

Princeton University
COS 217: Introduction to Programming Systems
Assembler Assignment
Suggestions for Creating the Text Section

```
static int Pass2_create3aMnm(unsigned int uiOp, unsigned int uiOp3,
    unsigned int uiRs1, unsigned int uiRs2, unsigned int uiRd)
{
    struct
    {
        unsigned int uiOp:2;
        unsigned int uiRd:5;
        unsigned int uiOp3:6;
        unsigned int uiRs1:5;
        unsigned int uiI:1;
        unsigned int uiAsi:8;
        unsigned int uiRs2:5;
    } sInstr;

    sInstr.uiOp = uiOp;
    sInstr.uiRd = uiRd;
    sInstr.uiOp3 = uiOp3;
    sInstr.uiRs1 = uiRs1;
    sInstr.uiI = 0;
    sInstr.uiAsi = 0;
    sInstr.uiRs2 = uiRs2;
    return *(int*)&sInstr;
}
```

Assuming `pcTextCode` points to the beginning of the text section memory block, and `iTextLocCtr` is the text section location counter...

For the instruction `add %g1, %g2, %g3`:

```
iInstr = Pass2_create3aMnm(2, 0, 1, 2, 3);
...
pcDest = pcTextCode + iTextLocCtr;
memcpy(pcDest, &iInstr, 4);
iTextLocCtr += 4;
```