



Color Switch.

Advanced Programming - Monsoon 2020 - Project Submission

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Made with Love & Hardwork by.

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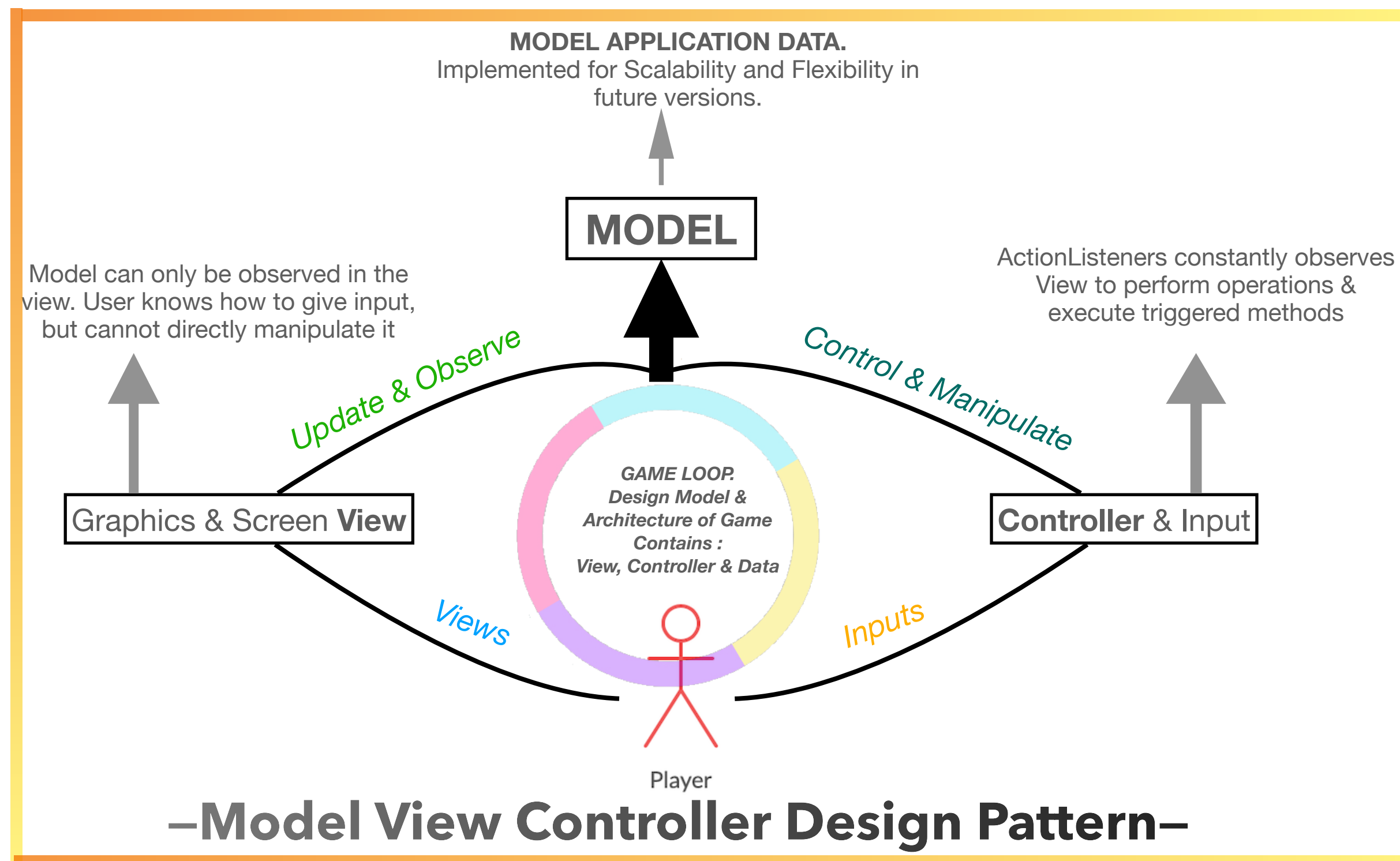
A JavaFx game. Color Switch.

Basics of implementation.

Essential Requirements



- GUI Components
- Scalability
- Pause Game
- New Game
- Restart Game
- Save Multiple Games
- Single Input Controller
- Increasing Difficulty
- Infinite Mode
- HighScore Maintained
- Saving HighScore & EXACT Orientation, Location of Objects, Ball Color
- 4 Colors
- 7+ Obstacles
- Gravity Constant (Physics Engine)
- Innumerable Animations



Design Patterns & Problems Solved

- **Prototype :**

Copy existing objects to avoid costly operations—in gamepage & timelines

- **Template :**

Division of Labour in functions implemented by child classes (Obstacles)

- **Adaptor :**

In LoadGame & LeaderBoard

- **Iterator :**

Iterating Obstacles & Concurrent Modification

- **Decorator :**

Constructor Overloading in every class

- **Factory :**

Object remain unexposed to the client.

Minimum Inter-Dependence but maximum interaction of classes. (GameObjects)

- **Inheritance & Interface :**

Obstacles, Gamepage, Serializable - Player & SaveGame

- **Association :**

Player, Various Instances & Animations in GamePage

- **Abstraction :**

Protected, Private, Static & Abstract Fields

wherever necessary to hid details from client

-**Starting with GUI in Java FX** for which we used Animations, Rotations & Timelines along with FXML & CSS Styling.

-**Ball Jumping :** AnimationTimer & TimeLine along with making a full working- physics engine.

-**Collision** intersect function in the Shape class and Class Casting of GameObjects along with a Timeline with high refresh rate.

-**Infinite Screen : Path Transition & Timelines. Serialization :** SaveGame & LoadGame Class.

- Sustaining Issue is with Memory of Laptop which overloads the CPU & Exhausts Graphic Memory

Can't really explain all problems in 1 slide, There were infinite.
Anyway, We solved them eventually, It was a tough job though :P





Division of Work.

- Collision of Objects, Save & Load Game , PauseGame implementation, Restart Game, GameOver implementation, Sound Effects, Changing Colours & Collecting Stars, Presentation

By Aryan Taneja

- Infinite Screen, Main Page GUI, Settings GUI, New & Resume Game GUI, Help & Rules GUI, Ball Jump, Physics Engine, Dynamic LeaderBoard, Player Serialise

By Suyashi Singhal

But Honestly?

It was all team work. Both contributed towards everything.



Bonus Features!!

- Choose your Own Music, Yayy!
- Dynamic Leaderboard!
- Save your unique ID & Game with New Games
- Sounds for buttons
- Background Music
- Stop/Start Music
- Sounds for Star Collection
- Exact Orientation Saved (with angle)
- Beautiful Animations & Game Engine

Thank-you. We hope you liked it!

Drop us your views at : aryan19027@iiitd.ac.in/suyashi19458@iiitd.ac.in

