

EARLY AGE PROGRAMMING PHASE-II COURSE CONTENT

Lectures	Topics
Lecture # 01	Orientation and Introduction to Subject <ol style="list-style-type: none"> 1. What is computer 2. Why learn code 3. Motivation for Course & Programming
Lecture # 02	Introducing Computer Systems <ol style="list-style-type: none"> 1. Applications of computer 2. Examples of computer systems
Lecture # 03	Basic computer Hardware and Software <ol style="list-style-type: none"> 1. Computer memory 2. Daily use of different computer systems
Lecture # 04	Introducing Computer Systems <ol style="list-style-type: none"> 1. Exercise about devices 2. Computer process cycle
Lecture # 05	Introduction Computer Programming <ol style="list-style-type: none"> 1. Program and examples of programming 2. Software and types of software
Lecture # 06	How Software's are developed <ol style="list-style-type: none"> 1. Programming and programming languages 2. Use of browser and website.
Lecture # 07	How to install any software on OS. <ol style="list-style-type: none"> 1. Software and operating system 2. Installing and uninstalling computer software
Lecture # 08	Office Automation <ol style="list-style-type: none"> 1. Intro to office automation 2. How to manage documents
Lecture # 09	MS Office, MS Word <ol style="list-style-type: none"> 1. Intro to MS office 2. Intro to MS word
Lecture # 10	MS Word <ol style="list-style-type: none"> 1. Use of MS Word.
Lecture # 11	MS Word <ol style="list-style-type: none"> 1. Practical exercises for students using MS Word.
Lecture # 12	MS Power Point <ol style="list-style-type: none"> 1. Introduction of MS Power Point.
Lecture # 13	MS Power Point <ol style="list-style-type: none"> 1. Use of MS Power Point
Lecture # 14	MS Power Point <ol style="list-style-type: none"> 1. Practical exercises for students using MS power point
Lecture # 15	MS Excel

	1. Introduction of Excel
Lecture # 16	MS Excel
	1. Use of MS Excel
Lecture # 17	MS Excel
	1. Practical exercises for students using MS Excel Point
Lecture # 18	Identify and Select the Problem
	1. Define problem and identify the workspace or area of concern 2. Examples
Lecture # 19	Analyze the Problem
	1. Analytical reasoning definition 2. Divide problem into subparts 3. Examples
Lecture # 20	Generate Potential Solutions
	1. Solution and list of possible solutions 2. Examples of solution
Lecture # 21	Select and Plan the Solution
	1. What is best solution? 2. How to evaluate best solution
Lecture # 22	Algorithm Development
	1. Algorithm and examples of algorithm 2. Real life algorithms 3. Benefits of algorithmic thinking
Lecture # 23	Steps for Writing Algorithm
	1. Step#01: Define your algorithms input 2. Step#02: Define the variables 3. Step#03: Outline the algorithm's operations 4. Step#04: Output the results of your
Lecture # 24	Flowchart of the Solution
	1. Definition and importance of flowchart for solving a problem 2. Examples 3. Exercise
Lecture # 25	Algorithm Activity (Examples)
	1. Examples with exercise and solutions
Lecture # 26	Computer Science Algorithm
	1. Algorithm is a science of computer e.g suggestion in google search live streaming.
Lecture # 27	How do you measure the efficiency of Algorithm
	1. Correctness 2. Efficiency 3. Correctness VS Efficiency 4. Examples
Lecture # 28	Generate Potential Solutions
	1. List of all possible solutions

	2. Examples
Lecture # 29	<p align="center">Evaluate the Solution</p> <ol style="list-style-type: none"> 1. Write code for best solution 2. Write a program and Run the whole program
Lecture # 30	<p align="center">Logic & Formal Reasoning</p> <ol style="list-style-type: none"> 1. Types of logical reasoning 2. Advice for Logical Reasoners 3. Principles of logical reasoning 4. Examples of good reasoning
Lecture # 31	<p align="center">Code Studio</p> <p>https://studio.code.org/</p> <ol style="list-style-type: none"> 1. Intro to code.org
Lecture # 32	<p align="center">Learn to Drag and Drop and Sequence</p> <ol style="list-style-type: none"> 1. Course 1, Lesson 3 2. Course 1, Lesson 4
Lecture # 33	<p align="center">Debugging</p> <ol style="list-style-type: none"> 1. Course 1, Lesson 5
Lecture # 34	<p align="center">Bee: Sequence and Artist: Sequence</p> <ol style="list-style-type: none"> 1. Course 1, Lesson 7 2. Course 1, Lesson 8
Lecture # 35	<p align="center">Shapes and Spelling Bee</p> <ol style="list-style-type: none"> 1. Course 1, Lesson 10 2. Course 1, Lesson 11
Lecture # 36	<p align="center">Maze Loops</p> <ol style="list-style-type: none"> 1. Course 1, Lesson 13
Lecture # 37	<p align="center">Bee Loops</p> <ol style="list-style-type: none"> 1. Course 1, Lesson 14
Lecture # 38	<p align="center">Create a story and Loops</p> <ol style="list-style-type: none"> 1. Course 1, Lesson 16 2. Course 1, Lesson 18
Lecture # 39	<p align="center">Maze: Sequence and Artist Sequence</p> <ol style="list-style-type: none"> 1. Course 2, Lesson 3 2. Course 2, Lesson 4
Lecture # 40	<p align="center">Maze: Loops and Artist: Loops</p> <ol style="list-style-type: none"> 1. Course 2, Lesson 6 2. Course 2, Lesson 7
Lecture # 41	<p align="center">Artist: Loops and Bee Loops</p> <ol style="list-style-type: none"> 1. Course 2, Lesson 7 2. Course 2, Lesson 8
Lecture # 42	<p align="center">Bee Debugging</p> <ol style="list-style-type: none"> 1. Course 2, Lesson 10
Lecture # 43	<p align="center">Artist: Debugging</p> <ol style="list-style-type: none"> 1. Course 2, Lesson 11

Lecture # 44	Bee Conditionals 1. Course 2, Lesson 13
Lecture # 45	Flappy and Create a Story 1. Course 2, Lesson 16 2. Course 2, lesson 17
Lecture # 46	Nested Loops 1. Course 2, Lesson 19
Lecture # 47	Maze 1. Course 3, Lesson 2
Lecture # 48	Artist 1. Course 3, Lesson 3
Lecture # 49	Artist: Functions 1. Course 3, Lesson 5
Lecture # 50	Bee: Functions and Bee conditionals 1. Course 3, Lesson 6 2. Course 3, Lesson 7
Lecture # 51	Nested Loops 1. Course 3, Lesson 11
Lecture # 52	While Loops 1. Course 3, Lesson 12
Lecture # 53	Bee: Nested Loops 1. Course 3, Lesson 13
Lecture # 54	Debugging 1. Course 3, Lesson 14
Lecture # 55	Bounce 1. Course 3, Lesson 15
Lecture # 56	Create a Story 1. Course 3, Lesson 16
Lecture # 57	Create a Game 1. Course 3, Lesson 17
Lecture # 58	Patterns 1. Course 3, Lesson 21
Lecture # 59	Introduction to Scratch 1. View of scratch 2. Basic of scratch 3. Examples
Lecture # 60	Creating First Application 1. Practical example
Lecture # 61	Make the cat move 1. Motion script
Lecture # 62	Make the cat draw 1. Pen script
Lecture # 63	The Playful Cat

	1. Look script
Lecture # 64	Make the cat sing
	1. Sound script
Lecture # 65	Control Blocks
	1. Control script
Lecture # 66	Sensing and Operator Blocks
	1. Sensing and operator scripts
Lecture # 67	Example Project (1)
	1. Develop Race Game by using different scripts.
Lecture # 68	Example Project (2)
	1. Use the scripts to make the sprites dance.
Lecture # 69	Example Project (3)
	1. Add a sprite to make stamps on screen with changed color.
Lecture # 70	Example Project (4)
	1. Add different sprites and make them animating.
Lecture # 71	Example Project (5)
	1. Make a simple game in Scratch using Motion script.
Lecture # 72	Example Project (6)
	1. Make a fish Chomp game using Scratch.
Lecture # 73	Example Project (7)
	1. Make sprite to draw a Star using pen script.
Lecture # 74	Example Project (8)
	1. Using video sensing block
Lecture # 75	Example Project (9)
	1. Develop Maze game.
Lecture # 76	Example Project (10)
	1. Add a sprite and make it alive.
Lecture # 77	Example Project (11)
	1. Develop simple Calculator.
Lecture # 78	Example Project (12)
	1. Story of Hungry Elephant
Lecture # 79	Example Project (13)
	1. Alphabets with things.
Lecture # 80	Example Project (14)
	1. Parts of body.
Lecture # 81	Example Project (15)
	1. Editing and designing using Scratch.
Lecture # 82	Example Project (16)
	1. Making a stop watch in Scratch.
Lecture # 83	Web Based Drag and Drop Website
	1. What and why is mobirise?
Lecture # 84	Webpage

	1. Create a webpage
Lecture # 85	Webpage 1. Add blocks to a website
Lecture # 86	Webpage 1. Add headers, Images, videos and Slides shows
Lecture # 87	Webpage 1. Add articles, Features and forms
Lecture # 88	Webpage 1. Add accordion, toggles, tabs and footer
Lecture # 89	Webpage 1. Block parameters
Lecture # 90	Webpage 1. Preview/Publish your page
Lecture # 91	How to setup App Inventor 1. Three fundamental ways to test and use app inventor applications
Lecture # 92	Basic UI introduction 1. The Component Editor
Lecture # 93	Basic UI introduction 1. Properties Section
Lecture # 94	Blocks Editor 1. Blocks Editor Introduction 2. Blocks Drawer
Lecture # 95	Blocks Editor 1. Blocks Viewer & Media Section 2. Blocks Editor In Action
Lecture # 96	Understanding Backing Up, Restoring & Sharing App Inventor Projects 1. App Backup, Restore & Share Introduction 2. Downloading & Backing App Inventor Apps 3. Uploading, Sharing & Restoring App Inventor Apps
Lecture # 97	Basic Home Screen Layout 1. Navigation Drawer Layout 2. Component Spotlight: Activity Starter 3. Implementing Website Activity
Lecture # 98	Implementing Map Activity 1. Component Spotlight – Textbox 2. Implementing Email Screen Layout
Lecture # 99	Basic Application Development in App inventor 1. Component Spotlight: Label 2. Creating Our First Application

Lecture # 100	Basic Application Development in App inventor <ol style="list-style-type: none"> 1. Component Spotlight – Horizontal Arrangement 2. Component Spotlight – Vertical Arrangement 3. Running the Application and testing these components
Lecture # 101	Electronic Email <ol style="list-style-type: none"> 1. Introduction to E-mail 2. Sending & Receiving E-mail.
Lecture # 102	How to create an E-mail <ol style="list-style-type: none"> 1. Steps for creating an E-mail
Lecture # 103	Social media Ethics <ol style="list-style-type: none"> 1. Advantages and disadvantages of social media 2. Security threats
Lecture # 104	Computer Security Threats and managing virus <ol style="list-style-type: none"> 1. Computer Security Basics 2. Consequences Of Ignoring Computer Security
Lecture # 105	Networks and Communications <ol style="list-style-type: none"> 1. Computer Networks 2. Cutting Edge Technologies
Lecture # 106	Internet Privacy <ol style="list-style-type: none"> 1. What we need to be safe 2. How do kids use social media
Lecture # 107	Monetization and Commercialization <ol style="list-style-type: none"> 1. How kids do monetization and commercialization?

KPITB

KHYBER PAKHTUNKHWA
**INFORMATION
 TECHNOLOGY BOARD**
 Government of Khyber Pakhtunkhwa