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Task for Junior Software Engineer (python)

1. I have imported 3 needed libraries for this task.

1. os – for importing text file
2. logging for providing information and error reporting.
3. namedtuple – for making immutable easy access for field names for each record type.

2. Creating not changing information like length of each line, records ID and currencies.

3. Creating **logging** for informing during the execution of the code, capturing errors and events.

4. Creating **FixedWidthFile** class.

1) **read\_file** – reads file line by line. Uses field\_id to to determine type of record in each line. Depending from type of the record calls parsing function. Returns namedtupe with organized fields.

2) **Parsing functions** that parse each line, by given structure and checking validation. While not being valid, uses logging error function to inform about bug in fixed with file structure.

3) Formatting functions that that takes parsed namedtuple to reparsing we can say. Using string functions zfill() to fill zeros and ljust() for making spaces.

4) **Write\_file** – takes list of records and writes the back to fixed with file. Using formatting functions depending from their field\_id.

5. FixedWithCLI class:

1) Inittializing FixedWidthFile class as instance.

2) **get\_field\_value** – reads file and check specific information checking to send information from a given record type. If it doesn’t exist, it sends none.

3) **change\_field\_value –** reads file and updates specified field in records list. Then rewrites everything back.

4) **add\_transaction –** creates new transaction by given 3 variables and adds in records before footer. Rewrites and updates file.

5) **validate\_file\_structure** – checks that the first record is the header. Checks that the total counter and control sum in the footer match the number of transactions and the sum of transaction amounts, respectively. Returns True if structure is valid, otherwise False.

6) **handle\_cli –** makes menu for user to make decisions by given options. Uses before made funstions to get, update, add, check fixed width file. And the last option to exit.