Ada Cheatsheet

This cheatsheet provides a brief overview of Ada's unique features and syntax, including code blocks for variables, functions, loops, conditionals, file manipulation, and more.

Ada is a high-level, strongly typed programming language that is used in safety-critical systems, such as aerospace and defense. It is known for its strong typing, modularity, and support for concurrency.

This cheatsheet is designed to serve as a quick reference guide for Ada developers of all levels. It includes examples of common syntax and programming constructs, as well as a list of resources for further learning.

Unique Features

- High-level, strongly typed programming language
- Used in safety-critical systems, such as aerospace and defense
- Strong typing, modularity, and support for concurrency

Variables

```
-- declaring a variable
variable_name : data_type := value;

-- dynamic typing
variable_name : any := "string";
variable_name : any := 123;
```

Functions

```
-- defining a function
function function_name(parameter1 : data_type; parameter2 : data_type) return
return_type is
  -- function body
begin
  return value;
end function;

-- calling a function
variable_name := function_name(argument1, argument2);
```

Loops

```
-- for loop
for variable_name in range loop
  -- loop body
end loop;

-- while loop
while condition loop
```

```
   -- loop body
end loop;


-- loop through an array
for i in array_name'range loop
   -- loop body
end loop;
```

Conditionals

```
-- if statement
if condition then
   -- if body
elsif condition then
   -- else if body
else
   -- else body
end if;


-- ternary operator
variable_name := (condition) ? true_body : false_body;
```

File Manipulation

```
-- reading from a file
file_name : file_type;
line : string;
begin
   file_name := file_type("filename");
   while not end_of_file(file_name) loop
      readline(file_name, line);
      -- process line
   end loop;
   close(file_name);
end;


-- writing to a file
file_name : file_type;
begin
   file_name := file_type("filename", mode => out_file);
   put(file_name, "content");
   close(file_name);
end;
```

Resources

- Official Ada Website
- Ada Documentation

- [Ada Style Guide](#)