

PORT FOLIO

21CSC203P –ADVANCED PROGRAMMING PRACTICE

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SCHOOL OF COMPUTING

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR

OCTOBER 2025

MARK RUBRICS

| | |
|--|--|
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Advanced Programming Practice – Student Portfolio

About Me

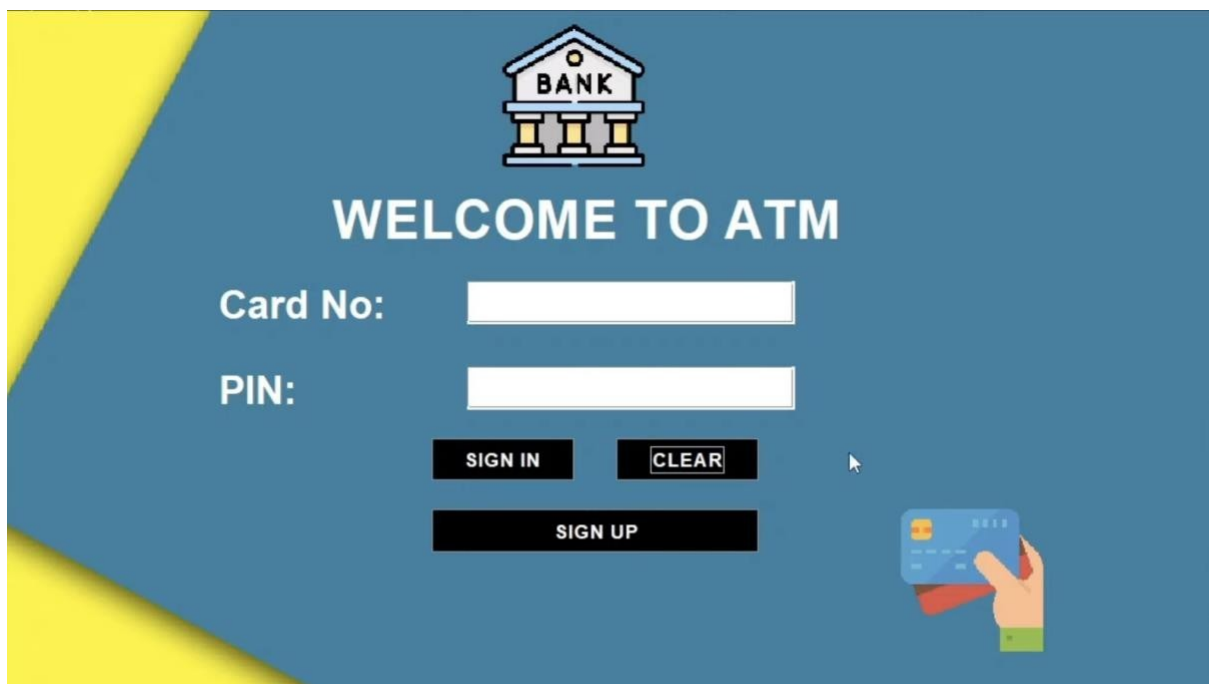
I am an aspiring Java developer passionate about building efficient, reliable, and user-friendly applications. I enjoy solving challenging programming problems, debugging complex issues, and continuously expanding my knowledge of Java, Python, and modern frameworks. My goal is to become a skilled software engineer who develops innovative solutions that balance performance, functionality, and usability.

Projects

PBL Project

This project is a desktop banking application developed in Java, simulating an ATM or personal banking system. It features a graphical user interface, likely built with Swing, allowing users to perform various banking operations. The system includes robust user authentication with detailed, multi-step signup and login processes.

Core functionalities cover essential transactions like cash deposits, withdrawals, balance inquiries, and fund transfers. It also provides convenience features such as a "Fast Cash" option, PIN modification, and the ability to view a mini-statement of recent transactions. The application uses a MySQL database for data persistence, facilitated by the included JDBC connector.





Form No: 8999

Page 3: Account Details

Account Type:

- ☒ Saving Account ☐ Fixed Deposit Account
- ☐ Current Account ☐ Recurring Deposit Account

Card Number:

(Your 16-digit Card number)

XXXX-XXXX-XXXX-4184

It would appear on ATM Card/Cheque Book and Statements

PIN:

(4-digit password)

XXXX

Services Required:

- ☐ ATM CARD ☐ Internet Banking
- ☐ Mobile Banking ☐ EMAIL Alerts
- ☐ Cheque Book ☐ E-Statement

☒ I hereby declares that the above entered details correct to th best of my knowledge.

Submit

Cancel

GitHub Link: <https://github.com/TusharB-07/Bank-Management-system>

My Projects

1. n8n Search Engine

Developed a custom Python-based search engine application that performs intelligent searches, processes data efficiently, and displays relevant results dynamically. Languages Used: Python

GitHub Link: <https://github.com/TusharB-07/n8n-search-engine>

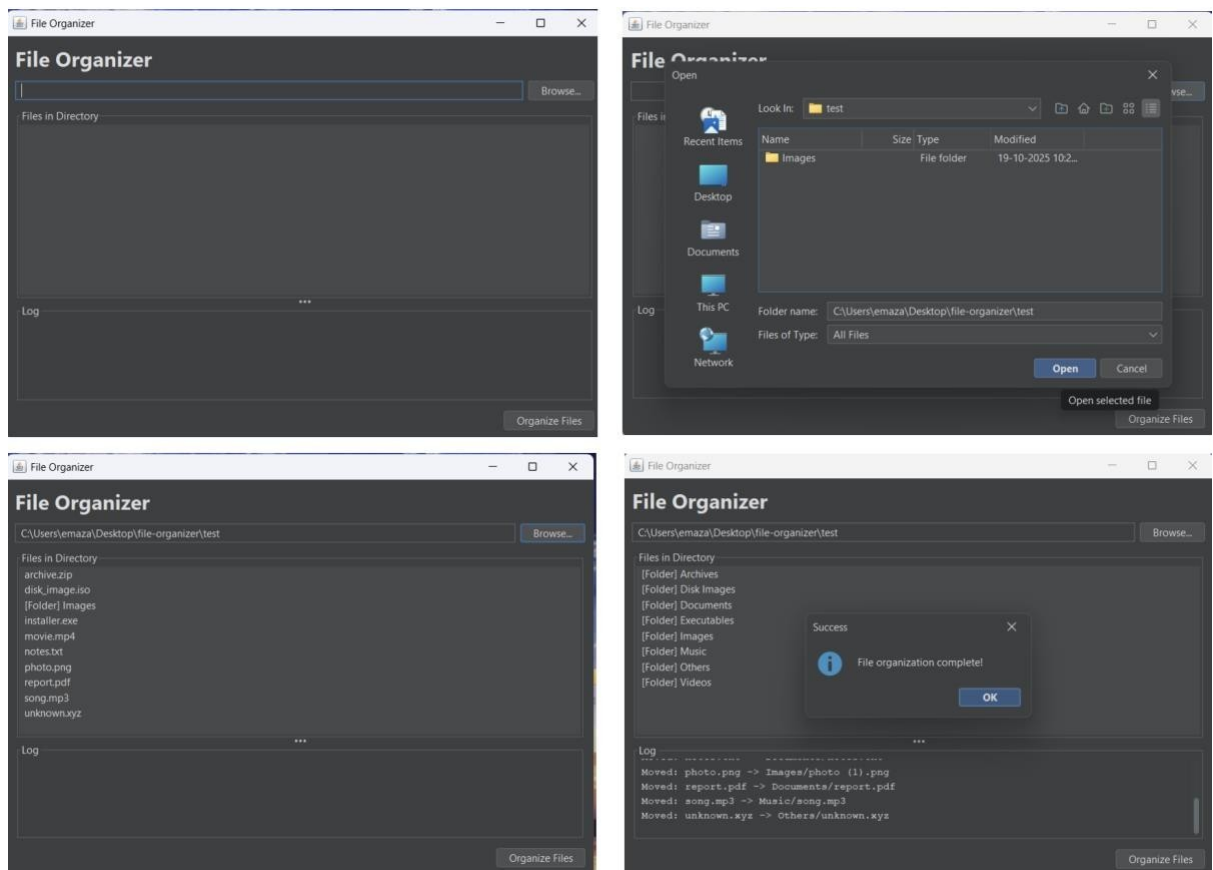
The screenshot displays the n8n Search Engine web application. On the left, a sidebar contains 'Dataset Info' (Total workflows: 2058, Embedding dimension: 384) and 'Example Queries' (email automation, data scraping, notifications, file backup, social media, payment processing). The main area features the 'n8n Search Engine' title, a search bar with the placeholder 'e.g., email automation, data scraping, notifications...', and a 'Results to show' dropdown set to 5. Below the search bar is a button to 'Enter a search query above to find relevant workflows'. A 'Sample Data' section shows a table with workflow details.

| | workflow_id | workflow_name | num_nodes | file_name | workflow_json |
|---|-------------|-------------------------------|-----------|---|--|
| 0 | None | n8n-workflow-docs | 0 | package.json | [{"name": "n8n-workflow-docs", "version": "1.0.0", "description": "n8n-workflow-docs"}] |
| 1 | None | n8n Workflows - Claude Code | 0 | devcontainer.json | [{"name": "n8n Workflows - Claude Code", "build": [{"dockerfile": "Dockerfile"}]}] |
| 2 | 112 | Receive updates when a new a | 1 | 0057_Activecampaign_Create_Triggered.json | [{"id": "112", "name": "Receive updates when a new account is", "type": "n8n-Trigger"}] |
| 3 | None | None | 1 | 1002_Acuityscheduling_Automate_Triggered.json | [{"nodes": [{"name": "Acuity Scheduling Trigger", "type": "n8n-Trigger"}]}] |
| 4 | 63 | Receive updates when a new li | 1 | 1085_Affinity_Create_Triggered.json | [{"id": "63", "name": "Receive updates when a new list is create", "type": "n8n-Trigger"}] |
| 5 | None | None | 19 | 0472_Aggregate_Gmail_Create_Triggered.json | [{"meta": {"instanceid": "d17dad75de867b08b7744d7ba00e53"}, "nodes": [{"name": "Gmail Trigger", "type": "n8n-Trigger"}]}] |
| 6 | None | None | 12 | 0480_Aggregate_Telegram_Automate_Triggered.json | [{"meta": {"instanceid": "f691e434c527bcfc50a22f01094756f14"}, "nodes": [{"name": "Telegram Trigger", "type": "n8n-Trigger"}]}] |
| 7 | None | None | 41 | 0681_Aggregate_HTTP_Create_Webhook.json | [{"nodes": [{"id": "799d2e0c-29b9-494c-b11a-d79c7ed4a06d", "name": "HTTP Trigger", "type": "n8n-Trigger"}]}] |
| 8 | None | None | 14 | 0691_Aggregate_Jotform_Create_Triggered.json | [{"meta": {"instanceid": "95b3ab5a70ab1c8c1906357a367f1b23"}, "nodes": [{"name": "Jotform Trigger", "type": "n8n-Trigger"}]}] |
| 9 | None | None | 14 | 0695_Aggregate_Stickynote_Create_Webhook.json | [{"meta": {"instanceid": "95b3ab5a70ab1c8c1906357a367f1b23"}, "nodes": [{"name": "Stickynote Trigger", "type": "n8n-Trigger"}]}] |

2. File Organizer

Built a desktop file management tool with a Java Swing frontend and a Python backend. The app lets users select a folder and automatically organizes files into categories such as Documents, Images, and Videos. Languages Used: Java, Python

GitHub Link: <https://github.com/TusharB-07/file>



GitHub

GitHub Profile: <https://github.com/TusharB-07>

Certificates & Achievements

Hack Summit 6.0 Hackathon



HackRush 2.0 Hackathon



Workshop and Bootcamp

Altruisty Bootcamp



IOT Workshop





CERTIFICATE

OF PARTICIPATION

Proudly presented to

Tushar Biswas

For active participation and valuable contributions as a **Contributor**
during **Open Source Connect India 2025**, held from
15th–30th August 2025.

Your dedication and enthusiasm helped create an environment of
learning, innovation, and shared growth.

We deeply appreciate your commitment to advancing open-source
development and strengthening our community network.

A handwritten signature in black ink, reading "G. Dastgir", written over a horizontal line.

Gulam Dastgir Shaikh
Programme Manager
OSCI'25



NexFellow



Artificial Intelligence Fundamentals by IBM



Competition



JAVA CERTIFICATION



Certificate of Accomplishment

Java (Basic)

PRESENTED TO

Tushar Biswas

The bearer of this certificate has passed the HackerRank skill certification test

Earned on: **24 Oct, 2025**

ID: 844F84734BD1

Harishankaran K

CTO, HackerRank

Virtual Internship



अखिल भारतीय तकनीकी शिक्षा परिषद्
All India Council for Technical Education



Certificate of Virtual Internship

This is to certify that

TUSHAR BISWAS

SRM Institute of Science and Technology, Kattankulathur

has successfully completed 10 weeks
Android Developer Virtual Internship
During July - September 2025

We wish him / her all the best for the future endeavours

Supported By : India Edu Program
Google for Developers



Karthik Padmanabhan
Developer Ecosystem Lead
MENA & India, Google



Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE



Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills



Certificate ID :4d7605e7060d39ae669cf74ffaf9f7c5
Student ID :STU68028ecd580e21744998093



GRADE- O (Outstanding): 90-100 | E (Excellent): 80-89 | A (Very Good): 70-79 | B (Good): 60-69 | C (Fair): 50-59 | D (Average): 40-49 | P (Pass): 30-39 | F (Fail): Below 30

NPTEL Progress – Programming in Java



tusharnbiswas07@gmail.com

NPTEL » Programming In Java

Announcements

About the Course

Q&A

Progress

Mentor

Review Assignment

Course Recommendations

Course outline

About NPTEL

How does an NPTEL online course work?

Week 0 :

Week 1 :

Week 2 :

Week 3 :

Week 4 :

Week 5 :

Week 6 :

Date enrolled 2025-07-23

Email tusharnbiswas07@gmail.com

Name Tushar Biswas



Course Progress

Assessment scores

Unit wise Progress

Grading and Certification Policy

Announcement:

You are currently receiving course related emails. [Click here to unsubscribe.](#)

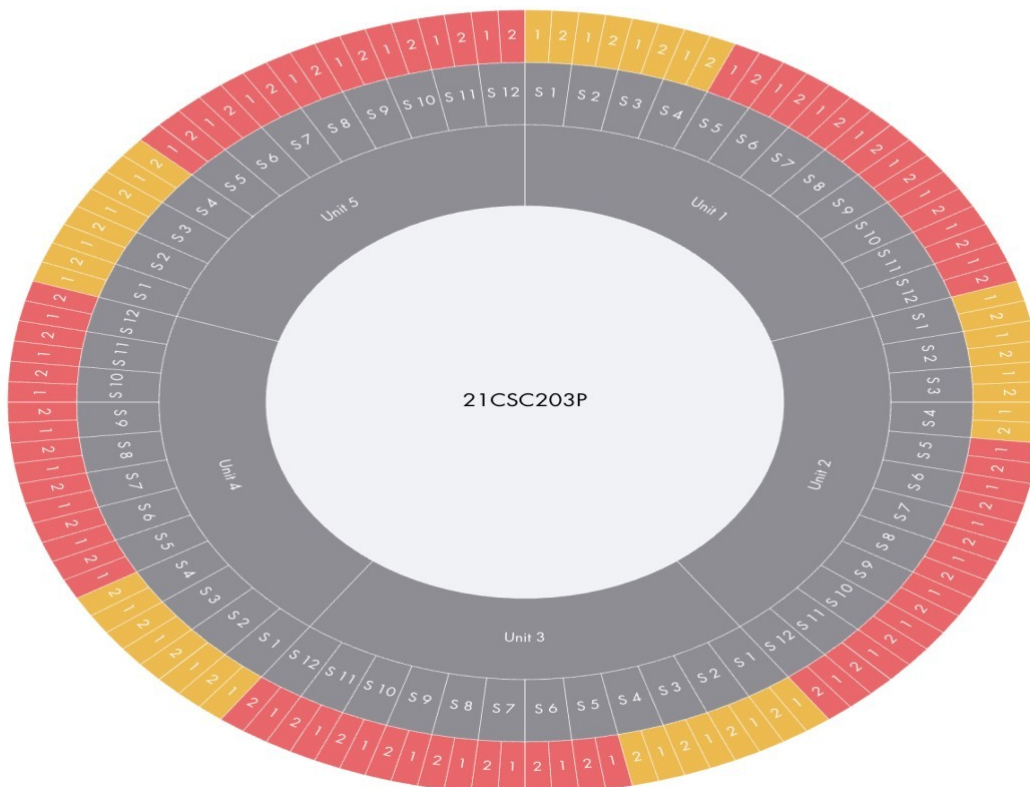
Discussion forum:

If you want to unsubscribe from forum [Click here](#)

E-Curricular Completion

Completed 4 sessions each from Units 1, 2, 3, 4, and 5 under the E-Curricular modules.
Proof: - E-Curricular Wheel Screenshot.

ADVANCED PROGRAMMING PRACTICE (21CSC203P)



HackerRank Problem Completion

Solved the following problems related to Python on HackerRank: Easy Level: 2 Problems
- Medium Level: 2 Problems - Hard Level: 2 Problems.

| | | |
|--|---|----------|
| Say "Hello, World!" With Python <small>Easy, Max Score: 5, Success Rate: 96.15%</small> | ★ | Solved ✓ |
| Arithmetic Operators <small>Easy, Python (Basic), Max Score: 10, Success Rate: 97.28%</small> | ★ | Solved ✓ |
| Write a function <small>Medium, Python (Basic), Max Score: 10, Success Rate: 90.41%</small> | ★ | Solved ✓ |
| Merge the Tools! <small>Medium, Problem Solving (Basic), Max Score: 40, Success Rate: 94.06%</small> | ★ | Solved ✓ |
| Maximize It! <small>Hard, Problem Solving (Basic), Max Score: 50, Success Rate: 83.35%</small> | ★ | Solved ✓ |
| Validating Postal Codes <small>Hard, Max Score: 80, Success Rate: 87.53%</small> | ★ | Solved ✓ |

Easy – 2 Problems

You made this submission 15 hours ago.

Score: 10.00 Status: **Accepted**

People who solved **Arithmetic Operators** attempted this next:

Python: Division

Division using `__future__` module.

Solve Challenge

Submitted Code

Language: PyPy3

Open in editor

```
1 if __name__ == '__main__':
2     a = int(input())
3     b = int(input())
4
5     print(a + b) # Sum
6     print(a - b) # Difference
7     print(a * b) # Product
8
```

Score: 5.00 Status: **Accepted**

People who solved **Say "Hello, World!" With Python** attempted this next:

Python If-Else

Practice using if-else conditional statements

[Solve Challenge](#)

Submitted Code

Language: PyPy3

[Open in editor](#)

```
1 if __name__ == '__main__':
2     print("Hello, World!")
3
```

Medium – 2 Problems

Score: 40.00 Status: **Accepted**

People who solved **Merge the Tools!** attempted this next:

Arrays

Convert a list to an array using the NumPy package.

[Solve Challenge](#)

Submitted Code

Language: PyPy3

[Open in editor](#)

```
1 def merge_the_tools(string, k):
2     n = len(string)
3
4     # Split the string into substrings of length k
5     for i in range(0, n, k):
6         substring = string[i:i+k]
7         seen = set()
8         result = ""
9         for char in substring:
10             if char not in seen:
11                 seen.add(char)
12                 result += char
13     print(result)
14
15
```


Score: 10.00 Status: **Accepted**

People who solved **Write a function** attempted this next:

Print Function

Learn to use print as a function

[Solve Challenge](#)

Submitted Code

Language: PyPy3

[Open in editor](#)

```
1 def is_leap(year):
2     # Leap year if divisible by 4 but not 100, or divisible by 400
3     if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
4         return True
5     else:
6         return False
7
8
```

Hard – 2 Problem

You made this submission 15 hours ago.

Score: 50.00 Status: **Accepted**

People who solved **Maximize It!** attempted this next:

Exceptions

Handle errors detected during execution.

[Solve Challenge](#)

Submitted Code

Language: Python 3

[Open in editor](#)

```
1 import itertools
2
3 if __name__ == '__main__':
4     n, m = map(int, input().split())
5     arrays = []
6
7     for _ in range(n):
8         arr = list(map(int, input().split()[1:])) # skip the first number which is the size
9         arrays.append(arr)
10
11     max_value = 0
12
13     # Generate all combinations picking one element from each list
14     for combination in itertools.product(*arrays):
15         current = sum(x**2 for x in combination) % m
16         if current > max_value:
17             max_value = current
```

Score: 80.00 Status: **Accepted**

People who solved **Validating Postal Codes** attempted this next:

Matrix Script

Decode the Matrix.

[Solve Challenge](#)

Submitted Code

Language: Python 3

[Open in editor](#)

```
1 regex_integer_in_range = r"[1-9][0-9]{5}$"
2 regex_alternating_repetitive_digit_pair = r"(?=(\d)\d\1)"
3
4 import re
5 P = input()
6
7 print(bool(re.match(regex_integer_in_range, P))
8       and len(re.findall(regex_alternating_repetitive_digit_pair, P)) < 2)
9
```

Solved the following problems related to JAVA on HackerRank: Easy Level: 2 Problems - Medium Level: 2 Problems - Hard Level: 2 Problems.

Welcome to Java!

Easy, Max Score: 3, Success Rate: 97.10%



Solved

Java If-Else

Easy, Java (Basic), Max Score: 10, Success Rate: 91.80%



Solved

Java Regex

Medium, Java (Intermediate), Max Score: 25, Success Rate: 91.99%



Solved

Tag Content Extractor

Medium, Java (Basic), Max Score: 20, Success Rate: 95.36%



Solved

Java Stack

Medium, Java (Basic), Max Score: 20, Success Rate: 92.80%



Solved

Java MD5

Medium, Max Score: 30, Success Rate: 98.22%



Solved

People who solved **Welcome to Java!** attempted this next:

Java Stdin and Stdout I

Get started with standard input and output.

[Solve Challenge](#)

Submitted Code

Language: Java 7

[Open in editor](#)

```
1 public class Solution {
2
3     public static void main(String[] args) {
4         /* Enter your code here. Print output to STDOUT. Your class should be named
5         Solution. */
6         System.out.println("Hello, World.");
7         System.out.println("Hello, Java.");
8     }
9 }
10
```

People who solved **Java If-Else** attempted this next:

Java Stdin and Stdout II

Familiarize yourself with Standard Input/Output.

[Solve Challenge](#)

Submitted Code

Language: Java 7

[Open in editor](#)

```
1 import java.util.Scanner;
2
3 public class Solution {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6         int n = scanner.nextInt();
7         scanner.close();
8
9         if (n % 2 != 0) {
10             System.out.println("Weird");
11         } else if (n % 2 == 0 && n >= 2 && n <= 5) {
12             System.out.println("Not Weird");
13         } else if (n % 2 == 0 && n >= 6 && n <= 20) {
14             System.out.println("Weird");
15         } else if (n % 2 == 0 && n > 20) {
16             System.out.println("Not Weird");
17         }
18     }
19 }
```

Java Regex 2 - Duplicate Words

Identify repeated words in the sentence, and delete all recurrences of each word after the very first word.

[Solve Challenge](#)

Submitted Code

Language: Java 8

[Open in editor](#)

```
16
17
18 class MyRegex {
19     String pattern =
20         "^((25[0-5]|2[0-4]\\d|1\\d{2}|0?\\d{1,2})\\.){3}"
21         + "(25[0-5]|2[0-4]\\d|1\\d{2}|0?\\d{1,2})$";
22 }
23
```

People who solved **Tag Content Extractor** attempted this next:

Java Lambda Expressions

[Solve Challenge](#)

Submitted Code

Language: Java 8

[Open in editor](#)

```
1 import java.io.*;
2 import java.util.*;
3 import java.util.regex.*;
4
5 public class Solution {
6     public static void main(String[] args) {
7
8         Scanner in = new Scanner(System.in);
9         int testCases = Integer.parseInt(in.nextLine());
10
11         while (testCases > 0) {
12             String line = in.nextLine();
13
14             // Regular expression to match valid tag-content pairs
15             Pattern pattern = Pattern.compile("<(.*?)>([^\<>]+)</\1>");
16             Matcher matcher = pattern.matcher(line);
17
```

Java SHA-256

Print the *SHA-256* hash value of a string.

[Solve Challenge](#)

Submitted Code

Language: Java 7

[Open in editor](#)

```
1 import java.io.*;
2 import java.security.*;
3 import java.util.*;
4
5 public class Solution {
6
7     public static void main(String[] args) throws Exception {
8         Scanner sc = new Scanner(System.in);
9         String input = sc.nextLine();
10        sc.close();
11
12        // Get MD5 MessageDigest instance
13        MessageDigest md = MessageDigest.getInstance("MD5");
14
15        // Compute the hash as bytes
16        byte[] digest = md.digest(input.getBytes());
```

People who solved **Java Stack** attempted this next:

Java Hashset

Find unique pair of strings using java Hashset.

[Solve Challenge](#)

Submitted Code

Language: Java 7

[Open in editor](#)

```
1 import java.util.Scanner;
2 import java.util.Stack;
3
4 public class Solution {
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8         while (sc.hasNextLine()) {
9             String input = sc.nextLine();
10            System.out.println(isBalanced(input));
11        }
12
13        sc.close();
14    }
15
16    public static boolean isBalanced(String s) {
```