Implanted type errors in Pandoc for evaluating Eclectic

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The Pandoc program contains 75541 lines of code across 211 modules, with 14 modules containing over 1000 lines.

1 Lines of Code < 150

1.1 Program 1 Error 1

Listing 1: Error 1

```
        insert key value setMap = M.insertWith S.union value (S.singleton value)
            setMap
-- Should be: insert key value setMap = M.insertWith S.union key (S.singleton value)
    setMap
```

Location: /src/Text/Pandoc/Readers/Odt/Generic/SetMap.hs
Error Line: 29

1.2 Program 1 Error 2

Listing 2: Error 2

```
        fromList = foldl (uncurry insert) empty
-- Should be: fromList = foldr (uncurry insert) empty
```

Location: /src/Text/Pandoc/Readers/Odt/Generic/SetMap.hs
Error Line: 26

1.3 Program 2 Error 3

Listing 3: Error 3

```
        fpExists <- fp
-- Should be:  fpExists <- fileExists fp
```

Location: /src/Text/Pandoc/Filter/Path.hs
Error Line: 27

1.4 Program 2 Error 4

Listing 4: Error 4

```
        _ -> return fpExists
-- Should be:  _ -> return fp
```

Location: /src/Text/Pandoc/Filter/Path.hs
Error Line: 37

1.5 Program 3 Error 5

Listing 5: Error 5

```
        let blks' = walk blks fixDisplayMath
-- Should be: let blks' = walk fixDisplayMath blks
```

Location: /src/Text/Pandoc/Writers/Powerpoint.hs
Error Line: 41

1.6 Program 3 Error 6

Listing 6: Error 6

```
        let archv = presentationToArchive opts pres
-- Should be:  archv <- presentationToArchive opts pres
```

Location: /src/Text/Pandoc/Writers/Powerpoint.hs
Error Line: 44

1.7 Program 4 Error 7

Listing 7: Error 7

```
let format = case args of
            (x:_) -> True -- Added in this line
            (x:_) -> x
```

Location: /src/Text/Pandoc/Filter/Lua.hs
Error Line: 35

1.8 Program 4 Error 8

Listing 8: Error 8

```
        forceResult fp eitherResult = case fp of
-- Should be  forceResult fp eitherResult = case eitherResult of
```

Location: /src/Text/Pandoc/Filter/Lua.hs
Error Line: 46

1.9 Program 5 Error 9

Listing 9: Error 9

```
            | n < least && nonHOrHR x = go n x
-- Should be            | n < least && nonHOrHR x = go n xs
```

Location: /src/Text/Pandoc/Slides.hs
Error Line: 23

1.10 Program 5 Error 10

Listing 10: Error 9

```
            prepSlides = ensureStartWithH . splitHrule .
                extractRefsHeader
-- Should be            prepSlides slideLevel = ensureStartWithH . splitHrule .
    extractRefsHeader
```

Location: /src/Text/Pandoc/Slides.hs
Error Line: 33

1.11 Program 6 Error 11

Listing 11: Error 9

```
              parsed <- flip runReaderT def
-- Should be   parsed <- flip runReaderT def $
```

Location: /src/Text/Pandoc/Readers/Org.hs
Error Line: 37

1.12 Program 6 Error 12

Listing 12: Error 9

```
              (T.unpack (s crFilter) ++ "\n\n")
-- Should be   (T.unpack (crFilter s) ++ "\n\n")
```

Location: /src/Text/Pandoc/Readers/Org.hs
Error Line: 39

1.13 Program 7 Error 13

Listing 13: Error 13

```
              mkFallback str mt = Str (delim ++ str ++ delim)
-- Should be   mkFallback mt str = Str (delim ++ str ++ delim)
```

Location: /src/Text/Pandoc/Writers/Math.hs
Error Line: 33

1.14 Program 7 Error 14

Listing 14: Error 13

```
              return (Left mkFallback mt str)
-- Should be   return (Left $ mkFallback mt str)
```

Location: /src/Text/Pandoc/Writers/Math.hs
Error Line: 49

1.15 Program 8 Error 15

Listing 15: Error 13

```
              foldOrElse Nothing $ map (styles) lookupProps
-- Should be   foldOrElse Nothing $ map (`lookup` styles) lookupProps
```

Location: /src/Text/Pandoc/CSS.hs
Error Line: 58

1.16 Program 8 Error 16

Listing 16: Error 13

```
              Left _     -> [[]]
-- Should be   Left _     -> []
```

Location: /src/Text/Pandoc/CSS.hs
Error Line: 50

1.17 Program 9 Error 17

Listing 17: Error 17

```
                        in  UTF8.toString readDataFile fname
-- Should be            in  UTF8.toString <$> readDataFile fname
```

Location: /src/Text/Pandoc/Template.hs
Error Line: 56

1.18 Program 9 Error 18

Listing 18: Error 18

```
                        let format = takeWhile ('notElem' ("+-")) writer -- strip
                            off extensions
-- Should be            let format = takeWhile ('notElem' ("+-" :: String)) writer
    -- strip off extensions
```

Location: /src/Text/Pandoc/Template.hs
Error Line: 36

1.19 Program 10 Error 19

Listing 19: Error 19

```
                        -> PandocIO Pandoc
-- Should be            -> Pandoc
```

Location: /src/Text/Pandoc/Filter.hs
Error Line: 48

1.20 Program 10 Error 20

Listing 20: Error 20

```
                        let expandedFilters = mapM expandFilterPath filters
-- Should be            expandedFilters <- mapM expandFilterPath filters
```

Location: /src/Text/Pandoc/Filter.hs
Error Line: 51

1.21 Program 11 Error 21

Listing 21: Error 21

```
                        concat <$> inQuotes (try (char '"'))
-- Should be            concat <$> manyTill inQuotes (try (char '"'))
```

Location: /src/Text/Pandoc/Readers/Docx/Fields.hs
Error Line: 47

1.22 Program 11 Error 22

Listing 22: Error 22

```
                              switches <- spaces many hyperlinkSwitch
-- Should be                  switches <- spaces *> many hyperlinkSwitch
```

Location: /src/Text/Pandoc/Readers/Docx/Fields.hs
Error Line: 69

1.23 Program 12 Error 23

Listing 23: Error 23

```
                        formatFromFilePath :: FilePath -> String
-- Should be             formatFromFilePath :: FilePath -> Maybe String
```

Location: /src/Text/Pandoc/App/FormatHeuristics.hs
Error Line: 30

1.24 Program 12 Error 24

Listing 24: Error 24

```
                     case formatFromFilePath (x:xs) of
-- Should be          case formatFromFilePath x of
```

Location: /src/Text/Pandoc/App/FormatHeuristics.hs
Error Line: 25

1.25 Program 13 Error 25

Listing 25: Error 25

```
                           Lua.TypeString -> Lua.ltype key >>= \case
-- Should be                Lua.TypeString -> Lua.peek key >>= \case
```

Location: /src/Text/Pandoc/Lua/Marshaling/ReaderOptions.hs
Error Line: 68

1.26 Program 13 Error 26

Listing 26: Error 26

```
                        Lua.setmetatable (Lua.nthFromTop )
-- Should be            Lua.setmetatable (Lua.nthFromTop 2)
```

Location: /src/Text/Pandoc/Lua/Marshaling/ReaderOptions.hs
Error Line: 79

1.27 Program 14 Error 27

Listing 27: Error 27

```
                  hasImageExtension = takeExtension imageExtensions `elem` fp
-- Should be       hasImageExtension = takeExtension fp `elem` imageExtensions
```

Location: /src/Text/Pandoc/Readers/Org/Shared.hs
Error Line: 30

1.28 Program 14 Error 28

Listing 28: Error 28

```
                in all (\c -> isAlphaNum c || c `elem` (".-"::String))
-- Should be    in all (\c -> isAlphaNum c || c `elem` (".-"::String)) scheme
```

Location: /src/Text/Pandoc/Readers/Org/Shared.hs
Error Line: 51

1.29 Program 15 Error 29

Listing 29: Error 29

```
                loadStringAsPackage script pkgName = do
-- Should be    loadStringAsPackage pkgName script = do
```

Location: /src/Text/Pandoc/Lua/Packages.hs
Error Line: 72

1.30 Program 15 Error 30

Listing 30: Error 30

```
                dataDirScript moduleFile datadir = do
-- Should be    dataDirScript datadir moduleFile = do
```

Location: /src/Text/Pandoc/Lua/Packages.hs
Error Line: 82

1.31 Program 16 Error 31

Listing 31: Error 31

```
                then Just $ writerColumns
-- Should be    then Just $ writerColumns opts
```

Location: /src/Text/Pandoc/Writers/OPML.hs
Error Line: 38

1.32 Program 16 Error 32

Listing 32: Error 32

```
                elementToOPML (Sec _ _num _ title elements) opts = do
-- Should be    elementToOPML opts (Sec _ _num _ title elements) = do
```

Location: /src/Text/Pandoc/Writers/OPML.hs
Error Line: 68

1.33 Program 17 Error 33

Listing 33: Error 33

```
                setGlobals = map setGlobal
-- Should be    setGlobals = mapM_ setGlobal
```

Location: /src/Text/Pandoc/Lua/Global.hs
Error Line: 46

1.34 Program 17 Error 34

```
              indexLazyPandoc field (LazyPandoc (Pandoc meta blks)) = 1 <$
-- Should be   indexLazyPandoc (LazyPandoc (Pandoc meta blks)) field = 1 <$
```

Location: /src/Text/Pandoc/Lua/Global.hs
Error Line: 87

1.35 Program 18 Error 35

```
              nsIDmap = foldl (uncurry $ flip M.insert) M.empty nsIDs
-- Should be    nsIDmap = foldr (uncurry $ flip M.insert) M.empty nsIDs
```

Location: /src/Text/Pandoc/Readers/Odt/Namespaces.hs
Error Line: 38

1.36 Program 18 Error 36

```
              nsIDmap = foldr (uncurry $ flip M.insert) M.empty
-- Should be    nsIDmap = foldr (uncurry $ flip M.insert) M.empty nsIDs
```

Location: /src/Text/Pandoc/Readers/Odt/Namespaces.hs
Error Line: 38

2 Lines of Code > 100 < 500

2.1 Program 19 Error 37

```
              foldS a = ArrowState $ \(s,f) -> foldl a' (s,mempty) f
-- Should be    foldS a = ArrowState $ \(s,f) -> foldr a' (s,mempty) f
```

Location: /src/Text/Pandoc/Readers/Odt/Arrows/State.hs
Error Line: 111

2.2 Program 19 Error 38

```
                        iterateS' a = ArrowState $ \(s,f) -> foldl (a' s) (s,Right
                           mzero) f
-- Should be            iterateS' a = ArrowState $ \(s,f) -> foldr (a' s) (s,Right
    mzero) f
```

Location: /src/Text/Pandoc/Readers/Odt/Arrows/State.hs
Error Line: 137

2.3 Program 20 Error 39

```
                     Lua.call num
-- Should be          Lua.call num 1
```

Location: /src/Text/Pandoc/Lua/Util.hs
Error Line: 74

2.4 Program 20 Error 40

```
                    result <- pcallWithTraceback nresults
-- Should be        result <- pcallWithTraceback nargs nresults
```

Location: /src/Text/Pandoc/Lua/Util.hs
Error Line: 145

2.5 Program 21 Error 41

```
            genericExportSetting settingIdentifier setter = try $ do
-- Should be    genericExportSetting optionParser settingIdentifier setter = try $
    do
```

Location: /src/Text/Pandoc/Readers/Org/ExportSettings.hs
Error Line: 73

2.6 Program 21 Error 42

```
            ignoredSetting = try (() <$ string s <* char ':' <* many1
                nonspaceChar)
-- Should be    ignoredSetting s = try (() <$ string s <* char ':' <* many1
    nonspaceChar)
```

Location: /src/Text/Pandoc/Readers/Org/ExportSettings.hs
Error Line: 145

2.7 Program 22 Error 43

```
                    then ([], bodyRows)
-- Should be        then ([], map toCells bodyRows)
```

Location: /src/Text/Pandoc/Readers/Haddock.hs
Error Line: 90

2.8 Program 22 Error 44

```
            Para (map extractContents xs) : consolidatePlains' ys
-- Should be            Para (concatMap extractContents xs) :
    consolidatePlains' ys
```

Location: /src/Text/Pandoc/Readers/Haddock.hs
Error Line: 101

2.9 Program 23 Error 45

```
        = case parseFormatSpec of
-- Should be        = case parseFormatSpec s of
```

Location: /src/Text/Pandoc/Writers.hs
Error Line: 178

2.10 Program 23 Error 46

```
              writeJSON _ = return . UTF8.toText . BL.toStrict
-- Should be              writeJSON _ = return . UTF8.toText . BL.toStrict . encode
```

Location: /src/Text/Pandoc/Writers.hs
Error Line: 187

2.11   Program 24 Error 47

```
      constructorsFor x = map (dataTypeConstrs x)
-- Should be           constructorsFor x = map show (dataTypeConstrs x)
```

Location: /src/Text/Pandoc/Lua/Filter.hs
Error Line: 165

2.12   Program 24 Error 48

```
tryFilter x (LuaFilter fnMap) =
-- Should be       tryFilter (LuaFilter fnMap) x =
```

Location: /src/Text/Pandoc/Lua/Filter.hs
Error Line: 110

2.13   Program 25 Error 49

```
blocksToDefinitions = blocksToDefinitions' []
-- Should be       blocksToDefinitions = blocksToDefinitions' [] []
```

Location: /src/Text/Pandoc/Readers/Docx/Lists.hs
Error Line: 204

2.14   Program 25 Error 50

```
plainParaInlines (Plain ils) = [ils]
-- Should be      plainParaInlines (Plain ils) = ils
```

Location: /src/Text/Pandoc/Readers/Docx/Lists.hs
Error Line: 153

2.15   Program 26 Error 51

```
  , optVariables           :: (String,String)-- ^ Template variables to set
-- Should be     , optVariables          :: [(String,String)]-- ^ Template variables
    to set
```

Location: /src/Text/Pandoc/App/Opt.hs
Error Line: 55

2.16   Program 26 Error 52

```
, optExtractMedia        = []
-- Should be        , optExtractMedia       = Nothing
```

Location: /src/Text/Pandoc/App/Opt.hs
Error Line: 177

2.17 Program 27 Error 53

```
    then opts
-- Should be          then addHeaderIdentifiers opts
```

Location: /src/Text/Pandoc/Readers/CommonMark.hs
Error Line: 35

2.18 Program 27 Error 54

```
 case break (=='':'') of
-- Should be        case break (=='':'') s of
```

Location: /src/Text/Pandoc/Readers/CommonMark.hs
Error Line: 52

2.19 Program 28 Error 55

```
   (s :< sq) -> (singleton sq, Many s)
-- Should be        (s :< sq) -> (singleton s, Many sq)
```

Location: /src/Text/Pandoc/Readers/Docx/Combine.hs
Error Line: 140

2.20 Program 28 Error 56

```
unstackInlines ms = case ms ilModifier of
-- Should be     unstackInlines ms = case ilModifier ms of
```

Location: /src/Text/Pandoc/Readers/Docx/Combine.hs
Error Line: 104

2.21 Program 29 Error 57

```
highlight formatter syntaxmap (ident, classes, keyvals) rawCode =
-- Should be    highlight syntaxmap formatter (ident, classes, keyvals) rawCode =
```

Location: /src/Text/Pandoc/Highlighting.hs
Error Line: 69

2.22 Program 29 Error 58

```
 in case (map (`lookupSyntax` syntaxmap) classes') msum of
-- Should be      in case msum (map (`lookupSyntax` syntaxmap) classes') of
```

Location: /src/Text/Pandoc/Highlighting.hs
Error Line: 84

2.23 Program 30 Error 59

```
 let source = concat ts
-- Should be      let source = mconcat ts
```

Location: /src/Text/Pandoc/Readers/Ipynb.hs
Error Line: 78

2.24 Program 30 Error 60

```
notebookToPandoc notebook opts = do
-- Should be    notebookToPandoc opts notebook = do
```

Location: /src/Text/Pandoc/Readers/Ipynb.hs
Error Line: 58

2.25 Program 31 Error 61

```
writeCustom opts luaFile doc@(Pandoc meta _) = do
-- Should be    writeCustom luaFile opts doc@(Pandoc meta _) = do
```

Location: /src/Text/Pandoc/Writers/Custom.hs
Error Line: 92

2.26 Program 31 Error 62

```
    rendered <- docToCustom doc opts
-- Should be    rendered <- docToCustom opts doc
```

Location: /src/Text/Pandoc/Writers/Custom.hs
Error Line: 103

2.27 Program 32 Error 63

```
writeIpynb d opts = do
-- Should be   writeIpynb opts d = do
```

Location: /src/Text/Pandoc/Writers/Ipynb.hs
Error Line: 44

2.28 Program 32 Error 64

```
  (mmap, meta) <- foldl go mempty $ consolidateAdjacentRawBlocks bs
-- Should be   (mmap, meta) <- foldM go mempty $ consolidateAdjacentRawBlocks bs
```

Location: /src/Text/Pandoc/Writers/Ipynb.hs
Error Line: 201

2.29 Program 33 Error 65

```
  let  msg panErr = liftIO $ E.throwIO $ PandocAppError msg
-- Should be    let panErr msg = liftIO $ E.throwIO $ PandocAppError msg
```

Location: /src/Text/Pandoc/App/OutputSettings.hs
Error Line: 232

2.30 Program 33 Error 66

```
  case  mWriter mEngine go of
-- Should be      case go mWriter mEngine of
```

Location: /src/Text/Pandoc/App/OutputSettings.hs
Error Line: 233

2.31 Program 34 Error 67

```
  case fromAttrib t "src" of
-- Should be      case fromAttrib "src" t of
```

Location: /src/Text/Pandoc/SelfContained.hs
Error Line: 72

2.32 Program 34 Error 68

```
                    then cssURLs raw
-- Should be                     then cssURLs d raw
```

Location: /src/Text/Pandoc/SelfContained.hs
Error Line: 217

2.33 Program 35 Error 69

```
                contents <- inlines inlineListToXWiki
-- Should be       contents <- inlineListToXWiki inlines
```

Location: /src/Text/Pandoc/Writers/XWiki.hs
Error Line: 102

2.34 Program 35 Error 70

```
escapeXWikiString s = foldl (uncurry replace) s $ zip ["--", "**", "//", "^^", ",,",
    "~~"] ["~-~-", "~*~*", "~/~/", "~^~^", "~,~,", "~~"]
-- Should be   escapeXWikiString s = foldr (uncurry replace) s $ zip ["--", "**", "//",
    "^^", ",,", "~~"] ["~-~-", "~*~*", "~/~/", "~^~^", "~,~,", "~~"]
```

Location: /src/Text/Pandoc/Writers/XWiki.hs
Error Line: 265

2.35 Program 36 Error 71

```
  (elemOrder, parts) <- unzip <$> many ((,) <$> placeholder <$> expansionPart)
-- Should be    (elemOrder, parts) <- unzip <$> many ((,) <$> placeholder <*>
    expansionPart)
```

Location: /src/Text/Pandoc/Readers/Org/Meta.hs
Error Line: 253

2.36 Program 36 Error 72

```
  setEmphasisPreChar st csMb =
-- Should be   setEmphasisPreChar csMb st =
```

Location: /src/Text/Pandoc/Readers/Org/Meta.hs
Error Line: 198

2.37 Program 37 Error 73

BROKEN

```
     st { orgStateIncludeFiles = drop 1 $ orgStateIncludeFiles }
-- Should be     st { orgStateIncludeFiles = drop 1 $ orgStateIncludeFiles st }
```

Location: /src/Text/Pandoc/Readers/Org/ParserState.hs
Error Line: 158

2.38   Program 37 Error 74

BROKEN

```
     , orgStateEmphasisCharStack :: Char
-- Should be   , orgStateEmphasisCharStack :: [Char]
```

Location: /src/Text/Pandoc/Readers/Org/ParserState.hs
Error Line: 95

2.39   Program 38 Error 75

BROKEN

```
    isEnabled opts ext = ext `extensionEnabled` getExtensions opts
-- Should be  isEnabled ext opts = ext `extensionEnabled` getExtensions opts
```

Location: /src/Text/Pandoc/Options.hs
Error Line: 230

2.40   Program 38 Error 76

BROKEN

```
                   , writerIdentifierPrefix = [""]
-- Should be              , writerIdentifierPrefix = ""
```

Location: /src/Text/Pandoc/Options.hs
Error Line: 206

2.41   Program 39 Error 77

```
       findAttrE e q = mkE "findAttr" $ findAttr q e
-- Should be   findAttrE q e = mkE "findAttr" $ findAttr q e
```

Location: /src/Text/Pandoc/Readers/EPUB.hs
Error Line: 274

2.42   Program 39 Error 78

```
      let namespaces = attrToNSPair mapMaybe (elAttribs docElem)
-- Should be    let namespaces = mapMaybe attrToNSPair (elAttribs docElem)
```

Location: /src/Text/Pandoc/Readers/EPUB.hs
Error Line: 178

3   Lines of Code > 2000

3.1   Program 100 Error 79

```
                    trace (show 60 $ take $ B.toList res)
-- Should be        trace (take 60 $ show $ B.toList res)
```

Location: /src/Text/Pandoc/Readers/LaTeX.hs
Error Line: 2288

3.2   Program 100 Error 80

```
                    rawInlineOr fallback name' = do
-- Should be     rawInlineOr name' fallback = do
```

Location: /src/Text/Pandoc/Readers/LaTeX.hs
Error Line: 1269