**CSCE 613: Project 3**

**Two page sizes design**

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If we want our page management system to work on architectures with different page sizes, we would need to modify two classes: FramePool class; and PageTable class.

# FramePool class changes

Changing the FramePool class would be pretty straightforward. Since the frame size value is set using #define, simply updating this value from 4 KB to 16 MB would be enough. All further computations on this class are dependent on the FRAME\_SIZE defined value. As we are increasing the frame size, there is also no worries about whether the frame size is enough to store the frame bitmaps for the kernel and process memory pools.



# PageTable class changes

The PageTable class also contains a defined value for FRAME\_SIZE, so this would also need to change in the same way it was changed for the FramePool class. PageTable also has another defined value called PAGE\_TABLE\_SIZE, which stores the number of entries for the page directory and page tables. Now that each frame has 16 MB instead of 4 KB we need extra bits for the offset in order to be able to reach the entire address space of the frame. Using 4 KB pages an offset of 12 bits was enough, but for the 16 MB pages it is needed 24 bits to span the entire offset, leaving us with 8 bits to be divided into the page directory and page table.