Report on Assignment 1

By: Yusreen Shah (A00415678)

The approach of this assignment was to use N pairs of pipes for N worker processes.

Pseudocode:

1.Create the children processes using fork()

2.Create N parent to child pipes using a 2d array:

//Creating N pairs of pipes using 2d array

int fd\_ctp [NUMBER\_OF\_CHILDREN+1][2];

int fd\_ptc [NUMBER\_OF\_CHILDREN+1][2];

3. The parent process sends the area to the child processes.

4. The child processes read the area, and then calculate the area of the trapezoid until we have gone through all of the 32 trapezoids.

5.We define the function f whereby we calculate the value of x at each function:

//Evaluate the function at each x

float f(float x){

float temp= (float)1/((float)1+(x\*x));

return temp;

}

6. We evaluate the function at the limits and then add them to the area defined in the main function.

7. Throughout the code, we are using trap\_left as a common variable between the child parent process.

8. For each calculated area, it is added to the array areas by the parent. Once we have gone through 32 trapezoids, the parent then calculate the final result.

7. About void calculate\_area (int fd\_ctp[][2], int fd\_ptc[][2], int id)

**This is the place where we calculate the area**

We define the variable area in this function.

For each trapezoid, the chosen worker process calculates the area and then send it to the parent through the corresponding pipes

write(fd\_ctp[id][WRITE], &area, SIZE\_OF\_FLOAT);

**Note to marker:**

Please be advised that you can change the number of processes, by simply changing the int const NUMBER\_OF\_CHILDREN.

I have commented some of the lines for clarity. Feel free to uncomment them if you need to get a deeper understanding of how the code works.