Updated Value Categories

C++ 17 introduces some updated value categories. This part helps familiarize with them. Read below to find out more!

WE'LL COVER THE FOLLOWING

In C++98/03, we had two basic categories of expressions:

- `lvalue` - an expression that can appear on the left-hand side of an assignment
- `rvalue` - an expression that can appear only on the right-hand side of an assignment

C++11 extended this taxonomy (due to the move semantics), with three more categories:

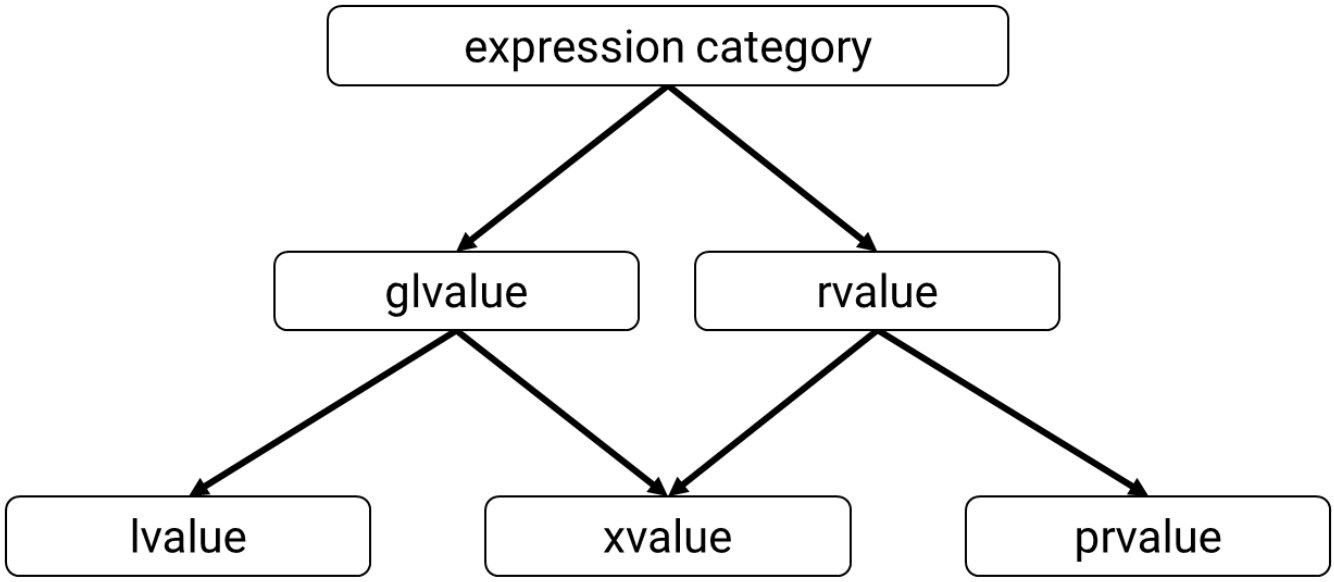
- `xvalue` - an eXpiring `lvalue`
- `prvalue` - a pure `rvalue`, an `xvalue`, a temporary object or subobject, or a value that is not associated with an object.
- `glvalue` - a generalised `lvalue`, which is an `lvalue` or an `xvalue`

Examples:

```
std::string str;
str;            // lvalue
42;             // prvalue
str + "10"      // prvalue
std::move(str); // xvalue
```

Let's look at the Diagram

The tree chart below gives a better overview of the categories:



There are three core categories (below with colloquial “definitions”):

- `lvalue` - an expression that has an identity, and which we can take the address of
- `xvalue` - "eXpiring `lvalue`" - an object that we can move from, which we can reuse. Usually, its lifetime ends soon
- `prvalue` - pure `rvalue` - something without a name, which we cannot take the address of, we can move from such expression

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Now that you’re familiar with **prvalue** and **lvalue**, in the next lesson, we will get into their further details.