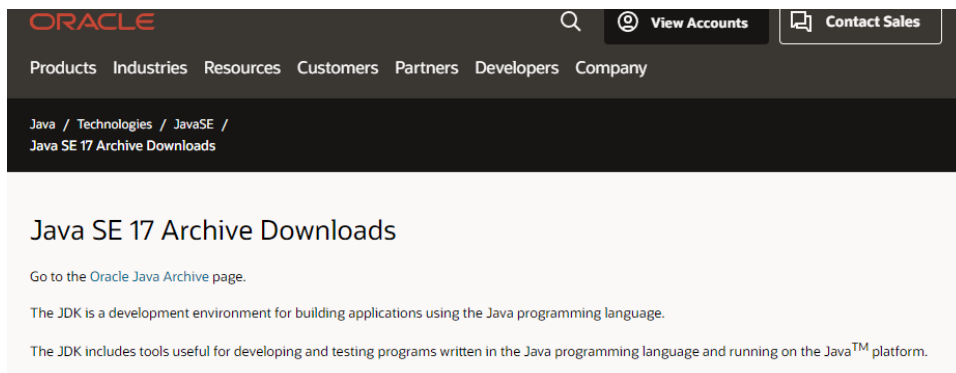


# Object Oriented Programming in Java



## Part 1 Getting Started

Download the Java JDK Standard Edition 17 from Oracle's website:

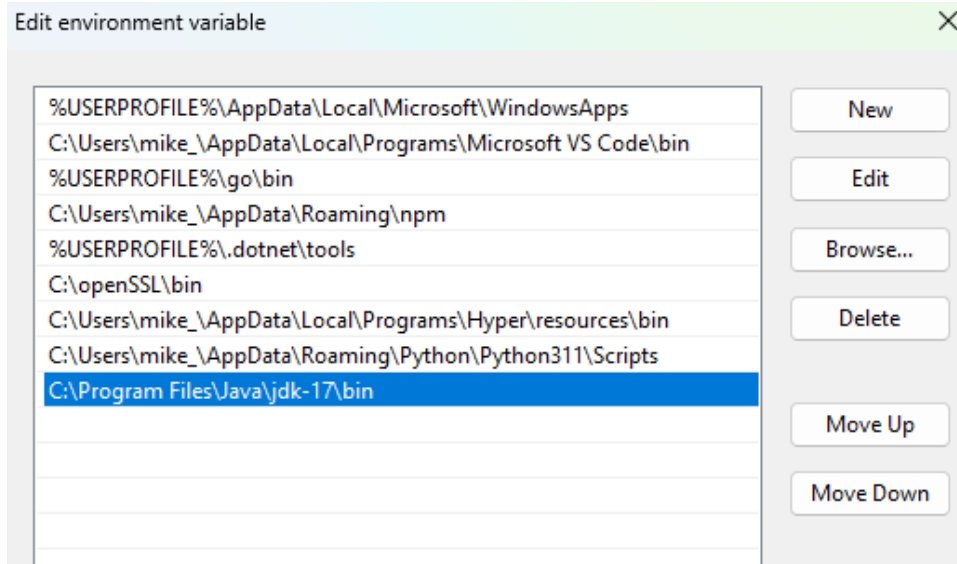


Choose the edition for your machine and install.

On a Windows machine, take note where the app is installed, typically

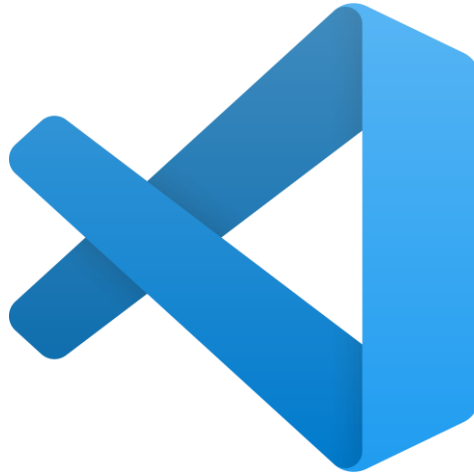
Here: C:\Program Files\Java\jdk-17\bin

Copy this path and add it to your system's path environment.

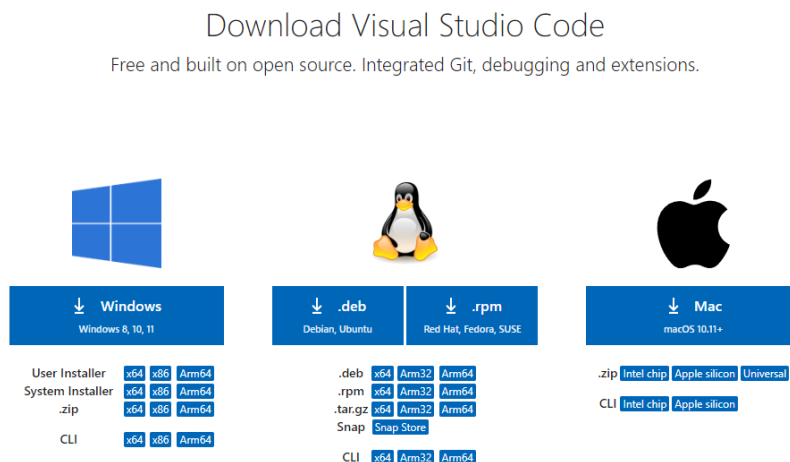


Reboot your system so that the path variable takes effect.

## Part 2 Integrated Development Environment (IDE)

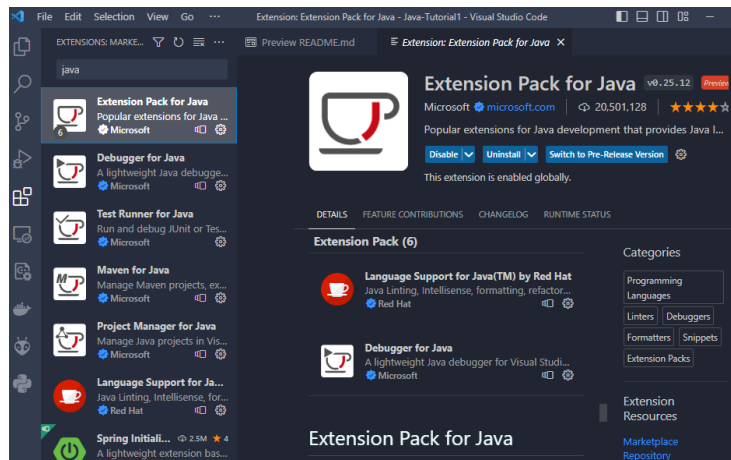


Download the latest version of Microsoft's Visual Studio Code.



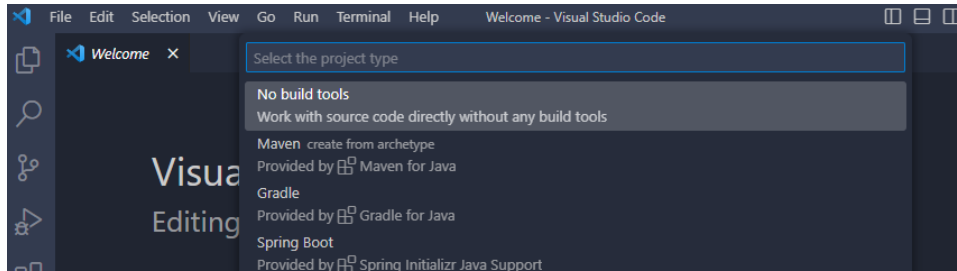
Get the appropriate version for your system and install.

Open VSCode and add the Extension pack for Java.



### Part 3 Create a new project

Control + Shift + P opens the command palette. In the dialog box enter 'Java create new project' select 'No Build Tools.'



Select an appropriate folder to save your project in and give it a name.

Java-OOP-Tutorial1

## Lesson 2

### Challenge: Building a Library Catalog

#### Description:

You have been tasked with building a simple library catalog system. The system should allow users to add books to the catalog, search for books by title or author, and display the available books.

#### Requirements:

1. Create a `Book` class with the following attributes:
  - `title` (String): The title of the book.
  - `author` (String): The author of the book.
  
2. Create a `Library` class to manage the library catalog. It should have the following methods:
  - `addBook(Book book)`: Adds a book to the library catalog.
  - `searchByTitle(String title)`: Searches for a book by title and displays the book information if found.
  - `searchByAuthor(String author)`: Searches for books by author and displays the book information if found.
  - `displayAvailableBooks()`: Displays the information of all available books in the catalog.
  
3. In the `main` method of your main Java class, demonstrate the functionality of the library catalog by performing the following actions:
  - Create a few instances of `Book` and add them to the library catalog using the `addBook` method.
  - Perform a search for books by title using the `searchByTitle` method.
  - Perform a search for books by author using the `searchByAuthor` method.
  - Display the available books in the catalog using the `displayAvailableBooks` method.

Note:

- You can choose whether to implement the classes in the same file or separate files.
- Feel free to add additional features or functionality to enhance the library catalog system.

Example Usage:

```
java Copy code  
  
public class Main {  
    public static void main(String[] args) {  
        // Create library catalog  
        Library library = new Library();  
  
        // Add books to the catalog  
        Book book1 = new Book("Harry Potter and the Sorcerer's Stone", "J.K.  
        Book book2 = new Book("To Kill a Mockingbird", "Harper Lee");  
        Book book3 = new Book("1984", "George Orwell");  
  
        library.addBook(book1);  
        library.addBook(book2);  
        library.addBook(book3);  
  
        // Search by title  
        library.searchByTitle("1984");  
  
        // Search by author  
        library.searchByAuthor("J.K. Rowling");  
  
        // Display available books  
        library.displayAvailableBooks();  
    }  
}
```

Output:

...

Book found:

Title: 1984

Author: George Orwell

Books found:

Title: Harry Potter and the Sorcerer's Stone

Author: J.K. Rowling

Available books in the library:

Title: Harry Potter and the Sorcerer's Stone

Author: J.K. Rowling

Title: To Kill a Mockingbird

Author: Harper Lee

Title: 1984

Author: George Orwell

...

Feel free to customize the challenge or add more complexity based on your requirements. Have fun coding!