```
ColorConfig
| - filename: str
| - primary: str
| - off: str
| + __init__(filename="colors.cfg") |
| + load_colors(): void
     | used by
     UVSimGUI
| - root: Tk
| - sim: UVSim
| - load: Load_Program
| - accumulator_var: StringVar |
| - run_button: Button
| - memory_entries: list[Entry]|
| - output_lines: list[str]|
| - colors: ColorConfig
+----+
| + __init__(root: Tk)
| + build_widgets(): void |
| + load_file(): void
| + save_file(): void
| + run_program(): void
| + step_through_program(): void |
| + show_read_popup(operand: int): int |
| + update_memory_display(): void |
| + update_output(): void |
| + clear_output(): void |
   uses
                                              has-al
                                                                  uses
 UVSim
                                         | Load_Program |
                                                                       Convert
  ----+
|-cpu:CPU |
                                         | - memory: Memory|
                                                                 | + convert_to_int(word): int or False |
| - memory: Memory|
                                         | + __init__()
                                                        | + load_program(filename: str): void |
| + __init__(memory: Memory = None) |
| + run(): void |
```

```
\blacktriangle
   has-a
+----+
   CPU
+----+
| - accumulator: int |
| - program_counter: int |
| - halted: bool
+----+
| + __init__()
| + execute(instruction: int, memory: Memory): void |
+----+
   \blacktriangle
  uses
   +----+
| Memory |
+----+
| - memory: list[MemoryRegister] |
| - read_callback: Optional[Callable] |
| - waiting_for_input: bool
+----+
| + ___init___()
| + write(address: int, value: int): void |
| + read(address: int): int
+----+
    | has-a
| MemoryRegister |
+----+
| - value: int |
+----+
| + __init__(value=0) |
| + set(value: int): void |
| + get(): int
    | called by
  main.py |
+----+
| + main(): void |
+----+
```