Problem Set 9
Comp 301
Spring 2023
Week 10: 08.05.2023 - 12.05.2023

Instructions:

- Submit your answers to the Blackboard PS9 assignment until May 13th Saturday, at 23.59.
- Please use the code boilerplate, which includes several tests for you to see if your code is correct.
- Save your code and pdf file, zip it as `ID_username.zip` with your ID and username (Example: `1234567_oarpaci18.zip`), and submit this ZIP file.
- Read the questions carefully. Good luck!

Problem 1: In class you already seen that below program gives -1 as result:

```
let g = let counter = newref(0)
   in proc (dummy)
     begin
       setref(counter, -(deref(counter), -1));
       deref(counter)
     end
in let a = (g 11)
   in let b = (g 11)
      in -(a,b)
```

But below code gives a different result. Explain why these two programs give different results and indicate the result of the program.

```
let g = proc (dummy)
       let counter = newref(0)
       in begin
       setref(counter, -(deref(counter), -1));
       deref(counter)
       end
       in let a = (g 11)
        in let b = (g 11)
           in -(a,b)
```

Problem 2: Modify the interp.scm so that a setref-exp returns the old contents of the location.

Problem 3: [1]: Implement the store in constant time by representing it as a Scheme vector. You can look at the documentation of Scheme vectors.

[1] EOPL Exercise 4.9