Expression evaluation in Bake

- Arithmetic operations
- Ternary operators
- Expressions with variables

Bake files in the HCL format support expression evaluation, which lets you perform arithmetic operations, conditionally set values, and more.

Arithmetic operations

You can perform arithmetic operations in expressions. The following example shows how to multiply two numbers.

```
sum = 7*6

target "default" {
  args = {
    answer = sum
  }
}
```

Printing the Bake file with the `--print` flag shows the evaluated value for the `answer` build argument.

```
$ docker buildx bake --print
```

```
{
  "target": {
    "default": {
```

```
      "context": ".",
      "dockerfile": "Dockerfile",
      "args": {
        "answer": "42"
      }
    }
  }
}
```

Ternary operators

You can use ternary operators to conditionally register a value.

The following example adds a tag only when a variable is not empty, using the built-in `notequal` function.

```
variable "TAG" {}

target "default" {
  context="."
  dockerfile="Dockerfile"
  tags = [
    "my-image:latest",
    notequal("",TAG) ? "my-image:${TAG}": ""
  ]
}
```

In this case, `TAG` is an empty string, so the resulting build configuration only contains the hard-coded `my-image:latest` tag.

```
$ docker buildx bake --print
```

```
{
  "target": {
    "default": {
      "context": ".",
      "dockerfile": "Dockerfile",
      "tags": ["my-image:latest"]
```

```
    }
  }
}
```

Expressions with variables

You can use expressions with variables to conditionally set values, or to perform arithmetic operations.

The following example uses expressions to set values based on the value of variables. The `v1` build argument is set to "higher" if the variable `FOO` is greater than 5, otherwise it is set to "lower". The `v2` build argument is set to "yes" if the `IS_FOO` variable is true, otherwise it is set to "no".

```
variable "FOO" {
  default = 3
}

variable "IS_FOO" {
  default = true
}

target "app" {
  args = {
    v1 = FOO > 5 ? "higher" : "lower"
    v2 = IS_FOO ? "yes" : "no"
  }
}
```

Printing the Bake file with the `--print` flag shows the evaluated values for the `v1` and `v2` build arguments.

```
$ docker buildx bake --print app
```

```
{
  "group": {
    "default": {
      "targets": ["app"]
    }
  },
  "target": {
```

```
    "app": {
      "context": ".",
      "dockerfile": "Dockerfile",
      "args": {
        "v1": "lower",
        "v2": "yes"
      }
    }
  }
}
```

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