**JavaScript Objects**

* This is universe of programming languages.
* widely used tool for web development.
* which serve as the building blocks for complex data structures and functionalities
* JavaScript is an object-oriented language, where nearly everything is an object or can be treated as one.
* In JavaScript, objects are collections of key-value pairs, where keys are strings (or Symbols) and values can be of any data type: primitives, objects, or functions. This flexibility allows for the creation of complex data structures and facilitates dynamic behaviour.
* Every object in JavaScript has a special internal property called [[Prototype]], which references another object known as its prototype. This forms the basis of prototype-based inheritance, where objects inherit properties and methods from their prototypes.
* JavaScript engines utilize optimization techniques such as hidden classes (in V8 engine) or shapes (in Spider Monkey) to efficiently manage object properties and improve performance. These mechanisms optimize property access and help reduce memory usage.
* When an object contains primitive values (such as strings or numbers), these values are stored directly within the object's internal representation.
* Leverage prototype chains to share functionality between objects and create modular, reusable code.