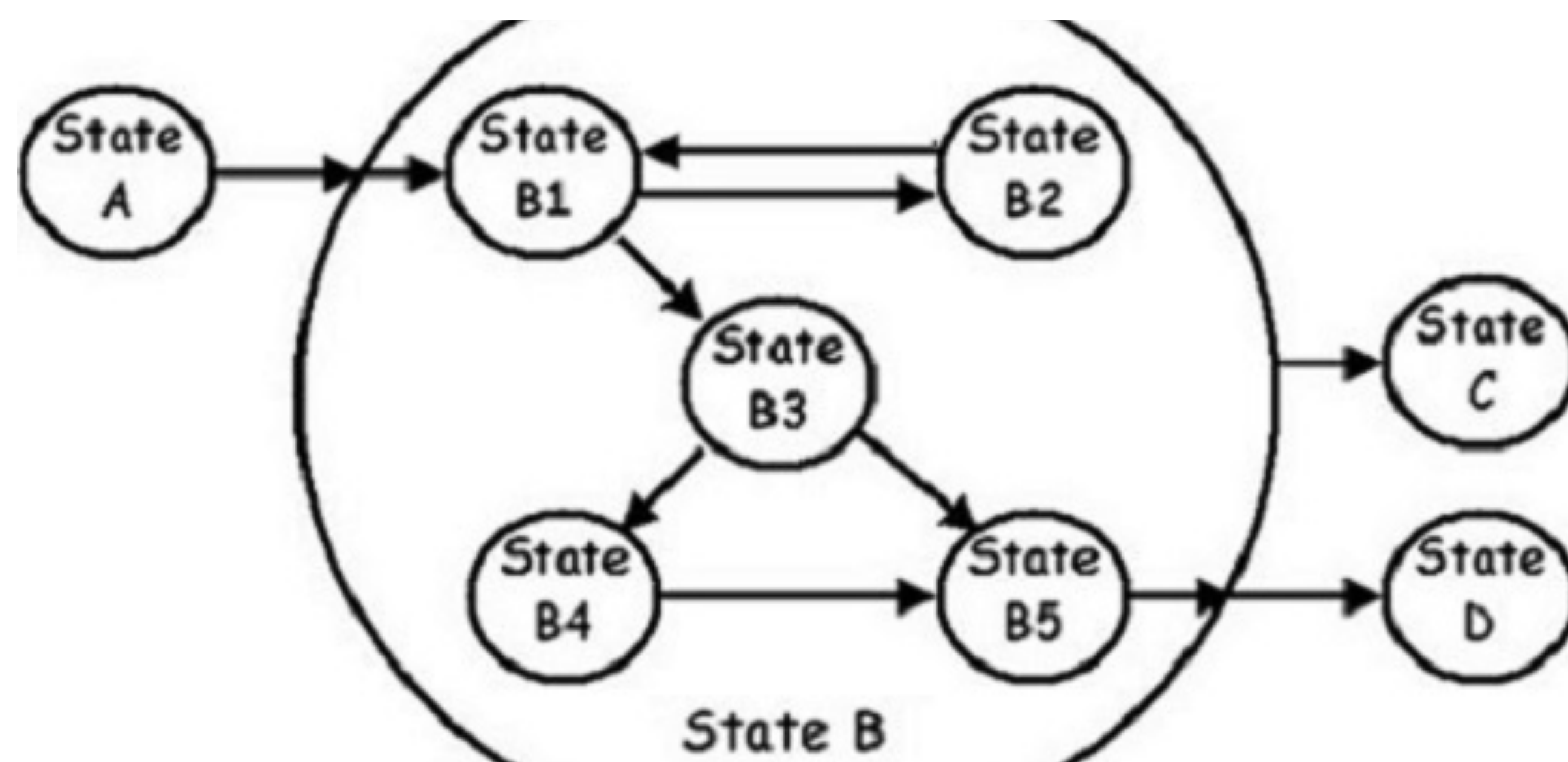## Research Objective

Design an original programming language

- Easy to understand and use

- Without sacrificing important logical guarantees

Research Approach

- Formulate requirements: useable by JPL systems engineers, and combine both ease of use and safety for mission critical operations.

- Collaborate with JPL system engineers to develop Proteus, a new programming language, by using Model-based Programming

Research Team

ARCS Fellows: Meyer Millman,

ARCS Associates: Daniel Tellier, Kate Go, Michael Munje

ARCS Advisor: Kyle Dewey, Ph.D., Computer Science, CSUN

NASA Collaborators: Michel Ingham, Ph.D., JPL, Klaus Havelund, Ph.D., JPL

$$0.2(\text{float}) + 0.2(\text{float})$$
$$= ?(\text{float})$$

```scala
class DogFactory extends AnimalFactory {
    def getAnimal(criteria: String): Animal = criteria match {
        case "small" | "small" => new LittleDog
        case "big" | "large" => new BigDog
        case _ => new GenericDog
    }
}
```