

Introduction to Programming Course

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Introduction

In the introduction to programming course

- Students will start **exploring** the exciting **world** of **computer programming**.
- This **course** is like the first **building block** for people who want to learn how to **write** and **understand code**.
- You'll learn **important skills** and knowledge for **programming** by attending **classes**, doing **practical activities**, and working on **projects**.
- Whether you're a complete **beginner** or have **some prior experience**, this course will provide you with the **fundamental concepts** and **tools** needed to begin your **programming** journey.

Why ?!

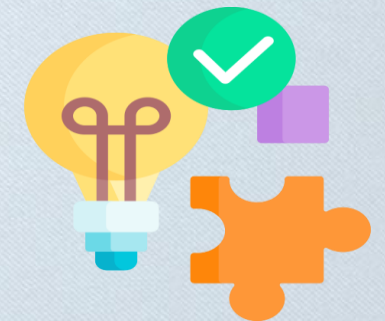
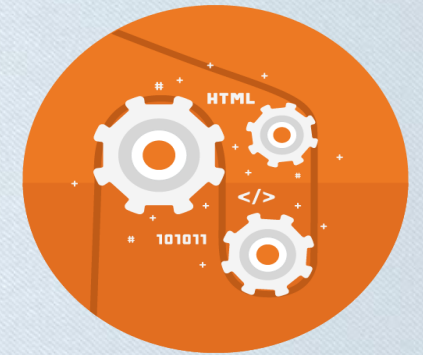
Learning **programming** is of paramount **importance** in today's **digital age** for **several reasons**:

- **Digital Literacy**

- As our world becomes increasingly digital, programming **literacy** is akin to being able to **read** and **write** in the **digital language**.

- **Problem Solving**

- Programming **equips** individuals with the **ability** to **break down complex problems** into **smaller, manageable parts** and develop systematic **solutions**.
- This **problem-solving** skill is **invaluable** in various **fields**, from **business** to **science** and **engineering**.

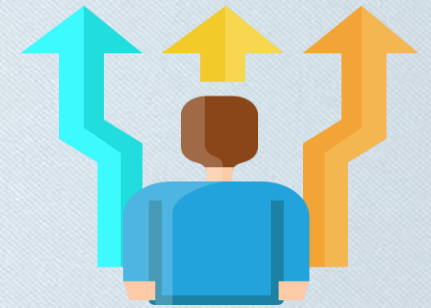


Why ?!

Learning **programming** is of paramount **importance** in today's **digital age** for **several reasons**:

- **Career Opportunities**

- Proficiency in **programming** opens the **door** to a wide **range** of **career opportunities**. From **software development** and **data analysis** to **artificial intelligence** and **web development**, there's a **high demand** for **programmers** in diverse **industries**.



- **Innovation**

- **Programming** is the **driving force** behind **technological innovations**.
- Those who can code have the **ability** to **create new software applications** and **innovate** in **various fields**, contributing to **technological advancements**.



Why ?!

Learning **programming** is of paramount **importance** in today's **digital age** for **several reasons**:

- **Entrepreneurship**

- Knowing how to program can **empower individuals** to **develop** their **own** software **products, apps**, or online **businesses**.
- This **entrepreneurial** spirit can **lead** to the **creation** of **successful startups**.

- **Global Collaboration**

- Programming is a **universal language** that transcends geographical boundaries.
- It **facilitates** collaboration and **communication** among **individuals** and **teams worldwide**.



Objectives

Fundamental Understanding

- To provide students with a fundamental understanding of programming concepts, including variables, data types, control structures, functions, and algorithms.

Problem-Solving Skills

- To develop problem-solving skills by teaching students how to break down complex problems into smaller, manageable steps and create algorithmic solutions.

Programming Proficiency

- To enable students to write, debug, and modify simple programs using a programming language (e.g., Python, Java, C++).

Debugging Skills

- To equip students with debugging skills, enabling them to identify and fix errors in their code effectively.

Documentation and Coding Style

- To stress the significance of good coding practices, including proper documentation and adherence to coding style guidelines.



Which Language ?!

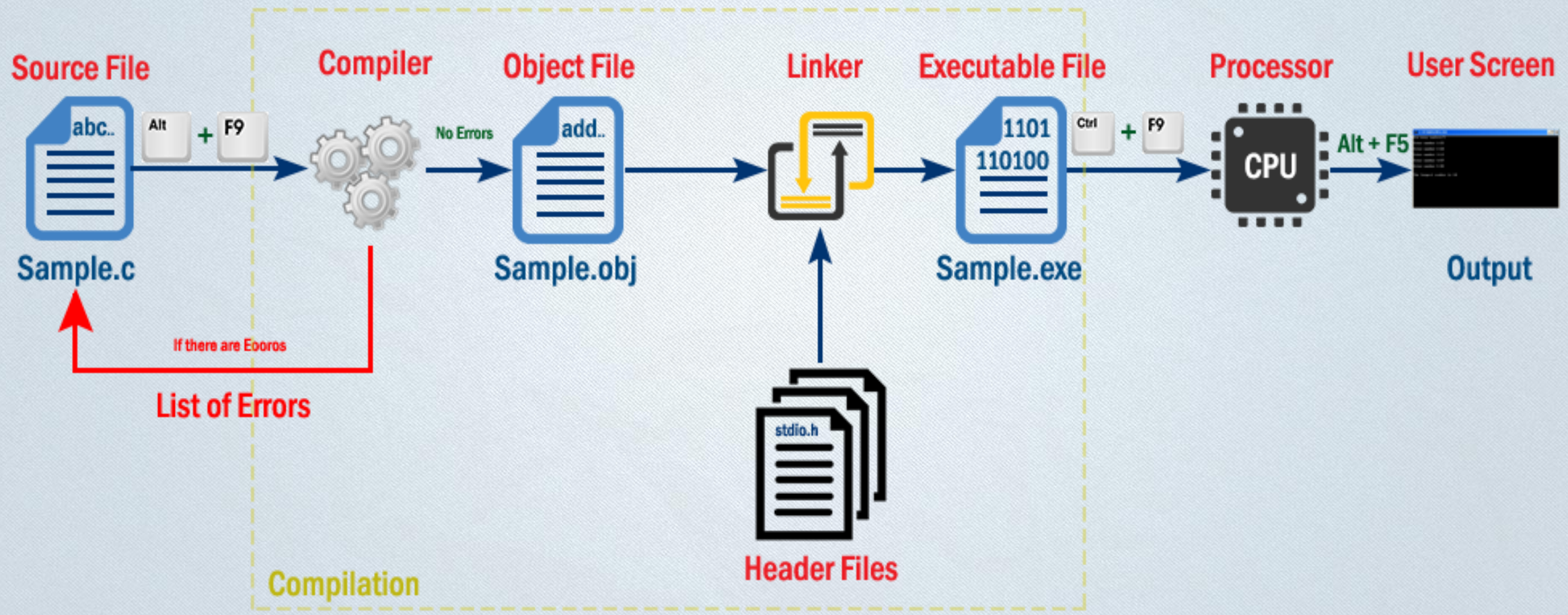
- Any **programming** language **must** has the **basics concepts**.
- So, **don't** be **panic** all basic **concepts** are **easy** to learn.
- It is **enough** to learn it in one **language**, and if you want to **understand another language**, it is just the way of writing "**Syntax**" that will **differ**.



Main Topics

- Introduction to Digital Era (Numbering System)
- First Program (Display “Hello World”) and Comments.
- Variables and Data Types.
- Conditional Statements (e.g. if, if-else and switch).
- Loops (e.g. for, while and do-while).
- Functions.
- Strings.
- Pointers (In C and C++).
- Data Structures (e.g., Arrays, Lists)
- Introduction to Algorithms
- Debugging and Problem Solving

How Code Works ?!



Display "Hello World" On Screen

```
#include <stdio.h>
```

```
int main() {  
    printf("Hello World!");  
    return 0;  
}
```



```
#include <iostream>  
using namespace std;
```

```
int main() {  
    cout << "Hello World!";  
    return 0;  
}
```



```
using System;  
namespace HelloWorld
```

```
{  
    class Program  
    {  
        static void Main(string[] args)  
        {  
            Console.WriteLine("Hello World!");  
        }  
    }  
}
```

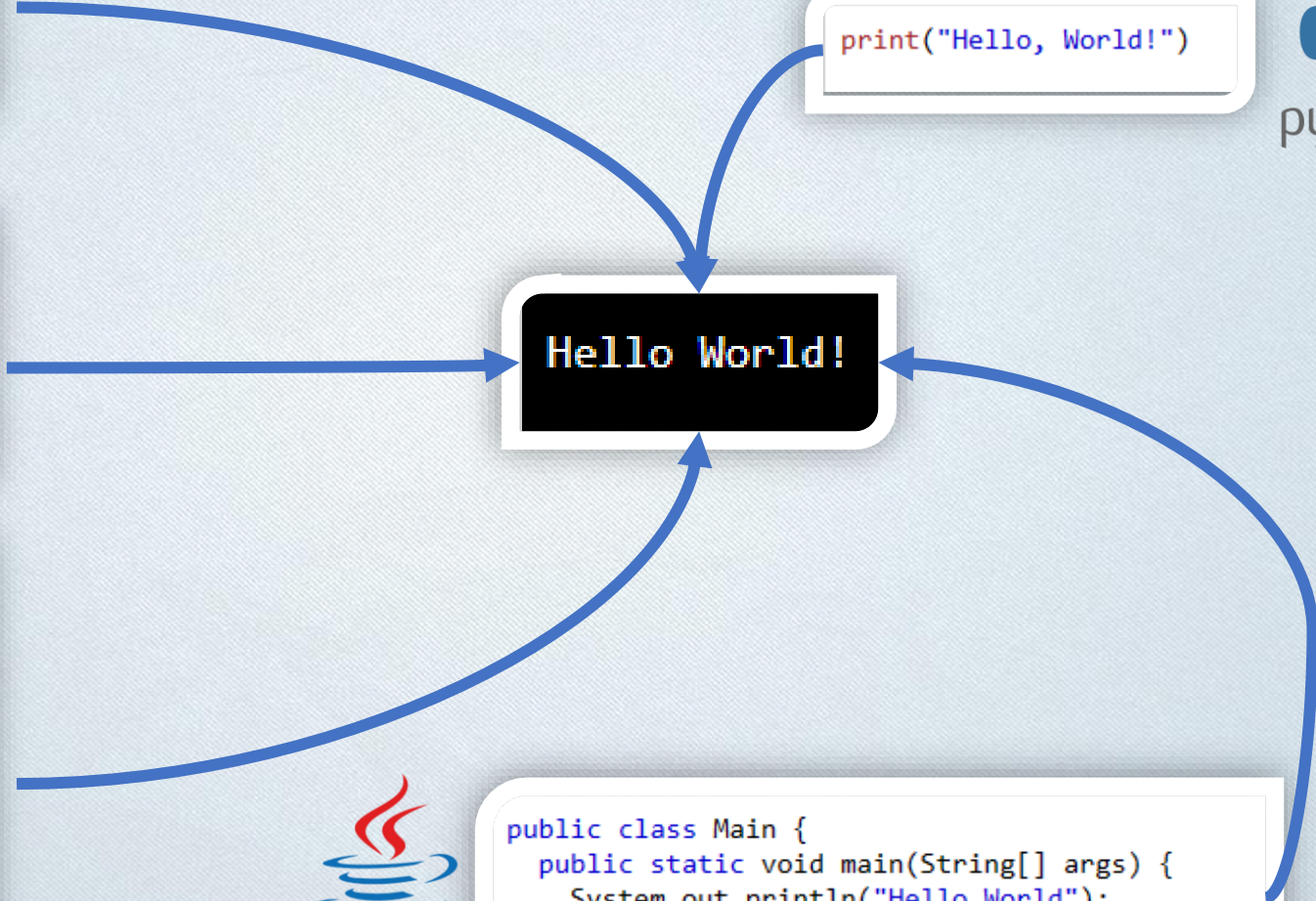


```
print("Hello, World!")
```



Hello World!

```
public class Main {  
    public static void main(String[] args) {  
        System.out.println("Hello World");  
    }  
}
```



Study Tips and Guidance

- Practice regularly by writing code.
- Break complex problems into smaller, manageable parts.
- Seek help from professors, tutors, or online resources.
- Collaborate with classmates on coding projects.
- Stay up-to-date with course materials and assignments.
- Don't hesitate to ask questions in class or online groups.

Thank
you