

PROGRAMMING

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Java Beginner Course

Lecture 03 - First Java Program

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Basic CMD commands

Command	Description
cd	Prints the currently working directory
cd <path>	Go to the directory specified by the path
cd\	Go to the root of the directory
cd..	Goes back one level
dir	Display the content of currently working directory
cls	Clear the screen
exit	Exit from the command prompt

Create first Java program

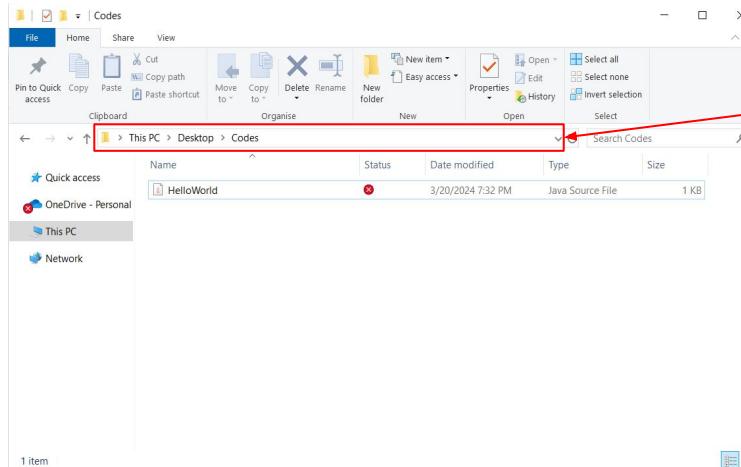
- Create a new folder named **Codes** in desktop
- Open notepad (Search and open)
- Type below code

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

- Save file as **HelloWorld.java** inside the **Codes** folder (Change Save as type to All Files)

Run first Java program

- Open the **Codes** folder
- Click on file path and type **cmd** on it



Type cmd on
this and press
enter

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.4046]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Kusal Sirimanna\OneDrive\Desktop\Codes>
```

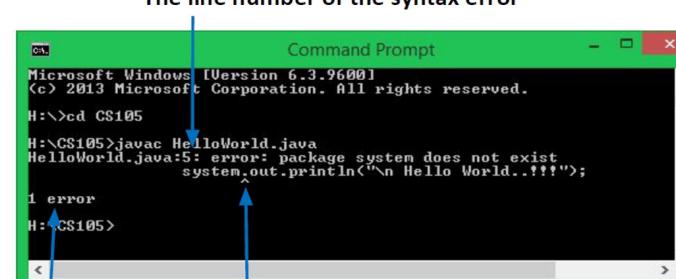
- Terminal will open in location

Run first Java program (Cont...)

- Compile the code (Command : `javac filename.java`)

```
C:\Users\Kusal Sirimanna\OneDrive\Desktop\Codes>javac HelloWorld.java
```

- If there is a error need to fix that.



The screenshot shows a Windows Command Prompt window titled "Command Prompt". The command `javac HelloWorld.java` is run, resulting in an error message: `HelloWorld.java:5: error: package system does not exist
 system.out.println("\n Hello World..!!!!");
 ^`. A blue arrow points to the line number "5" in the error message, labeled "The line number of the syntax error". Another blue arrow points to the word "system" in the error message, labeled "Location of the syntax error". A third blue arrow points to the number "1" in the message "1 error", labeled "Number of syntax errors".

- If there is no error, `filename.class` (Bytecode) will be created inside **Codes** folder.

 HelloWorld.class	3/20/2024 8:58 PM	CLASS File	1 KB
 HelloWorld	3/20/2024 8:58 PM	Java Source File	1 KB

Run first Java program (Cont...)

- Run the code in terminal (Command : java filename)

```
C:\Users\Kusal Sirimanna\OneDrive\Desktop\Codes>java HelloWorld  
Hello World...!
```

This is the
output

Code explanation

- This is the code example.

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

- What is **System.out.println()** ?
 - It prints output to the standard output stream, which is typically the console or terminal where the program is executed.
- What is a main method?

```
public static void main(String[] args)
{
    //method body
}
```

- JAVA interpreter executes the java program starting from the main method
- The only part that can be changed is the name of the String array. All the other components of the method signature exactly be as same as the shown above

Code explanation (Cont...)

- What is a class?

```
class className
{
    //Body
}
```

- Java program is a collection of classes
- A class body contains attributes and methods
- Each and everything within a class except importing packages and declaring packages.
- For best practice we are using same name for class and the filename

- What is a **Driver** class?

```
class HelloWorld
{
    public static void main(String[] args)
    {
        //method body
    }
}
```

- The class that contains main method called as Driver class

Naming conventions for classes

- The class names begin with upper case letters.

```
class Student
{
    public static void main(String[] args)
    {
        //method body
    }
}
```

- When there are more than one word to be combined, the subsequent words start with upper case letters or combine them using underscores(_)

```
class StudentDetails
{
}
```

```
class Student_Details
{
}
```

Variables & Methods

```
public class Person { ← no usages Class
    String name; 1 usage ← Variables
    int age; 1 usage

    void printName() { ← no usages Method
        System.out.println("Name is " + this.name);
    }

    void printAge() { ← no usages Method
        System.out.println("Age is " + this.age);
    }
}
```

Escape sequence characters

- Escape sequences in Java are used to represent special characters within strings that would otherwise be difficult or impossible to include directly.

```
public class Driver {  
    public static void main(String[] args) {  
        System.out.println("My name is Saman." +  
            "\nI live in Kegalle\nAge :\t22" +  
            "\n\"Hi, I'm Saman\"");  
    }  
}
```

My name is Saman.
I live in Kegalle
Age : 22
"Hi, I'm Saman"

Escape Sequence	Description
\n	New line – Positions the cursor at the beginning of the next line
\t	Horizontal tab – Move the screen cursor to the next tab position
\r	Carriage returns - Positions the beginning of the current line. Do not advance to the next line. Any characters output after the carriage return overwrites the previous characters.
\\\	Backslash
\"	Double quote
\'	Single quote