Compiler homework (Type checking)

You are tasked with creating a type checker using Python and ANTLR. The type checker that is required of you is a program that receives an input and outputs the type of the input provided. If an input shouldn't be accepted, the type checker should output a type error message.

Project is due on Monday, 8th of April 2024

The grammar for this project is included inside the zip file

Expression evaluation guide

Expression	Output
String + (Integer or Float)	String
String (* or / or -) (String or Integer or float)	Error
Integer (+ or / or *) Integer	Integer
Integer / Integer	Float or Integer (for simplicity, you can Output Float regardless of whether the result of the division is Integer or Float)
Integer (+ or – or * or /) Float	Float
Float (+ or – or * or /) Integer	Float
Float (+ or – or * or /) Float	Float
Integer (+ or – or * or /) String	Error
Float (+ or – or * or /) String	Error

Example inputs and their corresponding output:

Input	Output
2 + 3*1.2	Float ✓
"hello" +2	String ✓
"compiler" *2	Type error: String cannot be multiplied ✓
"students" / 1.5	Type error: String cannot be divided ✓
2+3*4	Integer
2+ "IUST"	Type error: String cannot be concatenated to an Integer ✓
"developer" + 1.2*3 +"25"	String ✓