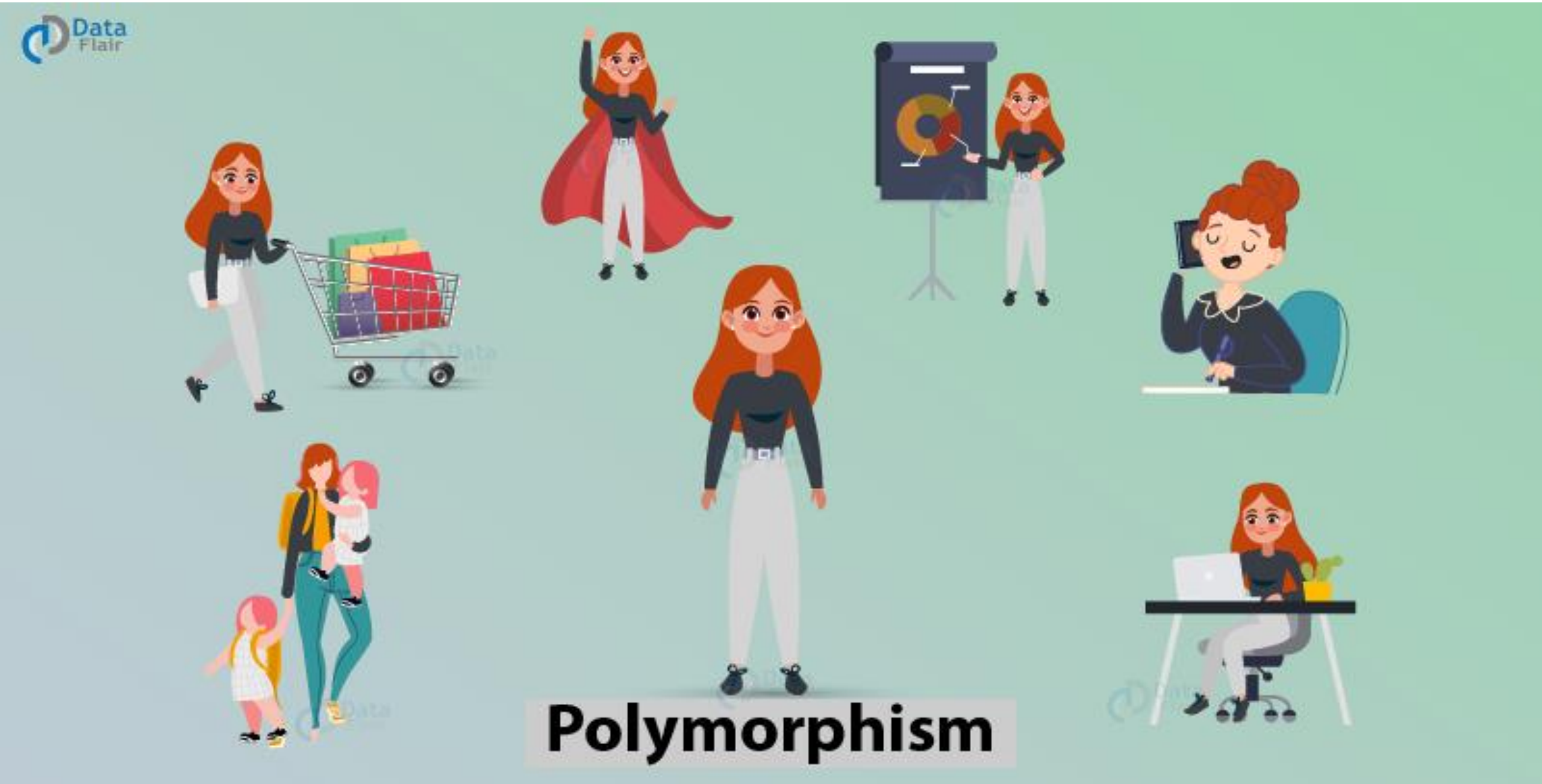
Data Flair
Polymorphism

What is polymorphism?

- the condition of occurring in several different forms.
- In computer science, it describes the concept that objects of different types can be accessed through the same method invocation.
- Specifically, in Java, we can have several sub-types of a single supertype:

  Frog, Hen, Cow, Tiger, Rabbit are all sub-types of Animal
- Sub-types can override a single method
  - All animals eat, but each animal eats something different
  - Each sub-class of Animal can have their own "eats" method

Polymorphism Example

- Specifically, in Java, we can have several sub-types of a single supertype:
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  - All animals eat, but each animal eats something different
  - Each sub-class of Animal can have their own "eats" method
- Specific animals can be up-cast to a generic group of animals
- Dynamic dispatch allows a call to Animal eats method to invoke different code, depending on what specific kind of animal.

Problem: Wide Mouth Frogs

- Create an Animal class that keeps track of the animal's name, and has an "eats" method.
- Make sub-classes of several types of animals, including wide mouth frogs. Each sub-class should have its own overridden "eats" method.
- Enable a frog to interview another animal, ask what the animal eats, and respond to the answer.
- Provide the capability for the frog to interview a list of animals, (and demonstrate polymorphism.)
- Include a main method in the frog class to test.