

System
loadRecords(filename) readFile(filename) append(Connections) ConnectionsArr = Connectoins[]

## Contract CO1 — loadRecords

### Operation:

loadRecords(filename: string)

### Cross References:

Use Case: *Load Train Route Data*

### Preconditions

- filename is a valid file path string.
- The file exists and is readable.
- The file contains valid train route data.
- The system instance is initialized.

### Postconditions

- **Instance Creation:** Record instances r1, r2, ..., rn are created for each valid route.
- **Instance Deletion:** Invalid records are skipped.
- **Association Formed:** ConnectionsArr is updated with the new Record instances.
- **Attribute Modification:** The number of successfully loaded records is returned.

## Contract CO2 — readFile

### Operation:

readFile(filename: string)

### Cross References:

Use Case: *Read Data File*

### Preconditions

- filename is a valid file path string.
- The file exists and has read permissions.
- The file format is compatible with system requirements.

### Postconditions

- **Instance Creation:** File content is read into memory.
- **Attribute Modification:** File data is parsed and validated.
- **Attribute Modification:** Raw data becomes available for further processing.
- **Association Broken:** The file handle is properly closed.

## Contract CO3 — append

### Operation:

append(Connections: Record)

### Cross References:

Use Case: *Add Route to Collection*

### Preconditions

- Connections is a valid Record instance.
- The record contains all required route information.
- ConnectionsArr is initialized.

### Postconditions

- **Association Formed:** Connections is added to ConnectionsArr.
- **Attribute Modification:** The size of ConnectionsArr increases by 1.
- **Association Formed:** The new Record becomes accessible within the collection.

