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Homework 10

Question 10.9

In OCaml, data type of a parameter can be implicit. Compared the meaning of a function call in C-lite, which requires explicit data type declaration with the parameter, this must be checked at both compilation and runtime. The reason for the requirement of a runtime check is due to polymorphic function, which can potentially accept different data types for the same parameter when the function is called with different arguments.

Question 10.10

Function → let *Identifier Parameters* = *Body* ;;
Parameters→[*Identifier*]|[*Identifier*:*type*] | [*Identifier* : (*Type CollectionType*)
Identifier → [a-zA-z0-9]
Type→int | bool | string |char
CollectionType→list | array

1. Make a new activation record, add f's params and locals to it.
2. Evaluate each of call c's arguments. If a polymorphic parameter is specified, assure that the call fits the polymorphic scheme as used in the function.
3. Assign the value of each argument to a corresponding parameter and place in activation record.
4. Add to the activation record a result variable identical to the function's name and type.
5. Push the activation record onto the runtime stack.
6. Interpret the statements in the body of the function.
7. Pop the activation record off of the runtime stack.
8. Return the value of the function.