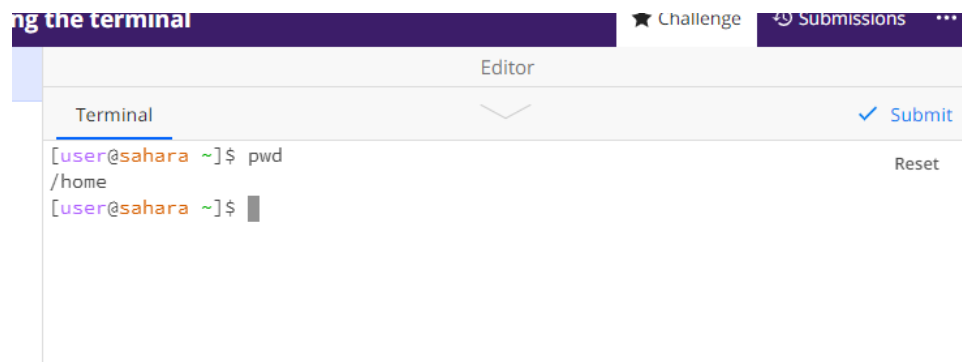


1.

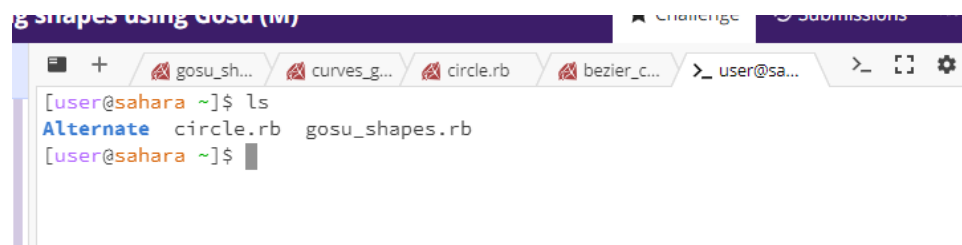
The pwd command prints out the current directory you are in



The screenshot shows a web-based terminal interface. At the top, there are tabs for 'ng the terminal', 'Challenge', and 'Submissions'. Below these is an 'Editor' tab. The main area is a 'Terminal' window with a prompt '[user@sahara ~]\$'. The user has entered 'pwd' and the output is '/home'. Below the terminal, there are buttons for 'Submit' (with a checkmark icon) and 'Reset'.

```
[user@sahara ~]$ pwd
/home
[user@sahara ~]$
```

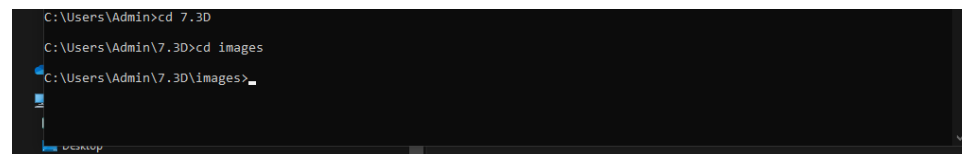
The ls command prints out the contents of a directory



The screenshot shows a web-based terminal interface with multiple tabs: 'gosu_sh...', 'curves_g...', 'circle.rb', and 'bezier_c...'. The active tab is 'user@sa...'. The terminal shows a prompt '[user@sahara ~]\$' followed by 'ls'. The output is 'circle.rb' and 'gosu_shapes.rb'. Below the terminal, there are buttons for 'Submit' and 'Reset'.

```
[user@sahara ~]$ ls
circle.rb  gosu_shapes.rb
[user@sahara ~]$
```

The cd command allows you to move between directories



The screenshot shows a terminal window with a black background. The prompt is 'C:\Users\Admin>'. The user has entered 'cd 7.3D' and the output is 'C:\Users\Admin\7.3D>'. The user has then entered 'cd images' and the output is 'C:\Users\Admin\7.3D\images>'. The terminal window has a scrollbar on the right side.

```
C:\Users\Admin>cd 7.3D
C:\Users\Admin\7.3D>cd images
C:\Users\Admin\7.3D\images>
```

2.

A person name uses the string value

A person's age in year use integer

A phone number use the string value

A temperature in Celsius suggest use float

The average age of a group of people need to use the float

Whether a person has eaten lunch use the Boolean value

3.

A string data type

Example the personal location

An integer data type

Example the number of the family member

A float data type

Example the scale of earthquake intensity

An Bollen data type

Example check the email is valid

4.

| Expression | Given | Value | Data Type |
|------------------|-------------------------|----------------|-----------|
| 5 | | 5 | Integer |
| True | | True | Boolean |
| a | a = 2.5 | 2.5 | Float |
| 1 + 2 * 3 | | 7 | Integer |
| a and FALSE | a = TRUE | True and False | Boolean |
| a or FALSE | a = TRUE | True or False | Boolean |
| a + b | a = 1 and b = 2 | 3 | Integer |
| 2 * a | a = 3 | 6 | Integer |
| a * 2 + b | a = 1.5 and b = 2 | 5 | Integer |
| a + 2 * b | a = 1.5 and b = 2 | 5.5 | Float |
| (a + b) * c | a = 1, b = 1, and c = 5 | 10 | Integer |
| "Fred" + "Smith" | | Fred Smith | String |
| a + "Smith" | a = "Wilma" | Wilma Smith | String |

5.

-Declaration of a variable in a computer programming language is a statement used to specify the variable name and its data type. Declaration tells the compiler about the existence of an entity in the program and its location. When you declare a variable, you should also initialize it.

- Initialization is the process of assigning a value to the Variable. Every programming language has its own method of initializing the variable. If the value is not assigned to the Variable, then the process is only called a Declaration.

6.

Parameters identify values that are passed into a function. For example, a function to add three numbers might have three parameters. A function has a name, and it can be called from other points of a program. When that happens, the information passed is called an argument. Modern programming languages typically allow functions to have several parameters.

In the following C++ example, int a and int b are parameters,

```
1  int addition (int a, int b)
2  {
3      int r;
4      r=a+b;
5      return r;
6  }
7
8
```

7.

LOCAL VARIABLES

Variables that are declared inside a function or block are local variables. They can be used only by statements that are inside that function or block of code. Local variables are not known to functions outside their own. Following is the example using local variables:

```
1  #include <iostream>
2  using namespace std;
3
4  int main ()
5  {
6      // Local variable declaration:
7      int a, b;
8      int c;
9
10     // actual initialization
11     a = 10;
12     b = 20;
13     c = a + b;
14
15     cout << c;
16
17     return 0;
18 }
```

GLOBAL VARIABLES

Global variables are defined outside of all the functions, usually on top of the program. The global variables will hold their type throughout the life-time of your program.

A global variable can be accessed by any function. That is, a global variable is available for use throughout your entire program after its declaration. Following is the example using global and local variables:

```
1  #include <iostream>
2  using namespace std;
3
4  // Global variable declaration:
5  int g;
6
7  int main ()
8  {
9      // Local variable declaration:
10     int a, b;
11
12     // actual initialization
13     a = 10;
14     b = 20;
15     g = a + b;
16
17     cout << g;
18
19     return 0;
20 }
```

8.

```
1  // C++ program to calculate average of array elements
2  #include <iostream>
3  using namespace std;
4
5  // Function that return average of an array.
6  double average(int a[], int n)
7  {
8      // Find sum of array element
9      int sum = 0;
10     for (int i=0; i<n; i++)
11         sum += a[i];
12
13     return (double)sum/n;
14 }
```

```
int main()
{
    int arr[] = {10, 2, 3, 4, 5, 6, 7, 8, 9};
    int n = sizeof(arr)/sizeof(arr[0]);

    cout << average(arr, n) << endl;
    return 0;
}
```

10.

```
int main ()
{
    int z;
    z = addition (5,3);
    if (z >10){
        cout << "Double Dights"
    }
    else{
        cout << "Single Dights"
    }
}
```