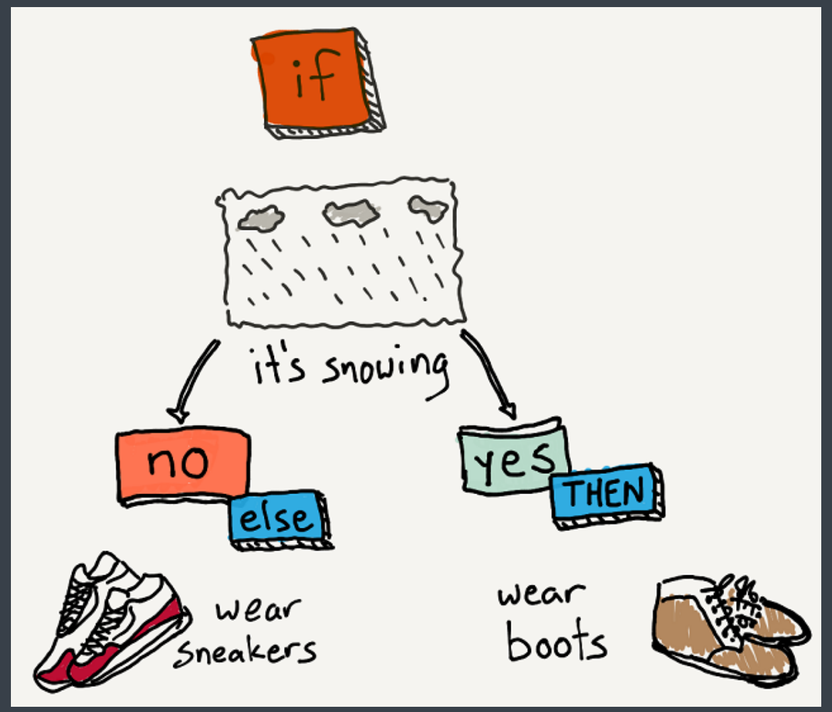
Decision Making

What is decision making ?

- The act or process of deciding something
- Based on certain criteria or conditions



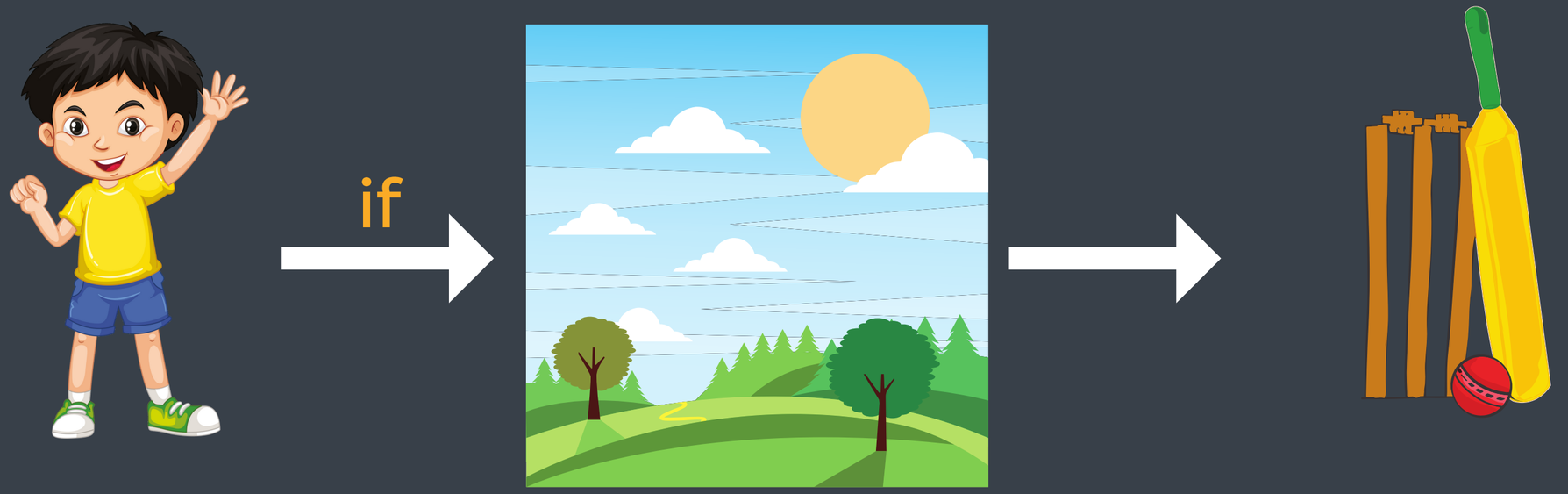
Conditional Statements

Conditional Statements

The most common conditional statements used for decision-making in programming are

- if
- if-else
- if-elif-else
- switch-case

If statement




```
if condition:
    # code to be executed if the condition is true
```

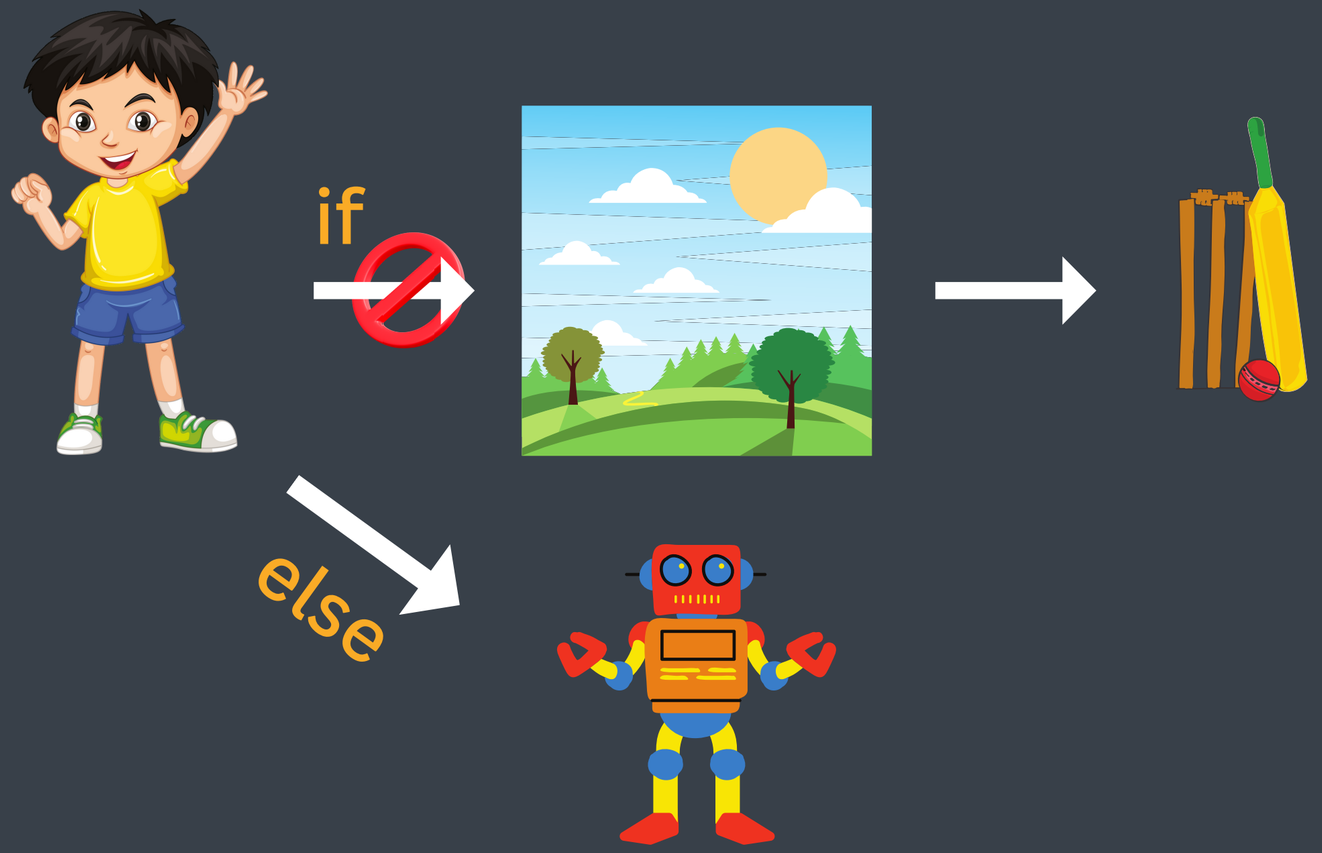
Syntax

The condition is an expression that evaluates to either True or False. If the condition is true, the indented block of code under the if statement is executed; otherwise, it is skipped.

python

```python
weather = "sunny"

if weather == "sunny":
    print("You can play with your favorite toy!")

print("Have fun!")
```

if-else Statement



Syntax

- If the condition is true, the code block under the if branch is executed, and the code block under the else branch is skipped.
- If the condition is false, the code block under the else branch is executed, and the code block under the if branch is skipped.

```
if condition:
    # code to be executed if the condition is true
else:
    # code to be executed if the condition is false
```

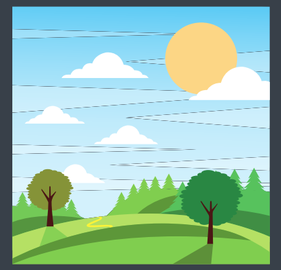
Example

python

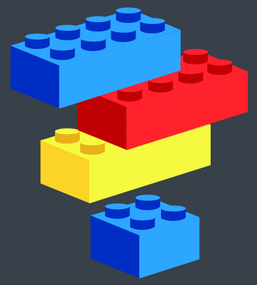
```python
weather = "rainy"

if weather == "sunny":
    print("You can play with your car toy.")
else:
    print("It's not sunny, so you can play with a different toy.")

print("Enjoy your day!")
```

if-elif-else Statement

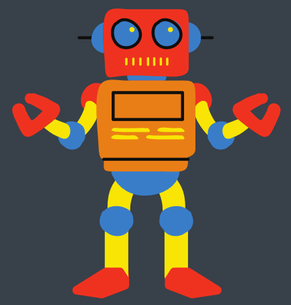
if



elif



else



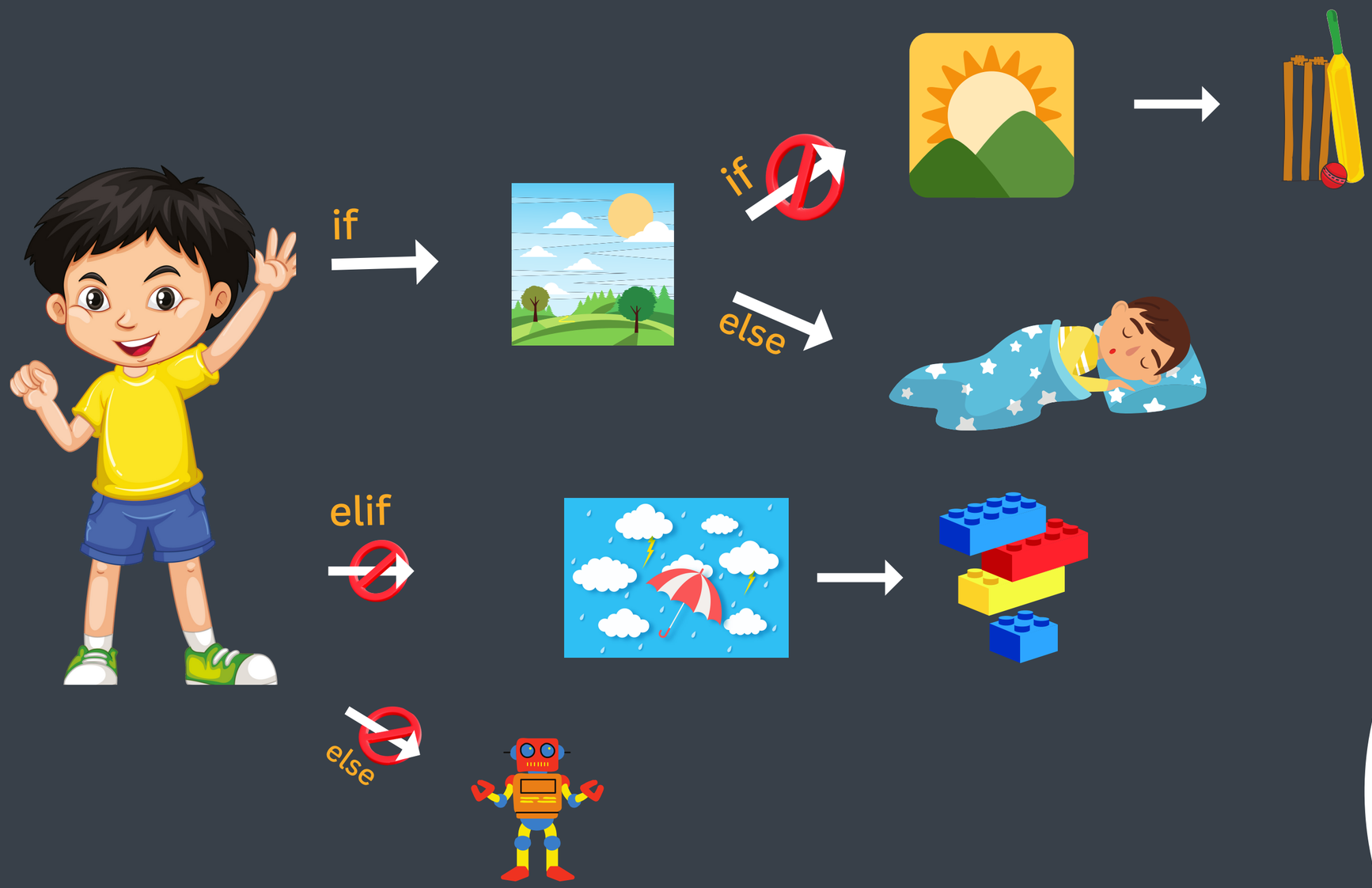
```
if condition1:
    # code to be executed if condition1 is true
elif condition2:
    # code to be executed if condition2 is true
elif condition3:
    # code to be executed if condition3 is true
else:
    # code to be executed if none of the conditions are true
```

Example

python

```python
weather = "snowy"
time_of_day = "night"

if weather == "sunny":
    print("You can play with your car toy.")
elif weather == "rainy":
    print("You can play with your boat toy.")
elif weather == "snowy" and time_of_day == "night":
    print("You can play with your teddy bear toy.")
else:
    print("You can play with your snowman toy.")

print("Stay warm and have a great time!")
```

Nested if Statements



Example

python

```python
weather = "sunny"
time_of_day = "night"

if weather == "sunny":
    if time_of_day == "day":
        print("You play with your car toy.")
    else:
        print("It's night. Time to sleep.")
elif weather == "rainy":
    print("You play with your boat toy.")
elif weather == "snowy":
    if time_of_day == "night":
        print("You play with your teddy bear toy.")
    else:
        print("You play with your snowman toy.")
else:
    print("You stay inside and read a storybook.")
```

Simple Calculator Program (Project)

- Create a basic calculator program that performs addition, subtraction, multiplication, and division.
- Ask the user to enter two numbers and choose an operation.
- Display the result accordingly.
- Handle potential errors gracefully.