Kids IT Courses

KIDS & TEENS FREELANCING TRAINING

Quantum Computing Course Outline

MODULE 1: What is Quantum Computing?

- Classical vs quantum computers (basic comparison)
- Real-world examples: Google, NASA, encryption
- Why quantum is the future
- Meet the Qubit – the quantum version of a bit!

MODULE 2: Bits vs Qubits

- What is a classical bit? (0 or 1)
- What is a qubit? (0 **and** 1 at the same time)
- Superposition explained with spinning coins
- Simple hands-on activity: Qubit coin toss game

MODULE 3: Quantum Principles for Beginners

- Superposition – a qubit can be in multiple states
- Entanglement – spooky link between particles
- Measurement – how it changes everything
- Use fun metaphors: donuts, twins, and light switches

MODULE 4: Simple Quantum Algorithms

- What is an algorithm?
- Classical vs quantum searching
- Grover's algorithm (visual explanation only)
- Hands-on: Find hidden item in fewer steps (quantum style!)

MODULE 5: Visual Coding with Quantum Simulators

- Use IBM Quantum Experience or Qiskit blocks
- Build a basic quantum circuit
- Run a qubit flip simulation
- Learn how to read output results

MODULE 6: Quantum in Real Life

- Quantum in medicine and science
- Quantum encryption and security
- Solving big math and science problems
- Jobs of the future: What kids could become

MODULE 7: Quantum vs Sci-Fi

- Quantum myths from movies (Avengers, Ant-Man)
- What's real vs what's exaggerated
- Quantum teleportation — yes, it's a thing!
- Science fiction as a gateway to learning

MODULE 8: Final Presentation & "Quantum Quest" Game

- Kids create a comic, poster, or slideshow on what they learned
- Play a quiz-based game: "Quantum Quest"
- Present to parents or class
- Earn a "Quantum Explorer" certificate