Memory Layout and Management Part 1

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1. **Address: 0x300**
   Instruction: PUSH 0x800
   Result: $SP \rightarrow 0x114$, $PC \rightarrow 0x304$, $Memory[0x114] = 0x800$

2. **Address: 0x304**
   Instruction: PUSH *(0x804)
   Result: $SP \rightarrow 0x110$, $PC \rightarrow 0x308$, $Memory[0x110] = 0x200$

3. **Address: 0x308**
   Instruction: CALL 0x400
   Result: $SP \rightarrow 0x10C$, $PC \rightarrow 0x400$, $Memory[0x10C] = 0x30C$

4. **Address: 0x400**
   Instruction: MOV $(SP + 8) \rightarrow EAX$
   Result: $EAX = 0x800$, $PC \rightarrow 0x404$

5. **Address: 0x404**
   Instruction: MOV $SP \rightarrow *EAX$
   Result: $Memory[0x800] = 0x10C$, $PC \rightarrow 0x408$

6. **Address: 0x408**
   Instruction: MOV $(SP + 4) \rightarrow EAX$
   Result: $EAX = 0x200$, $PC \rightarrow 0x40C$

7. **Address: 0x40C**
   Instruction: MOV $EAX \rightarrow SP$
   Result: $SP = 0x804$, $PC \rightarrow 0x410$

8. **Address: 0x410**
   Instruction: RET
   Result: $SP \rightarrow 0x808$, $PC \rightarrow 0x30C$