Homework 1 Report
CSC 4320 Operating Systems
Spring 2018
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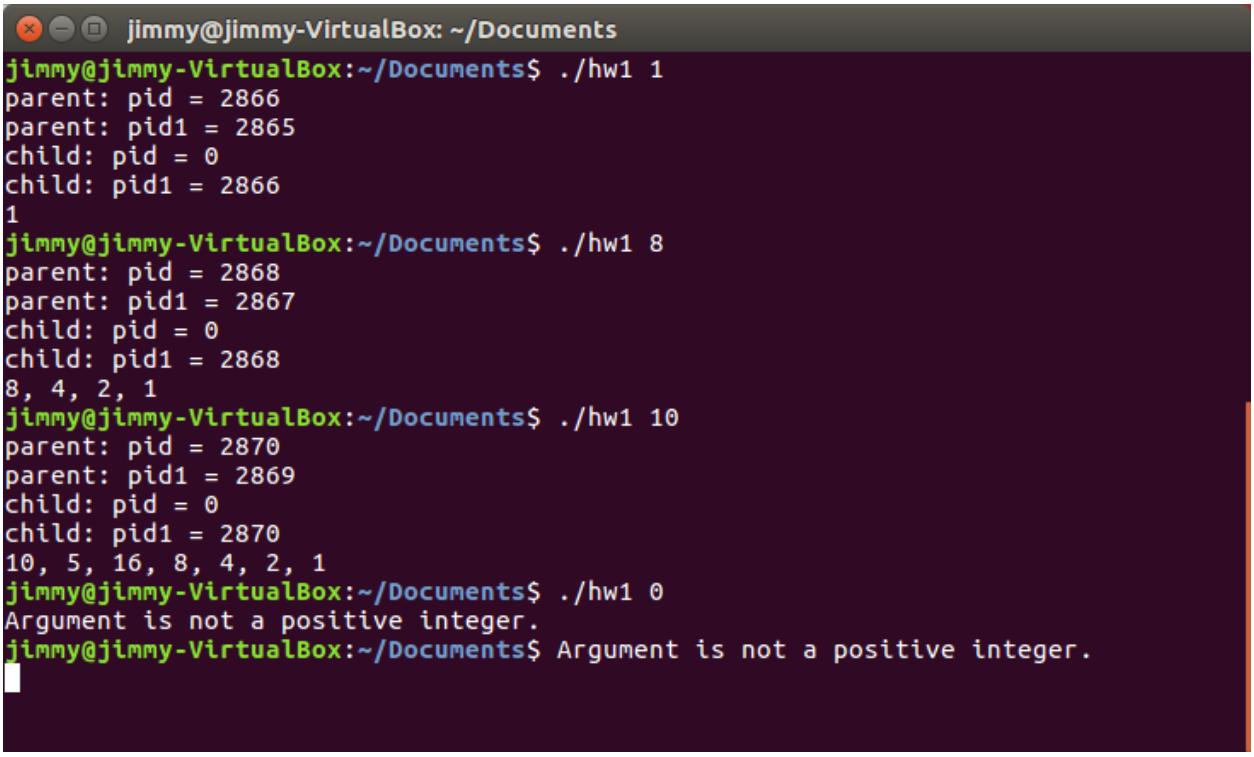
1. Screenshot of program outputs.



2. Source code

```
#include <stdio.h>

#include <unistd.h>

#include <sys/types.h>


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

{

pid_t pid, pid1;

int n;
```

```
if (argc == 1) {
        fprintf(stderr,"Usage: ./a.out <starting value>\n");

        return -1;
}

n = atoi(argv[1]);

/* add your code below, following the code structure of Figure 3.34 (page 152) */



pid=fork();

//check if n is positive
if(n<=0){
        fprintf(stderr,"Argument is not a positive integer.\n");
        return 1;
}
//check if fork fails
if(pid<0){
        fprintf(stderr,"Fork failed.");
        return 1;
```

```
}
else if(pid==0){ //child process
        pid1=getpid();
        printf("child: pid = %d\n",pid);
        printf("child: pid1 = %d\n",pid1);
        while(n>1){
                if(n%2==0){
                        printf("%d, ",n);
                        n=n/2;
                }
                else{
                        printf("%d, ",n);
                        n=(3*n)+1;
                }
        }
        printf("%d\n",n);
}
else{ //parent process
        pid1=getpid();
        printf("parent: pid = %d\n",pid);
        printf("parent: pid1 = %d\n",pid1);
        wait(NULL);
}
```

```
        return 0;
}
```