

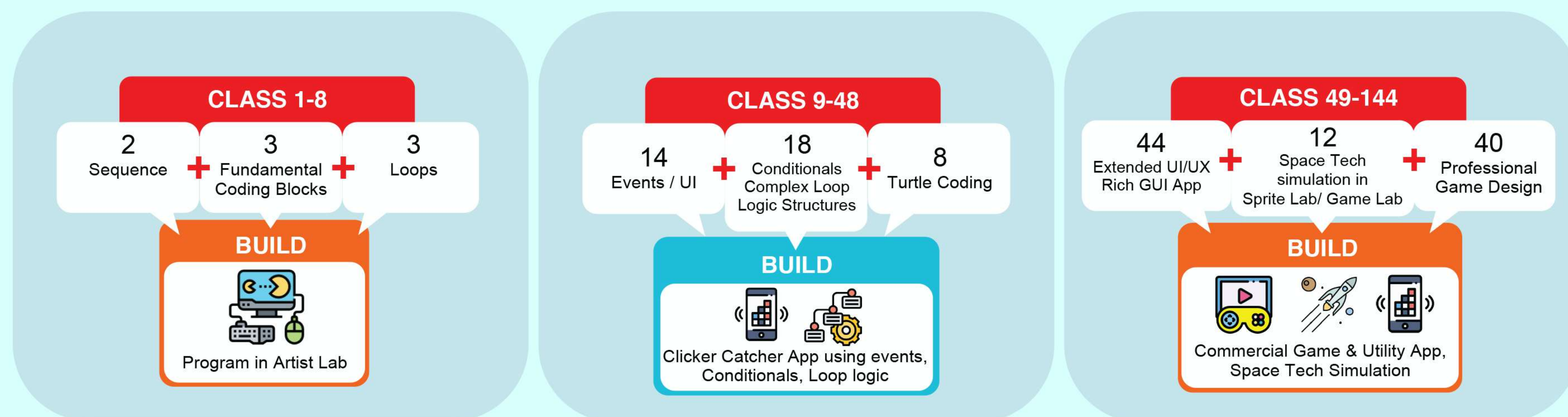
"The course is phenomenal. Not just coding, a new kind of personal expression. My kid's extroversion has gone up from the confidence of creating complex animations and apps in class." -- Kerry Bajaj, Mom, Nutritionist.



Build Commercial-Ready Games & Apps with Full UI/UX Interface

Kids creativity declines 96% from Age 9 since rule-based learning emphasize binary outcomes.

In WhiteHat Jr Coding, kids use foundation of **logic--sequence, loops, commands--to experiment, stumble, debug, and create commercial-ready apps and games.**



WhiteHat is created by alumni of the following esteemed institutions

Procter
&
Gamble

Boston
Consulting
Group

Discovery
Networks

IIM
Bangalore

IIT
Bombay

FOUNDATION

Basics + Core Programming Concepts + Blockly + Simple Apps

| CLASS | CONCEPT LEARNING | BUILDING SKILLS |
|-----------|--|--|
| T | BEG-T Block Commands | Introduction to Block based coding using visual drag drop programming Solve structured puzzle using Blocks Customize a maze for block commands |
| 1 | Code a story Story based coding : Animate character sprites using actions & behaviors | Intro to Sprite Lab for creation of animation stories Create object sprites for animation and impart them behaviour Simple story animation - Object creation |
| 2 | Events Code Story Introduction to events in coding | Understand and implement simple events in coding Trigger actions as result of event occurrence Simple story animation - Animate using events |
| 3 | Sequences and Types Flexible and Non-flexible sequences | Creating and appling sequences of blocks to solve roblem statement Solving structured puzzle exercises: Critical Thinking |
| 4 | Logic Art Sequences to build Art forms | Using Sequences create art forms, shapes and alphabets Simple 2D drawings using line sequences |
| 5 | Introductory Loops Introduction to Loops | Pattern recognition and Replace repeating code with Loops to write efficient code Optimized programs using loops |
| 6 | Direction Location & Orientation Understand location and orientation of objects on screen using x,y co-ordinates | Manipulate x,y co-ordinates in apps to move and orient objects Fun programs to move animal sprites on grid, change their look and behaviours on the fly |
| 7 | User Interaction using Keypress Events Process User inputs using Key events | Code animation stories where object sprites respond to user key events Story animations with key press functionality |
| 8 | SpaceTech: Lost Astronautt Capstone Class | Independant implementation of concepts from C1 to C8 to create animation game story with SpaceTech theme Independent Implementation : SpaceTech themed story game app |
| 9 | Code Debugging Debug and fix program code | Understand debugging Structured activities in artist and sprite lab Debugging:Persistence |
| 10 | Module checkpoint - 1 : Capstone Class Checkpoint Class 1 | Build game app in Sprite Lab Independant implementation : Build dodge game app |
| 11 | Algorithms and Programs Creating an appling algorithms in program code | Analyze and decompose puzzle structures Build animation stories thru' logical decomposition of problem statement |
| 12 | Custom behaviors for sprites Custom behavior | Create custom behaviors to animate and control sprite objects Generic custom behaviours applied across custom created sprites |
| 13 | Water Cycle Custom behavior | Create Custom behaviors specific to app requirement Custom behaviors for STEM outcomes |
| 14 | Generic Custom behaviors Custom behaviors | Generic Custom behaviors to apply across sprite objects Code custom behaviors for custom sprites in app |
| 15 | Deep Programming Deep Programming Practice | Practice excercises: for fundamental coding concepts of sprite & artist lab. Program with goal directed actions:Logical Thinking |
| 16 | Hour Of Code: Bounce Game IPO - Input Processing Outputs | Introduction to IPO How computers process information Single player : Bounce game |

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-----------|--|---|
| 17 | Variables Variables | Intro to Sprite Lab for creation of animation stories Create object sprites for animation and impart them behaviour Solving structured puzzle exercises: Critical Thinking |
| 18 | Extended Variables Variables | Manipulating variables in code Game app using variable values |
| 19 | The Flappy Bird Challenge User interactions and Keypress events | Use keypress events to develop the popular flappy bird game Single player : Tap game with score |
| 20 | Module checkpoint - 2/ Capstone Class Checkpoint Class 2 | Build story app in Sprite Lab using variables Independant implementation : Build Story app |
| 21 | Conditionals If - then Conditions and decision making | Use of Conditional Statements to evaluate and predict outcomes. Structured Puzzles :Logical Thinking |
| 22 | Making Decisions in Code Conditional Programming | Conditional constructs in Apps using directions Build decision making logic in apps Structured Puzzles :Logical Thinking |
| 23 | Making Decisions in Code Conditional Programming | Conditional constructs in Apps to evaluate outcomes Decision making capability in game apps Never Ending Game |
| 24 | Programming App To Make Decisions IF-ELSE Conditional Statement | STEM: States of Water app |
| 25 | Programming App To Make Decisions Conditional Statements with Boolean values | Game rules using conditionals to determine win/lose Car Racing game : NFS (Need for Speed) |
| 26 | Nested Loops Nested Loop : recognize patterns to create optimized code | Advanced programming: Write optimized Structured Activities : Logical Thinking for efficient coding |
| 27 | While Loop Programming construct of "WHILE" Loop | Understand and Implement While Loops Structured Activities : Logical Thinking |
| 28 | Binary Strings Convert simple code of 0s and 1s into machine-level binary | Write short computer programs in Binary 8x8 bitmap images from binary strings |
| 29 | Binary Math Binary Math and Number system | Convert 4 bit binary into Decimal value system 8x8 bitmap images from binary strings |
| 30 | Module Checkpoint class - 3/Capstone Class Checkpoint Class 3 | Independent app development : from Algorithm to final code. Revision of concepts A fun Witch - Wizard spells and bolts game |
| 31 | Build your own mobile app Intro to App Lab using standard UI elements : Buttons & Texts. | Create apps using text, label, button & use images, sound Understand event handlers for UI elements Build first interactive mobile app |
| 32 | Mobile App - Greeting Card Build App using UI elements | Change properties of user elements at design and run time.Add event handlers to listen for and respond to user events Interactive app for Birthday Card / Happy New Year |

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-----------|---|---|
| 33 | Conditionals in Mobile App IF - ELSE Conditional statement | Conditional statements & its evaluation based on different input values. Learn condition evaluation using comparison operations. Season App, Password Checker app that performs conditional analysis on user feedback |
| 34 | Logic Gates Boolean outcomes from logical AND and OR of conditional statements | Conditional evaluation using logical operations Use logical operators (&& ,) to implement decision logic Logic Gates app for Boolean And, Or Operations |
| 35 | Multiscreen App - Multiscreen Navigaation Event driven programming with multiple screens and switching between them | Navigation in an app by switching context between multiple screens STEM: Scientific Animal Classification app |
| 36 | Clicker Game : Keeping Score Develop a clicker game | Build a clicker game app using detailed UI properties in design. Learn the concepts of random number & variable manipulation for score Clicker game with score card |
| 37 | Multiscreen clicker chaser game Develop a multi screen chaser catch game | Game design concepts of lives used, number of tries, total score & implement in clicker catcher game Structured Activities : Logical Thinking with game design rules |
| 38 | While Loop - Mobile App Implement While Loop in App Lab | While loops with an evaluating condition and a correct terminating condition Fun creative activity excercises: Apps using while loops to perform repetitive tasks defining boundary conditions for exit |
| 39 | WHILE Loops with CANVAS UI elements While Loop using Canvas elements | While Loop for Creative art Concept of RBG color manipulation Fun creative exercises : Drawing with code using loops |
| 40 | ARTIST PATTERNS Use text commands, angles, loops and complex logic for creative outcomes | Use the Artist environment to explore loops and text commands that draw complex patterns Structured Activities : Logical Thinking |
| 41 | Intro to Turtle programming Turtle graphics to create visual output | Program the turtle pointer to move on the screen using coordinate location system and complex designs. Fun creative exercises : Develop programs for creative expression using Turtle Code |
| 42 | Control Statements - FOR Loop For Loops using Turtle Programming | Use loops with embedded counters having predetermined start and stop values Structured Puzzles : Logical Thinking exercises |
| 43 | Recreate Frozen Patterns in Turtle Code Recreate frozen patterns in Turtle Code | Revision practice for While and For Loops Structured Puzzles : Logical Thinking exercises for creative outcomes |
| 44 | Control Statements - Timed Loops Use Timed Loops to create deterministic iterations | Learn to use timed loops to implement delays and run loops at precise time intervals Apps with Countdowns and delays |
| 45 | Advanced UI Controls - Part 1 Rich GUI for Apps using multiple controls | Extended UI : Slider, checkbox radiobutton and dropdown controls in app Rich GUI and well designed apps |
| 46 | Advanced UI Controls - Part 2 Rich GUI for Apps using multiple controls | String functions with Extended UI components in apps Rich GUI and well designed apps |
| 47 | Deep Debugging Identifying and Fixing bugs in programs | Debug sequential & event-driven programs using debug console, speed slider,& breakpoints Learn best practices for debugging programs Debugging:Persistence and Best Practices |
| 48 | Capstone Checkpoint Project Demonstrate independent implementation skill through start to end self written programs | Independent implementation of concepts taught in 48 classes Options to exhibit skill in various types of programs Capstone Assessment Project (Any 1): Quiz / Treasure Hunt, Pop the Bubble OR Get a 10, Turtle Scenary, Clicker Catcher Chaser App: Catch the Burglar |

EXPLORATION

RICH GUI + Heavy core logic + Blockly + Animation + Professional Apps

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-------|-----------------------------|---|
| 49 | Space Tech UI Controls | Slider Control-Control size of planets components for improved user interaction |
| 50 | Extended UI Controls | Image Control components for improved user interaction |
| 51 | Extended UI Controls | Canvas Control components for improved user interaction |
| 52 | Extended UI Controls | DropDown Menu control components for improved user interaction |
| 53 | Extended UI Controls | Checkbox and Radiobutton controls for improved user interaction |
| 54 | Mouse Events in App | App Lab Event handlers for mouse events |
| 55 | Mouse Events in App | App Lab Event handlers for mouse events |
| 56 | Key Events in App | App Lab Event handlers for mouse events |
| 57 | Key Events in App | App Lab Event handlers for mouse events |
| 58 | Space Tech -Timed Loops | Timer concepts in App Lab Stop Watch and Counter for Rocket Launch |
| 59 | Set Timeout, Clear Timeouts | Timer control concepts in App Lab |
| 60 | Variables | Controlling memory with variables |
| 61 | Variables | Assign values with variables |
| 62 | Variables | Local Vs Global Variables |
| 63 | UI elements at run time | Dynamic UI |
| 64 | Integration App | Virtual thinking skill - Algorithm |

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-------|---|---|
| 65 | Hybrid App | Design thinking Skill -UI UX |
| 66 | Hybrid App | Creative thinking skill Coding implementation |
| 67 | User inputs and Strings | Strings In Apps |
| 68 | Boolean Expressions | AND and OR |
| 69 | Programming with Data | Data structures Key value pairs |
| 70 | Programming with Data | Data structures Key value pairs |
| 71 | Functions | Basic repeating code structure |
| 72 | Functions | Puzzles in Artist Lab using functions |
| 73 | Functions and Return Values | Functions in App |
| 74 | Functions and Return Values | Use of functions in App |
| 75 | Responsible Use of Internet and Digital Footprint | Exercise caution when on internet |
| 76 | Abstraction | Concepts of objects and abstraction |
| 77 | Abstraction | Concepts of objects and abstraction |
| 78 | Abstraction | Concepts of objects and abstraction |
| 79 | Sprites Creation and properties | Sprite Lab interactions Creative Thinking Skill |
| 80 | Sprites Costume property | Sprite Lab interactions Creative Thinking Skill |

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-------|---|--|
| 81 | Space Tech Sprites Actions and Behaviours | Sprite Lab - Black Hole Simulation Creative thinking skill |
| 82 | Space Tech Sprites Virtual interactions | Sprite Lab - Solar System Rotation, Revolution Concepts |
| 83 | Sprite Lab animations | Sprites in action |
| 84 | Sprite Lab animations | Complex sprite movement |
| 85 | Space Tech Sprite animations in Game Lab | Collisions in sprites Meteorites crashing simulation |
| 86 | Space Tech Sprite animations in Game Lab | Build a game in sprite lab-I Gravity Concept Game |
| 87 | Space Tech Sprite animations in Game Lab | Build a game in sprite lab-II Conditionals in Gravity Game |
| 88 | Space Tech Sprite animations in Game Lab | Build a game in sprite lab-III Bounce, float, collisions in Gravity Game |
| 89 | Custom Sprites | Game Lab |
| 90 | Custom Sprites | Game Lab |
| 91 | Space Tech Build a story | Sprites in Game Lab Story - Astronaut lost in space |
| 92 | Space Tech Build a story | Sprites in Game Lab Story - Astronaut lost in space |
| 93 | Code interactive experiences | Sprites and Game Lab Fashionista App |
| 94 | Code interactive experiences | Sprites and Game Lab Fashionista App |
| 95 | Space Tech Code interactive experiences | Animating Sprites in game lab Journey in Space Animations |
| 96 | Space Tech Code interactive experiences | Animating Sprites in game lab Journey in Space Animations |

SPECIALIZATION

Go CRAZY with Commercial quality games and utility app

BLOCKLY + THUNKABLE

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-------|--|--|
| 97 | Game Design Process | Thinking & Process activities |
| 98 | Game Design Process | Thinking & Process activities |
| 99 | Game Design | Thinking & Process activities |
| 100 | Game Design Thinking, Process Top Down Design | Thinking & Process activities |
| 101 | Algorithms and Pseudocode | Sorting Logic Understanding and Analysis |
| 102 | Algorithms and Pseudocode | Sorting Logic and Algorithm |
| 103 | Algorithms and Pseudocode | Sorting Logic and Algorithm |
| 104 | Algorithms and Pseudocode | Sorting Logic and Algorithm |
| 105 | Game Implementation | Multiplication Tables MATH Utility |
| 106 | Game Implementation | Multiplication Tables Multiplication Table, Calc App |
| 107 | Game Implementation | Math Utility Calculator App |
| 108 | Game and Graphics | Simple challenges game for an object to navigate a maze of obstacles. |
| 109 | Game and Graphics | Simple challenges game for an object to navigate a maze of obstacles. |
| 110 | Game and Graphics | Simple challenges game for an object to navigate a maze of obstacles. |
| 111 | Game and Graphics | Simple challenges game for an object to navigate a maze of obstacles. |
| 112 | Game and Graphics | Simple challenges game for an object to navigate a maze of obstacles. |

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-------|--------------------|--|
| 113 | Game and Graphics | Simple challenges game for an object to navigate a maze of obstacles. |
| 114 | Game and Graphics | Simple challenges game for an object to navigate a maze of obstacles. |
| 115 | Play Snake Game | Analyse |
| 116 | Play Snake Game | Plan and design |
| 117 | Play Snake Game | Algorithm |
| 118 | Play Snake Game | Algorithm and Pseudocode |
| 119 | Play Snake Game | Code Implementation Game Lab |
| 120 | Play Snake Game | Code Implementation Game Lab |
| 121 | Play Snake Game | Code Implementation Game Lab |
| 122 | Play Snake Game | Test, Debug, Improvise Game Lab |
| 123 | Play Snake Game | Test, Debug, Improvise |
| 124 | Tic Tac Toe Game | Analyse |
| 125 | Tic Tac Toe Game | Plan and design |
| 126 | Tic Tac Toe Game | Algorithm |
| 127 | Tic Tac Toe Game | Code Implementation |
| 128 | Tic Tac Toe Game | Code Implementation |

| CLASS | CONCEPT & LEARNING | BUILDING SKILLS |
|-------|---------------------|--------------------------|
| 129 | Tic Tac Toe Game | Test and Debug |
| 130 | Word App Generator | Analysis and design |
| 131 | Word App Generator | Analysis - Algorithm |
| 132 | Word App Generator | Algorithm and Pseudocode |
| 133 | Word App Generator | Code Implementation |
| 134 | Word App Generator | Code Implementation |
| 135 | Word App Generator | Code Implementation |
| 136 | Word App Generator | Test and Debug |
| 137 | Word App Generator | Test and Debug |
| 138 | Image App | Thunkable Platform |
| 139 | Image App | Thunkable Platform |
| 140 | Image App | Thunkable Platform |
| 141 | Chatbot Trainer App | Thunkable Platform |
| 142 | Chatbot Trainer App | Thunkable Platform |
| 143 | Chatbot Trainer App | Thunkable Platform |
| 144 | Chatbot Trainer App | Thunkable Platform |