Homework 3

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Problem Solution Approach

First of all, this is basically (as mentioned teams) a smoker consumer problem. In this problem, smoker only needs one ingredient, in our homework, chefs need two ingredient.

So I use my old function from previous homeworks, that reads the text file. It converts the text file to struct and keeps important things in structs fields.

After this, it creates initial processes for named and unnamed semaphroes. And runs it.

My Approach

I use 4 pushers for sending data to chefs. And they are also processors. So I created 4 more process too for this.

They are also uses `psuherWorking` semaphore to check if another pusher working or not.

Validation for homework

As mentioned in homework pdf, I had limited time, so, first of all, I created necessary processes.

Validation for Named Part

Creates all necessary chefes in this part

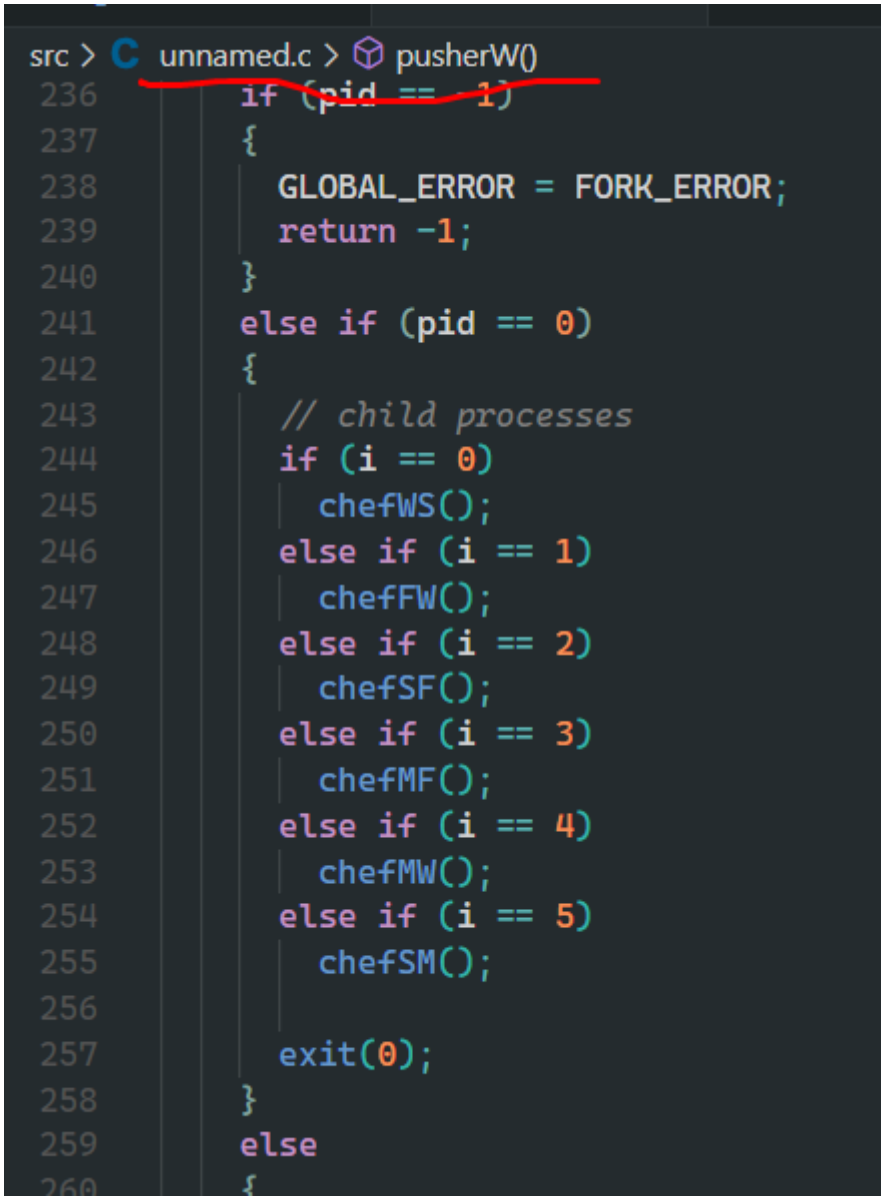
src > named.c > chefSM()

```c
// create chief
for (int i = 0; i < CHIEF_COUNT; i++)
{
  pid = fork();
  if (pid == -1)
  {
    GLOBAL_ERROR = FORK_ERROR;
    return -1;
  }
  else if (pid == 0)
  {
    // child processes
    if (i == 0)
      chefWS();
    else if (i == 1)
      chefFW();
    else if (i == 2)
      chefSF();
    else if (i == 3)
      chefMF();
    else if (i == 4)
      chefMW();
    else if (i == 5)
      chefSM();

    exit(0);
  }
  else
  {
    // parent process
    pids[i + PUSHER_COUNT] = pid;
  }
}
```

Validation for unnamed Part

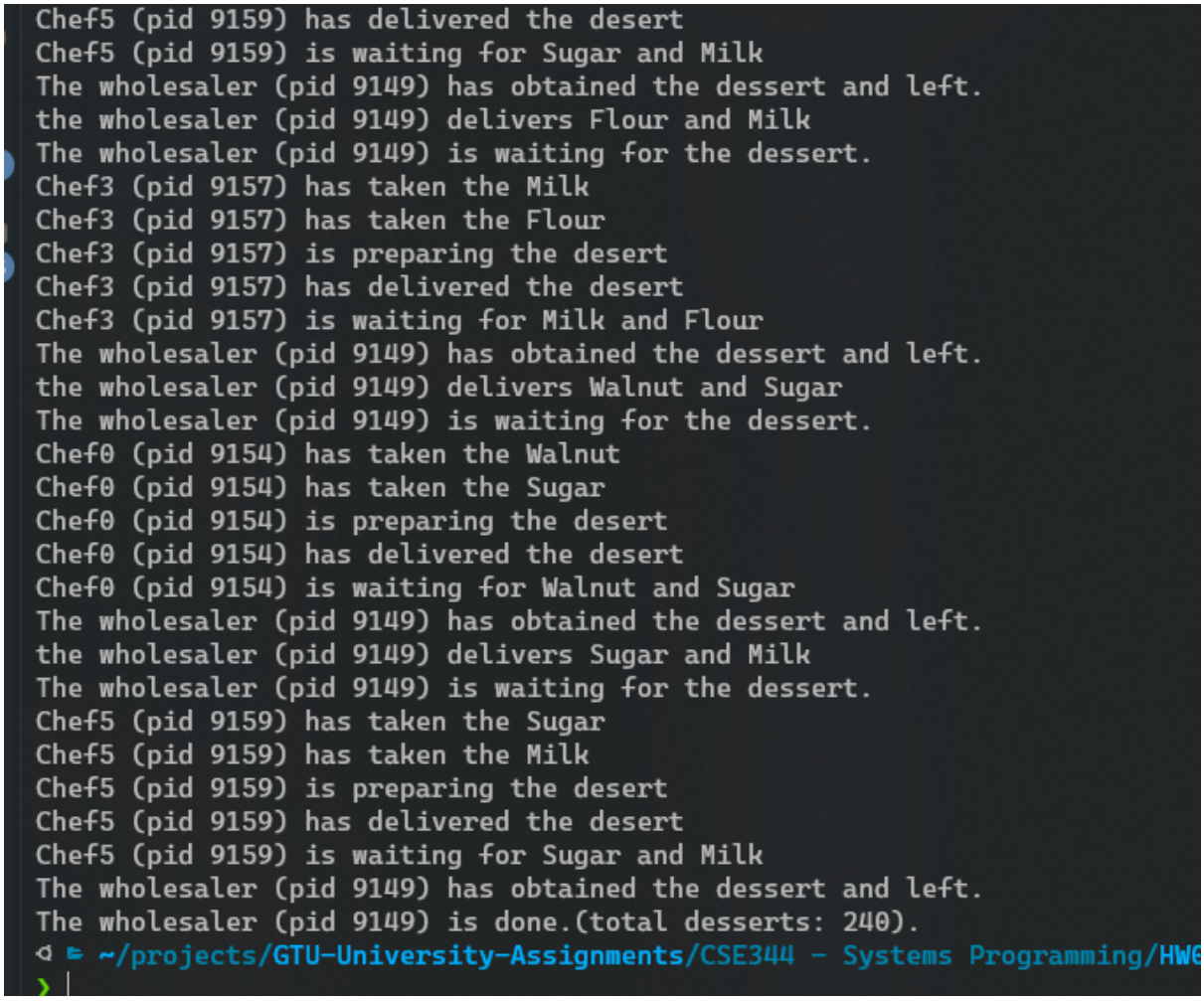
Creates all child chef processes



Running Results

Named Part

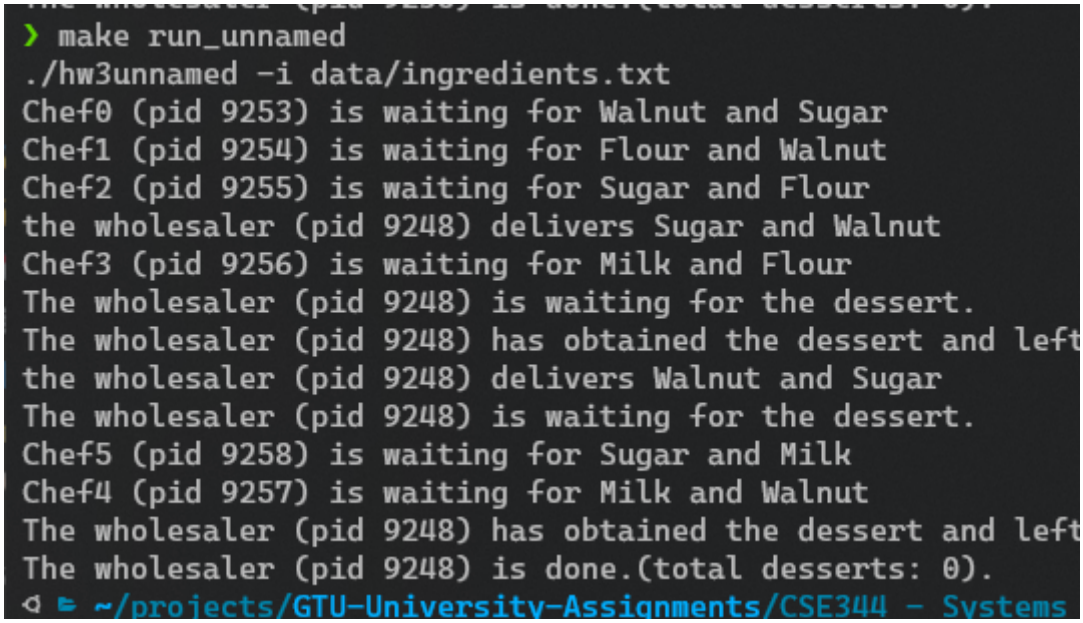
Named part working as expected even with 240 input



Unnamed Part

Unnamed part does not works correctlty unfortunatelly.

It creates child pcorsseses (passes the validation), unlinks and free’s its memory but can not produce correct output.

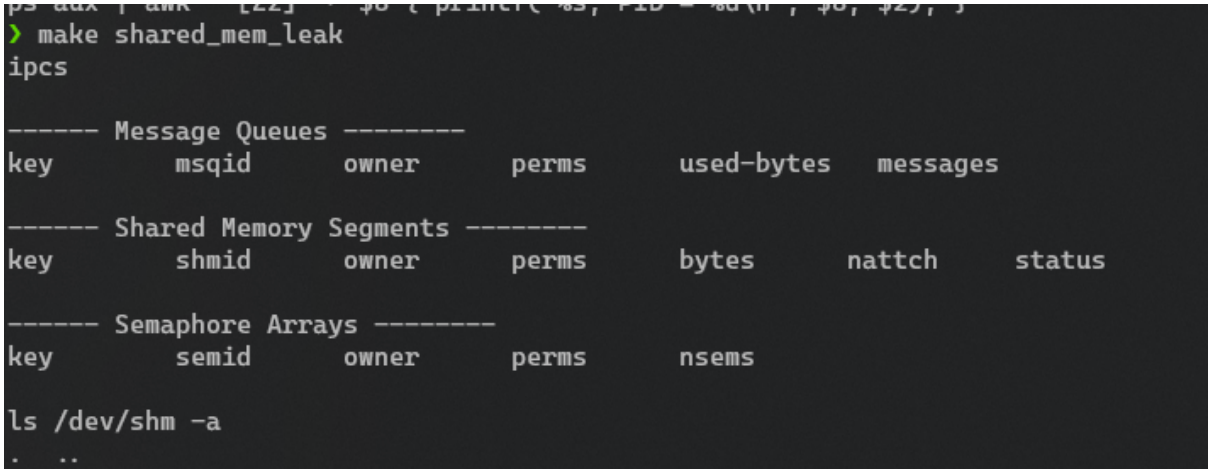


Leak results

After running `make shared_mem_leak`a, `make_zombies` and `make_memory`, there is no un freed or zombie or unlinked shared mem

Zombie result

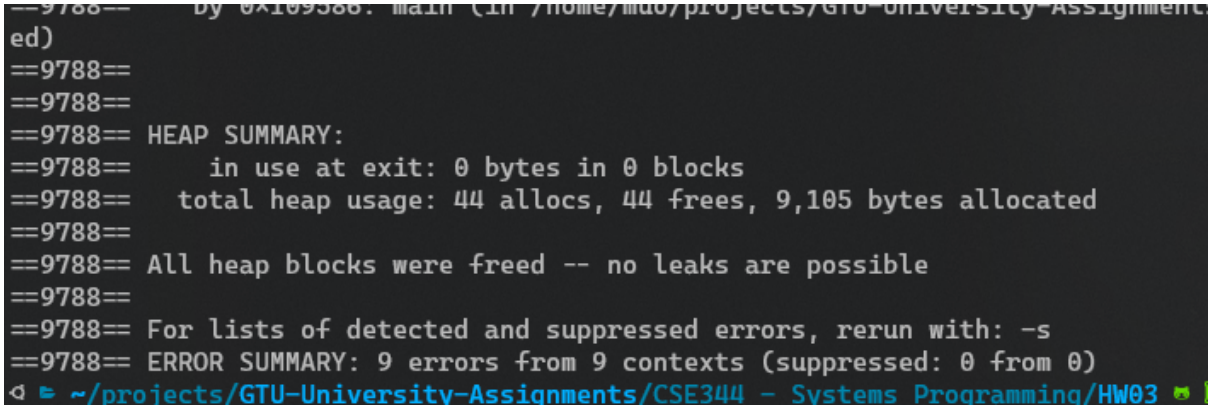
Shared Mem Result



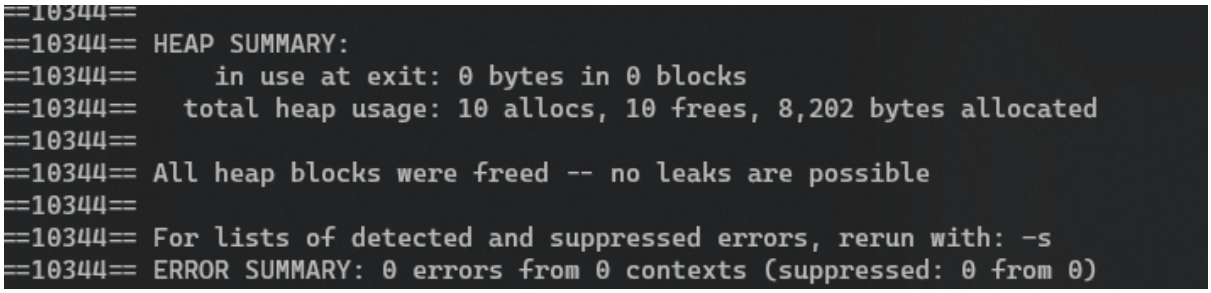
Valgrind Result

Named Part

There are some little warnings but all content is freed



Unnamed Part



Not working parts of homework

unfrortunatelly, unnamed part does not working correctly. But it tries to behaves as expected and creates all necessary child processes.