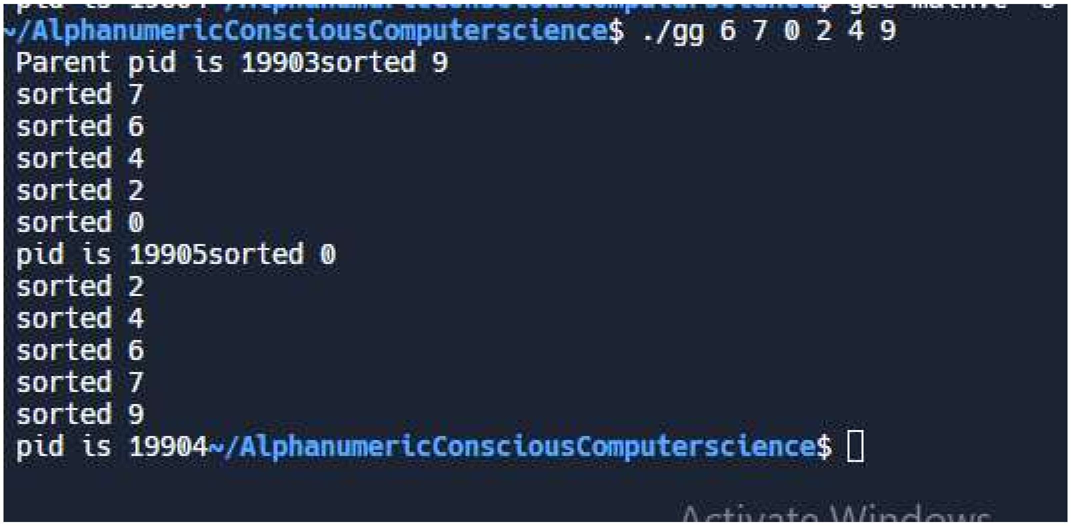


```
~/AlphanumericConsciousComputerscience$ gcc main.c -o f
~/AlphanumericConsciousComputerscience$ ./f 6 1 0 3 8
~/AlphanumericConsciousComputerscience$ sorted 0
 sorted 1
 sorted 3
 sorted 6
 sorted 8
 pid is 12126
```

question 2

```
#include <stdio.h>

#include <sys/types.h>

#include <unistd.h>

#include<stdlib.h>


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

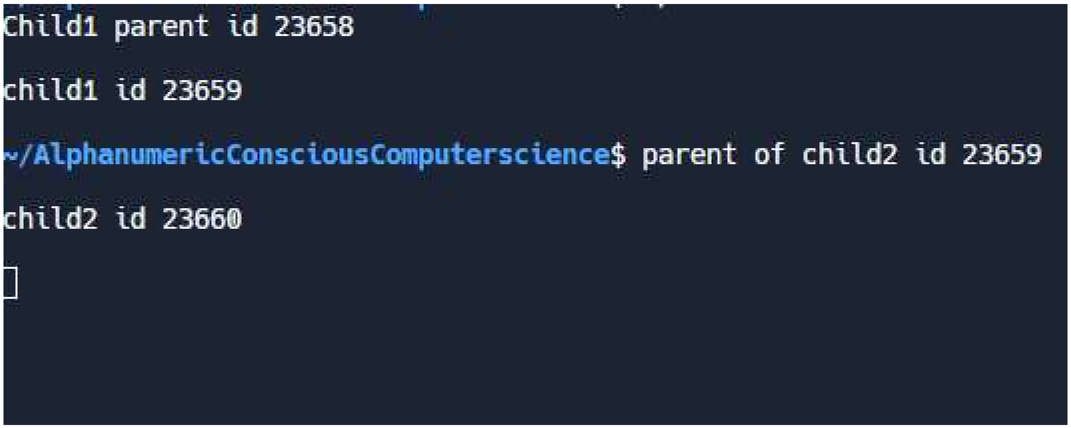
```
int arr[argc-1];
int n=argc-1;
for(int i=1;i<argc;i++)
    {
        arr[i]=atoi(argv[i]);
    }
pid_t pid=fork();

if(pid==0)
{
    for(int i=1;i<n;i++)
        {
            for(int j=i+1;j<=n;j++)
                {
                    if(arr[i]>arr[j])
                    {
                        int a=arr[i];
                        arr[i]=arr[j];
                        arr[j]=a;
                    }
                }
        }

    for(int i=1;i<=n;i++)
        {
            printf("sorted %d\n ",arr[i]);
        }
    printf("pid is %d",getpid());
    }
    else
    {
        pid_t t= fork();
        if(t==0)
        {
            for(int i = 1; i < n; ++i){
                for(int j = i+1; j <=n ;++j){
                    if(arr[i] < arr[j]){
                            int a = arr[i];
                            arr[i] = arr[j];
                            arr[j] = a;
                            }
                        }
                    }
            for(int i=1;i<=n;i++)
            {
                printf("sorted %d\n ",arr[i]);
            }
        printf("pid is %d",getpid());
        }
        else{
            printf(" Parent pid is %d",getpid());
        }
    }

}
```



```
~/AlphanumericConsciousComputerscience$ ./gg 6 7 0 2 4 9
 Parent pid is 19903sorted 9
 sorted 7
 sorted 6
 sorted 4
 sorted 2
 sorted 0
 pid is 19905sorted 0
 sorted 2
 sorted 4
 sorted 6
 sorted 7
 sorted 9
 pid is 19904~/AlphanumericConsciousComputerscience$ 
```

Question 3

```
#include <stdio.h>

#include <stdlib.h>

#include <sys/types.h>

#include <unistd.h>



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

    int arr[argc - 1];

    int n = argc - 1;

    for (int i = 1; i < argc; i++) {

        arr[i] = atoi(argv[i]);

    }

    pid_t pid = fork();



    if (pid == 0) {

        printf("child1 id %d", getpid());

        printf("\n\n");
        pid_t i = fork();

        if (i == 0) {

            printf("child2 id %d", getpid());

            printf("\n\n");

        } else {

            printf("parent of child2 id %d", getpid());

            printf("\n\n");

        }

    } else {

        printf("Child1 parent id %d", getpid());

        printf("\n\n");

    }

}
```



```
Child1 parent id 23658

child1 id 23659

~/AlphanumericConsciousComputerscience$ parent of child2 id 23659

child2 id 23660

```