

### OS Lab Report 3

1. What is the purpose of the ChildData struct found in main.h?

The ChildData struct holds indexes to the portion of the matrix multiplication (dot product, dot products) that will be performed by a specific process or thread.

2. What is the purpose of using void \* within the code to refer to larger blocks of allocated memory?

It is easier to reference a large block of memory as void \* rather than going through the trouble of creating a two dimensional pointer array that points to some specific type.

3. How are the matrices - MatrixA, MatrixB, and MatrixC - stored in memory?

The matrices are stored in memory linearly adjacent to each other. They are stored in row major order.

4. Does the cptr variable need to be advanced in the dotProduct function, and if so, how does it advance?

cptr represents the resulting element in the solution matrix. dotProduct computes a whole row of values in the solution matrix. cptr is advanced column by column inside the dotProduct function. When we wish to compute a different row, a different ChildData object is used and a call is made to the dotProduct function to compute the other rows.

5. Would it be appropriate to advance the cptr by modifying the code that currently reads,

```
*cptr += (*aptr) * (*bptr);
```

to code that reads,

```
*(cptr++) += (*aptr) * (*bptr);
```

and why, or why not?

This won't work as the parenthesis will make the ++ operation execute before the deference occurs.