CvP - Homework 5

- Deadline: October 12, at the start of the werkcollege.
- Your solution can typed (preferred!) or handwritten.
- You can submit your solution in person or via liacscvp2018@gmail.com
- Don't forget your name and student number.

Chapters 5 & 6

1. In what way are reserved words better than keywords?
2. What is an alias?
3. What are the l-value and the r-vale of a variable?
4. Define static binding and dynamic binding.
5. Define lifetime, scope, static scope, and dynamic scope.
6. How is an appearance of the name of a non-local variable matched with its target variable declaration in a static-scoped program?
7. How is an appearance of the name of a non-local variable matched with its target variable declaration in a dynamic-scoped program?
8. Assume the following JavaScript program was interpreted using static-scoping rules. What value of `x` is displayed in function `sub1`? Under dynamic scoping rules, what value of `x` is displayed in function `sub1`?

```
var x;
function sub1() {
  document.write("x = " + x + "<br />");
}
function sub2() {
  var x;
  x = 10;
  sub1();
}
x = 5;
sub2();
```

9. Define static, fixed stack-dynamic, stack-dynamic, fixed heap-dynamic, and heap-dynamic arrays. What are the advantages of each?

10. What is the primary difference between a record and a tuple?

11. What are the two common problems with pointers?

12. What is the difference between a pointer and a reference (e.g., in C++)?

13. What are the two major schemes for reclaiming unused allocated memory?

14. Explain two methods used to avoid the dangling pointer problem.

15. What is name type equivalence? What are its advantages and disadvantages?

16. What is structure type equivalence? What are its advantages and disadvantages?

17. What is type coercion?

18. What is short-circuit evaluation?

19. What is functional side effect?

20. Define operator precedence and operator associativity.