

Task:

1-User Input in Dart:

1. `stdin.readLineSync()`:

-read a line from user as a `String`

2. `int.Parse(stdin.readLineSync())`:

-to Convert String input into an Int number

3. `double.parse(stdin.readLineSync())`

-to Convert String input into a double number

2- Errors type In programming:

1. Syntax Errors

Mistakes in the structure of the code that prevent it from running at all.

Example: Missing parentheses, misspelled keywords.

2. Runtime Errors

Errors that occur *while* the program is running, even though the code is syntactically correct.

Example: Dividing by zero, accessing undefined variables.

3. Logical Errors

The program runs but produces incorrect results because the logic is wrong.

Example: Using the wrong formula or incorrect conditions.

4. Semantic Errors

The code is valid syntactically but doesn't do what the programmer intended.

Example: Using the wrong variable or function for the intended behavior.

5. Compilation Errors

Errors found by the compiler before running the program, common in languages like Java or C++.

Example: Type mismatches, missing imports.

6. Logical Exceptions / Domain Errors

Errors that occur when input values break rules of the operation.

Example: Taking the square root of a negative number.

7. Resource Errors

Caused by limited system resources.

Example: Out of memory, too many open files.

Aspect	Semantic Error Example	Logical Error Example
What's wrong	Misused the formula (meaning)	Wrong real-world rule (reasoning)
Valid code?	Yes	Yes
Does it run?	Yes	Yes
Root cause	Wrong expression for intended idea	Wrong logic or factual rule