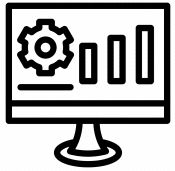
PROFFORMANCE+ International Higher Education Teacher Award 2024/25

Alan Mutka
Senior Lecturer/Research Associate
Area Head Web and Mobile Computing program

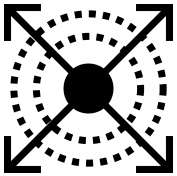
RIT
Croatia

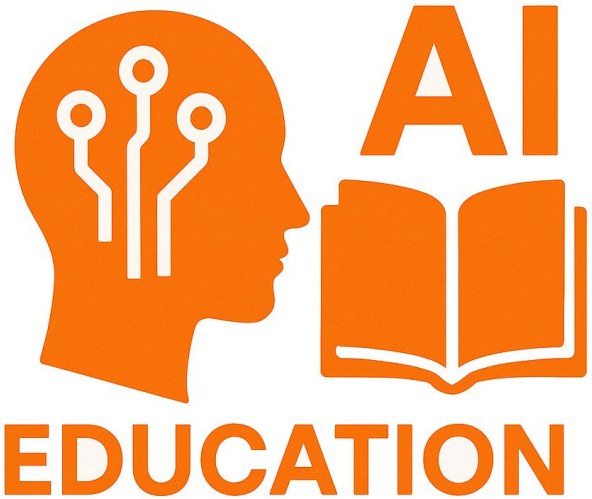
DATA-DRIVEN INSIGHTS



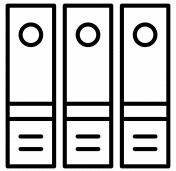
BETTER LEARNING OUTCOMES

SCALABILITY

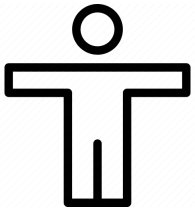




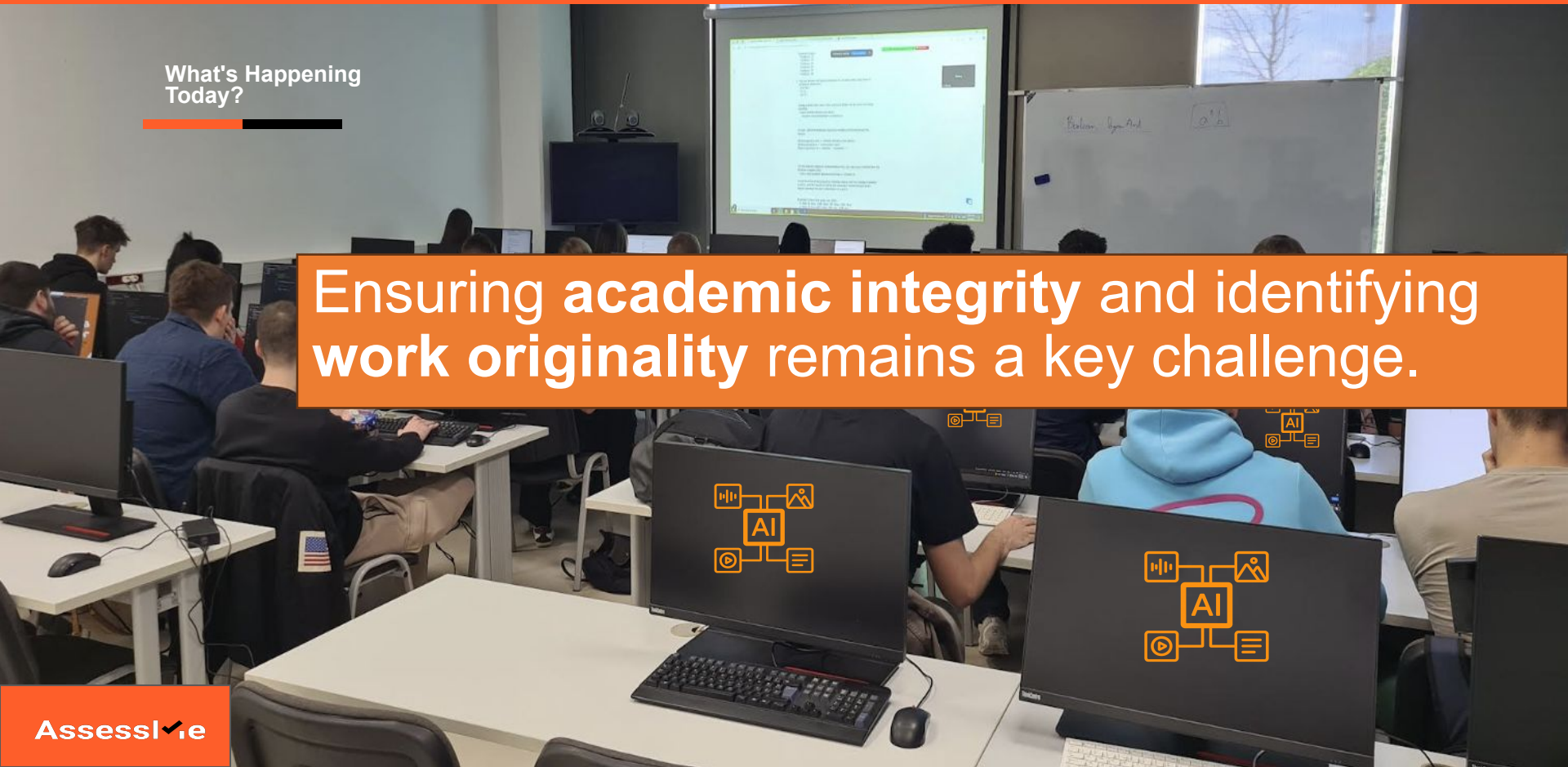
EFFICIENT ADMINISRATIVE TASKS



ENHANCED ACCESSABILITY

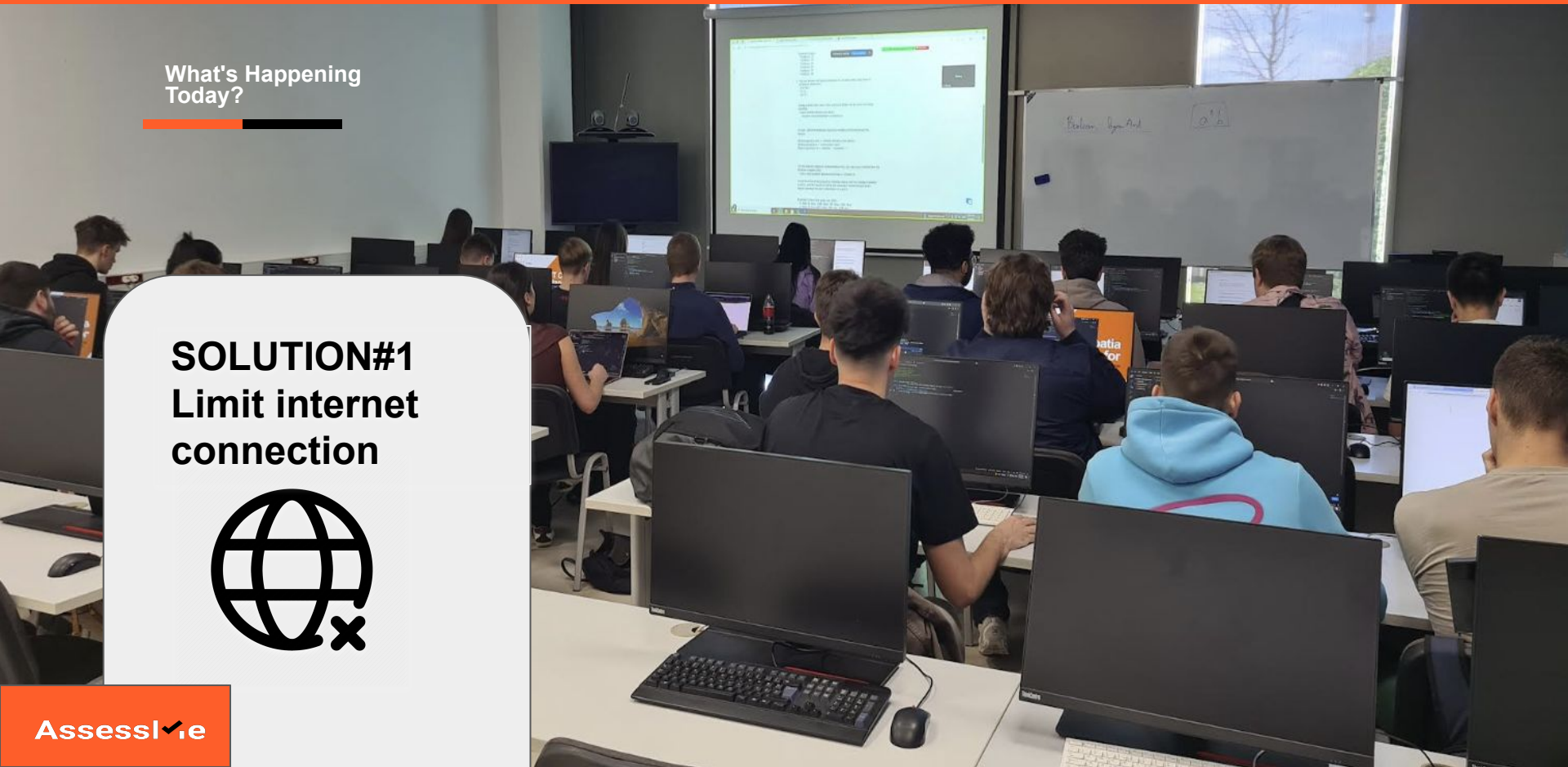


What's Happening Today?



Ensuring **academic integrity** and identifying **work originality** remains a key challenge.

What's Happening Today?

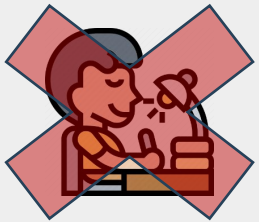


SOLUTION#1
Limit internet connection

What's Happening Today?

SOLUTION#2

No HW activity



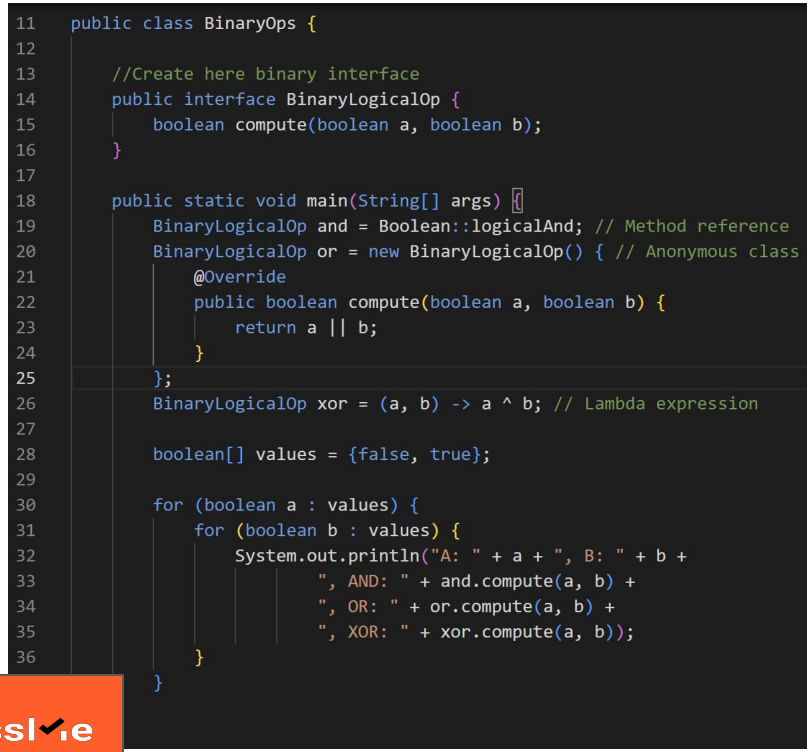
AssessMe

https://assessme.com.hr/

AssessMe monitors and validates students' programming assignment creation in real time, providing unique **learning metrics** that can be used for effective and targeted educational data mining.

AssessMe

AssessMe



```java
public class BinaryOps {

    //Create here binary interface
    public interface BinaryLogicalOp {
        boolean compute(boolean a, boolean b);
    }

    public static void main(String[] args) {
        BinaryLogicalOp and = Boolean::logicalAnd; // Method reference
        BinaryLogicalOp or = new BinaryLogicalOp() { // Anonymous class
            @Override
            public boolean compute(boolean a, boolean b) {
                return a || b;
            }
        };
        BinaryLogicalOp xor = (a, b) -> a ^ b; // Lambda expression

        boolean[] values = {false, true};

        for (boolean a : values) {
            for (boolean b : values) {
                System.out.println("A: " + a + ", B: " + b +
                        ", AND: " + and.compute(a, b) +
                        ", OR: " + or.compute(a, b) +
                        ", XOR: " + xor.compute(a, b));
            }
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```

The student began coding just 15 minutes before the deadline and spent 6 minutes on the assignment. The code was written in one continuous session, with each line added consecutively.

Assessl✓e

The student started coding at 14:40 and worked on the assignment for 45 minutes. The code developed gradually, reflecting a natural progression in the coding process.

AssessMe

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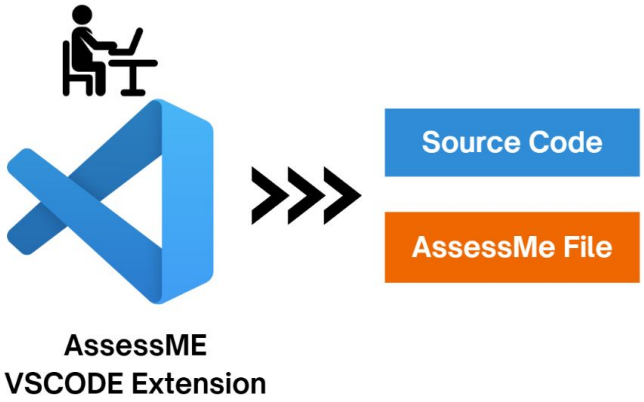
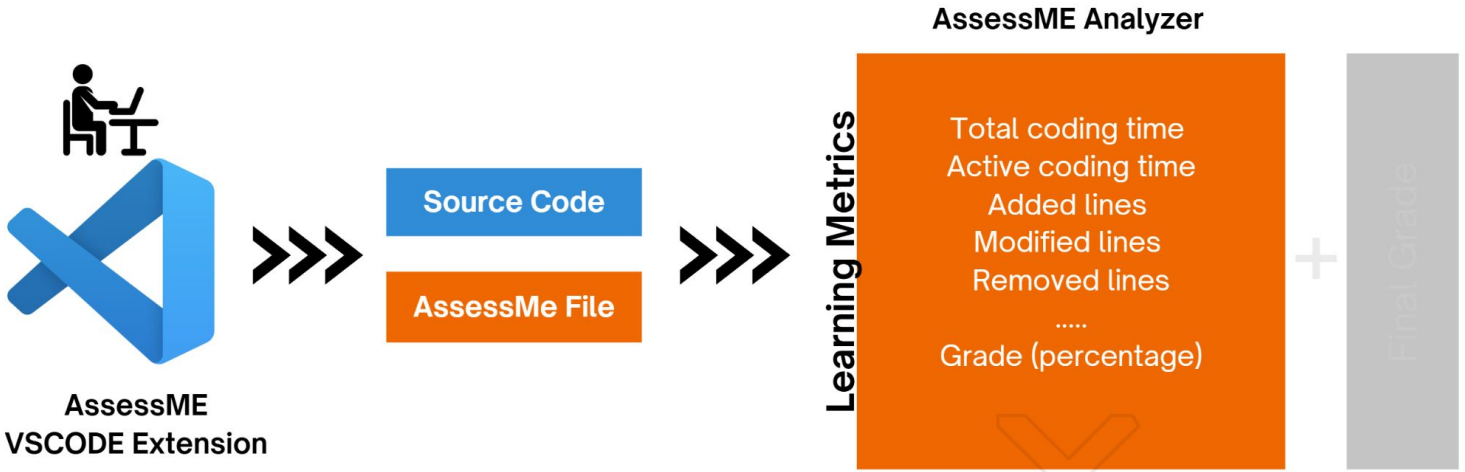
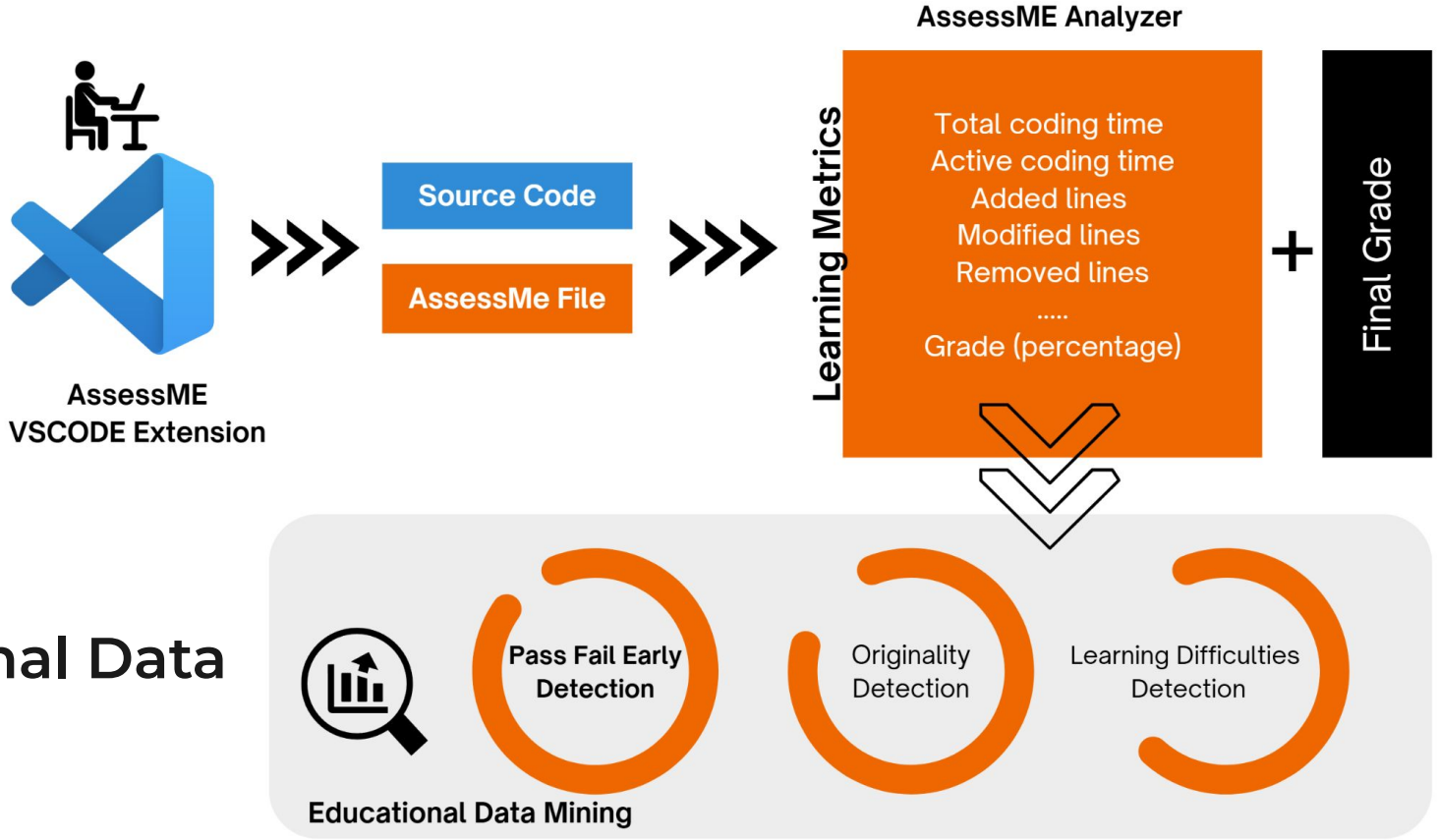


Data Acquisition



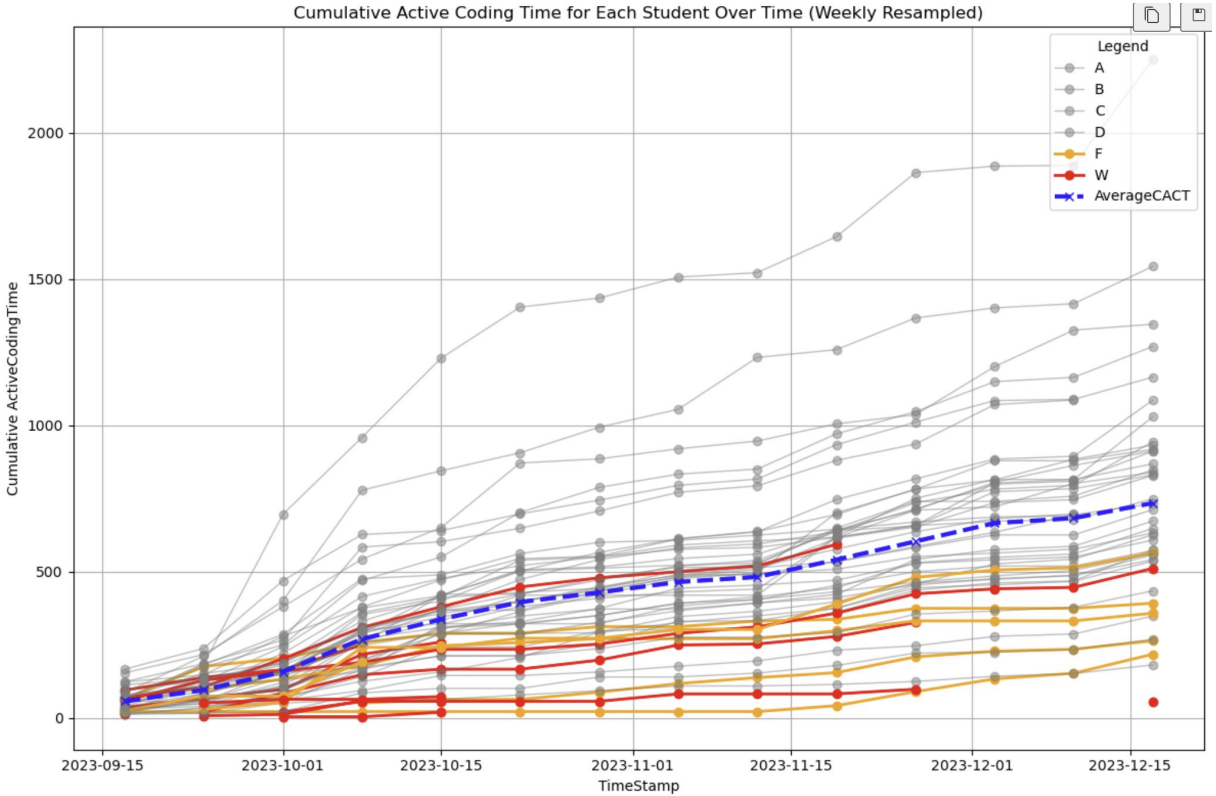
Learning Metrics



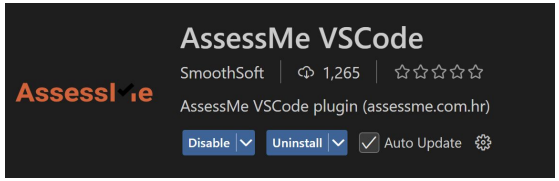
Educational Data Mining

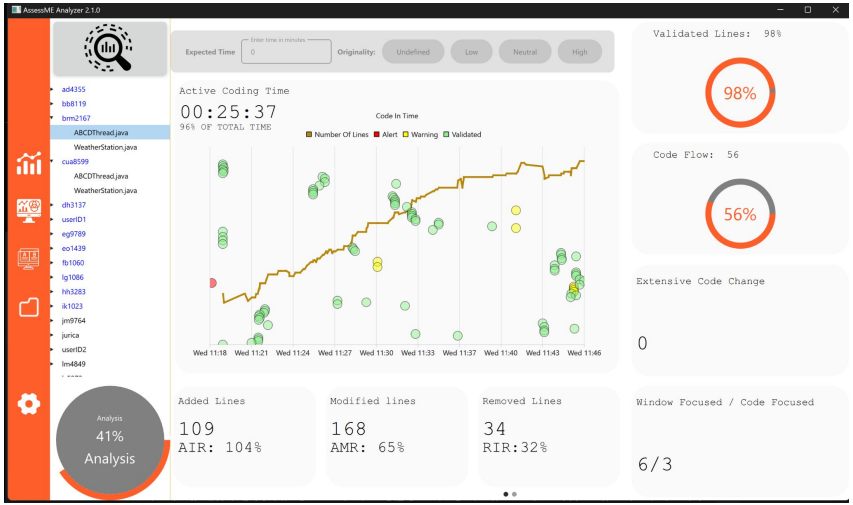
AssessME

Predicting Student Pass/Fail Status by Week 5 with **95% Accuracy!**



Mutka, Alan; Zivkovic, Fatima, Nižetić, Josip; Žagar, Martin
ENHANCING STUDENT RETENTION IN INTRODUCTORY PROGRAMMING COURSES: LEVERAGING ADVANCED LEARNING VALIDATION TOOLS AND EDUCATIONAL DATA MINING





Students' feedback:

Makes me do the actuall work, which is the most important thing at the end, not allowing me to take shortcuts

It pushes me to think more by myself and rely on other resources less.

It helps me acually learn what am typing, keeps me from copy-pasting hw

It makes me rely more on myself than AI.

- AssessMe is implemented across **all first-year programming courses** in our Web and Mobile Computing program.
- Launching pilot projects at **RIT's main campus and VIT Chennai** (CS domain)
- Extending AssessME into **new domains** (text, image, tables)



Thank you!