

CSE 341 HW3

How to Run:

To be able to run the program make command can be used. Then gpp_interpreter will be produced.

gpp_interpreter can be run both using file or without file as shown:

```
./gpp_interpreter
```

```
./gpp_interpreter test.gpp
```

2 test cases were provided named test.gpp and test2.gpp.

General Information:

To use an identifier in expressions such as $(+ x y)$, they must first be defined using the set command, as illustrated below:

```
( set x 3b1)
```

```
( set y 4b1)
```

Elements are stored in the id_table struct for efficient retrieval and manipulation.

Valuefs are evaluated using the following functions:

- add_valuef
- sub_valuef
- mul_valuef
- div_valuef

These functions calculate Valuefs and return them correctly by employing the reduce_fraction function. The reduce_fraction function simplifies fractions, transforming expressions like $14b^2$ into $7b^1$.

Example:

```
( + 4b2 6b2 )  
( set x 3b7 )  
( set y 4b5 )  
( + x y )  
( def sum x y ( + x y ) )  
( exit )
```

Output:

```
5b1  
Set x to 3b7  
Set y to 4b5  
43b35  
#function
```

Example 2:

```
( * 2b3 6b7 )  
( * 4b1 6b5 8b1 )
```

Output 2:

```
4b7  
AN ERROR OCCURED syntax error
```

Whenever an error occurs, the program ends.