# File and Directory Manipulation Language (FDL)

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## **Motivation**

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#### FDL

- File and Directory Manipulation Language (FDL, pronounced "fiddle") provides a simple and intuitive syntax for managing file systems.
- Simple to code, simple to understand

# Language Overview

- "path" datatype allows users to create variables using the relative/absolute paths of files/directories
- "path" has built-in attributes: kind, name, type
- Special operators to copy/move files from one directory to another
- Users can iterate through files/subdirectories in a directory with a unique for loop
- The built-in list data structure allows users to conveniently store and access groups of files/directories.

## **Introduction to FDL**

The following program copies a file from one specified location to a destination directory:

```
def int main()
    path src = "./sample_dir/sample_file.pdf"
    path dest = "./test"
    dest <- src
    return 0
end</pre>
```

Within the main method, the path variable, 'src', is initialized to the file path of a file that we wish to copy. The file path of the directory into which we wish to copy 'src' is stored in the path variable 'dest'. The copy operator, '<-' is then called, and a copy of the src file will now exist in both the src location of the file system, as well as in the dest location.

#### Example

If we wish to do more than copy just one file, we can place the copy operation into a loop that iterates through a full directory, moving all files in the source directory to a target directory, as follows:

```
def int main()
       path src = "./sample_dir"
       path dest = "./test"
       path f
       for (f in dir)
    print "file path "
    print f
    if (f.kind == 0) then
      print f
      dest <- f
    end
       end
       return 1
end
```

#### Architecture







## Implementation

- Language features discussed and finalized (Lists, Paths, For loops, No punctuation ;{)
- Basic Skeleton first, Scanner, Parser, AST and Code Generator for "Hello World"
- Divided up features, kept code integrated by using Git branches
- Kept adding test cases as we added features

#### **Lessons Learned**

- Learning Curve
- Typechecking
- TESTING!
  - $\circ$  testing the work of others
  - capturing all possible situations (copy, preprocessor..)
- Version Control (git), Coding with a Team
- Consistency system-system
- Design Decisions

Thank you