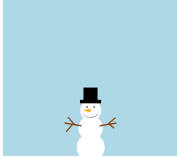

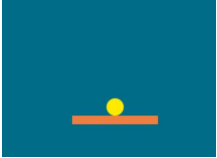
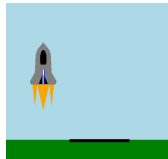
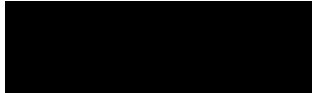




Introduction to Java Course Outline

Day	What they Learn	What they develop	Visual Output
1	<ul style="list-style-type: none">• What is a Programming Language?• Basics of Java• Method calls	Using Windows shape methods, draw circles, a house, animals and finally a masterpiece of choice	
2	<ul style="list-style-type: none">• Variables• Blocks (If then else)• Loops• Getting Mouse Input	Using variables and loops, animate scenes such as traffic lights that blink and use mouse position to paint on the screen.	
3	<ul style="list-style-type: none">• If-Then-Else• Booleans• Basic Physics: Distance, Velocity	Use physics principles and conditions to create a mini golf game and/or paddle ball game.	
4	<ul style="list-style-type: none">• Defining functions	Paddle Ball contd.	
5	<ul style="list-style-type: none">• Put it all together in a longer program with function calls	Use functions to develop a more complex 2 player game of Pong	Game of Pong

Intermediate Java Course Silver & Gold Outline

What they Learn	What they develop	Visual Output
<ul style="list-style-type: none">• Structure of a java program• Variables, methods• Branching, iterations• basic physics needed for animations	Use functions to develop a complex 2 player game of Pong OR Lunar Lander	
<ul style="list-style-type: none">• Intro to Arrays, ArrayLists• Intro to Strings• Basics of Classes & objects	Use string manipulation to sort and create speed reading software.	
<ul style="list-style-type: none">• Intro to object oriented programming; classes & structure	Use object-oriented programming to create ripples, snake, minigolf , ocean with different fish game	
<ul style="list-style-type: none">• Relationships: one to one and many to one (Intro to inheritance & polymorphism)	Try your hand at a different game creation from above list	
<ul style="list-style-type: none">• Put it all together in a more complex game with strong conditional logic	Develop one (or all) of several projects	GameofLife, Connect 4, frogger

Advanced Java Coursework

- **Recap:** OOP, Arrays, Strings
- **Images:** Develop an Image editor
- **Data Structures:** LinkedLists and Array lists, Stack: Develop Calculator
- Data Structures cont'd: Queues, Heaps, HashTable
- **Algorithms:** Searching, Sorting, Binary Sort
- Algorithms cont'd.: Recursion - Fibonacci, factorial; Develop Towers of Hanoi
- **Final Project:** Game of Solitaire

