### Testing

### Add instruction into instruction memory

**Purpose:** Checks for successful addition of instructions into instruction memory.

**Configuration:** Include an s-record to place instructions into instruction memory.

A number and a number

Description automatically generated with medium confidence

**Expected Results:** The S1 s-record will be saved starting at memory location 0x1000.

**Actual results:** The instructions save as expected.



### Add data into data memory

**Purpose:** Checks for successful addition of data into data memory.

**Configuration:** Include an s-record to place instructions into instruction memory.

A number and a number

Description automatically generated with medium confidence

**Expected Results:** The S2 s-record will be saved starting at memory location 0x40.

**Actual results:** The instructions save as expected,



### When length of the record exceeds what is indicated by record

**Purpose:** Checks for if the loader stops reading records at indicated record length.

**Configuration:** Add more data bytes than what is expected to the second record.

A number and a number

Description automatically generated with medium confidence

**Expected Results:** The memory will not save the additional 0x11 data bytes.

**Actual results:** The instructions save as expected.



### When length of the record is less than what is indicated by record

**Purpose:** Checks for how program handles an s-record that is smaller than expected.

**Configuration:** Removed four data bytes from the second record.

A black text on a white background

Description automatically generated

**Expected Results:** The loader will look for the additional bytes from the following records.

**Actual results:** The counter behaved as expected.



### Identifies no errors with checksum

**Purpose:** Checks for the loader successfully comparing each record’s contents with its checksum.

**Configuration:** All s-records loaded in are valid.

**Expected Results:** The loader will print a success statement after xme file is loaded.

**Actual results:** The loader behaves as expected.

A screen shot of a computer

Description automatically generated

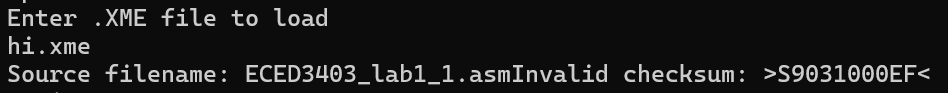
### Identifies errors with checksum

**Purpose:** Checks for the loader successfully identifying invalid records by comparing its checksum with its contents.

**Configuration:** An invalid s-record is loaded.

**Expected Results:** The loader will print a failure statement after xme file is loaded, identifying the invalid record.

**Actual results:** The loader behaves as expected.



### Name origin file from S0 record.

**Purpose:** Checks for if the loader can use the S0 record to name the origin file and print to the screen.

**Configuration:** Include a S0 record in the xme file.

**Expected Results:** the loader will print the origin file name to the screen.

**Actual results:** The loader behaves as expected.

A screen shot of a computer

Description automatically generated

### Overwriting memory

**Purpose:** Checks for if the loader can overwrite memory with newer data/instructions.

**Configuration:** Have two S1 records with similar memory locations in the xme file.

A number and numbers on a white background

Description automatically generated

**Expected Results:** the loader will overwrite the older record’s memory location with the newer record whenever they overlap.

**Actual results:** The loader behaves as expected.

