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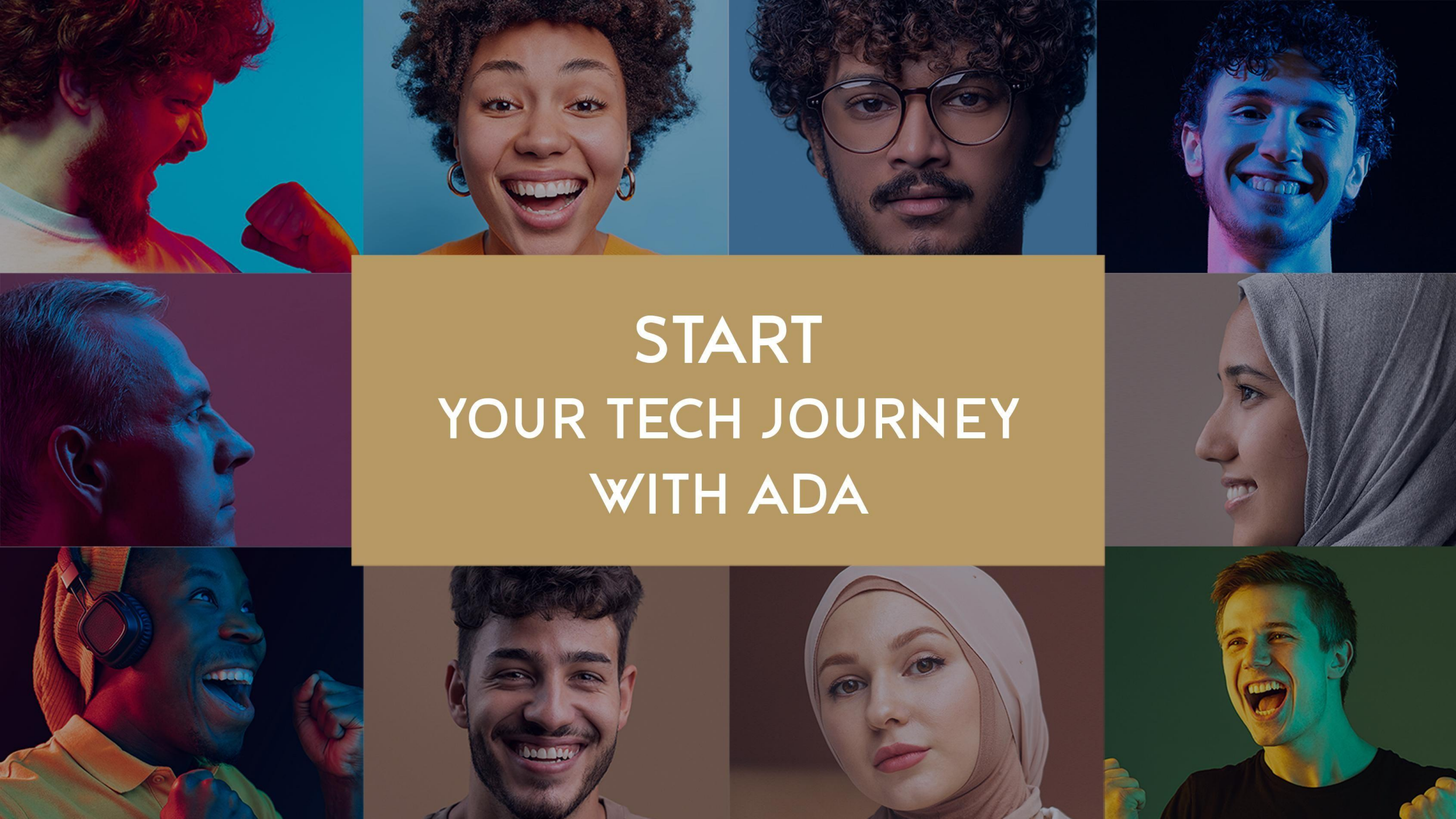
START
YOUR TECH JOURNEY
WITH ADA

Agenda

- Conditional statements: if/else, switch
- Comparison operators: ==, ===, !=, !==, >, <, >=, <=
- Logical operators: &&, ||, !
- Loop structures: for, while, do...while
- Special loops: for...of, for...in
- Hands-on exercise: Print all even numbers from 1 to 100

Conditional Statements - if/else

Basic if statement:

```
let age = 18;

if (age >= 18) {
    console.log("You are an adult!");
}
```

if...else statement:

```
let temperature = 25;

if (temperature > 30) {
    console.log("It's hot outside!");
} else {
    console.log("It's not too hot.");
}
```

if...else if...else:

```
let score = 85;

if (score >= 90) {
    console.log("Grade: A");
} else if (score >= 80) {
    console.log("Grade: B");
} else if (score >= 70) {
    console.log("Grade: C");
} else {
    console.log("Grade: F");
}
```

Comparison Operators

Operator	Description	Example	Result
`==`	Equal (loose)	`5 == "5"`	`true`
`===`	Equal (strict)	`5 === "5"`	`false`
`!=`	Not equal (loose)	`5 != "5"`	`false`
`!==`	Not equal (strict)	`5 !== "5"`	`true`
`>`	Greater than	`10 > 5`	`true`
`<`	Less than	`3 < 7`	`true`
`>=`	Greater than or equal	`5 >= 5`	`true`
`<=`	Less than or equal	`4 <= 3`	`false`

Logical Operators

AND Operator (&&)

```
let age = 25;
let hasLicense = true;

if (age >= 18 && hasLicense) {
    console.log("You can drive!");
}
// Both conditions must be true
```

NOT Operator (!)

```
let isRaining = false;

if (!isRaining) {
    console.log("Let's go for a walk!");
}
// Reverses the boolean value
```

OR Operator (||)

```
let day = "Saturday";

if (day === "Saturday" || day === "Sunday") {
    console.log("It's weekend!");
}
// At least one condition must be true
```

Switch Statement

When to use switch:

- Multiple possible values for one variable.
- Cleaner than multiple if...else if statements.

```
let day = "Monday";

switch (day) {
    case "Monday":
        console.log("Start of work week!");
        break;
    case "Tuesday":
        console.log("Tuesday blues!");
        break;
    case "Wednesday":
        console.log("Hump day!");
        break;
    case "Saturday":
    case "Sunday":
        console.log("Weekend!");
        break;
    default:
        console.log("Regular day");
}
```

For Loop

Basic for loop structure:

```
for (initialization; condition; increment) {
    // Code to repeat
}
```

Example - Count to 10:

```
for (let i = 1; i <= 10; i++) {
    console.log("Count: " + i);
}
```

Example - Array iteration:

```
let fruits = ["apple", "banana", "orange"];

for (let i = 0; i < fruits.length; i++) {
    console.log("Fruit " + (i + 1) + ": " + fruits[i]);
}
```

While Loop Loop

Basic while loop:

```
let count = 1;

while (count <= 5) {
    console.log("Count is: " + count);
    count++; // Don't forget to increment!
}
```

Example - User input simulation:

```
let userInput = "";

while (userInput !== "quit") {
    console.log("Program is running...");
    // userInput = getInput(); // Simulated input
    userInput = "quit"; // Exit condition
}
```

do...while Loop

Difference from while loop:

- **while:** Check condition first, then execute.
- **do...while**: Execute first, then check condition.

```
let number;

do {
    console.log("Generating random number...");
    number = Math.floor(Math.random() * 10) + 1;
    console.log("Generated: " + number);
} while (number !== 7);

console.log("Finally got 7!");
```

for...of and for...in Loops

for...of Loop (ES6)

```
let colors = ["red", "green", "blue"];

for (let color of colors) {
    console.log("Color: " + color);
}
// Output: Color: red, Color: green, Color: blue
```

for...in Loop

```
let person = {
    name: "John",
    age: 30,
    city: "New York"
};

for (let key in person) {
    console.log(key + ": " + person[key]);
}
// Output: name: John, age: 30, city: New York
```

Loop Comparison

Loop Type	Best Used For	Example Use Case
`for`	Known number of iterations	Count from 1 to 100
`while`	Unknown iterations, condition-based	Process until user says "stop"
`do...while`	Execute at least once	Show menu, then check user choice
`for...of`	Iterate array values	Print each item in shopping list
`for...in`	Iterate object properties	Display all user profile fields

Practice: Even Numbers 1-100

Your Task:
Write a program that prints all even numbers from 1 to 100

Requirements:
- Use a for loop to iterate from 1 to 100
- Use an if statement to check if number is even
- Print only the even numbers
- Add a counter to show how many even numbers were found
- Use proper variable declarations

THANK YOU

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