

# NSF Second Workshop on Computer in Context: Intelligence and Security Informatics

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# Introducation

- Applying ISI in Software Design course (for Mathematics and Computer Science majors)
- To Develop guided labs to help students understand the subject matter.
- Using a continuing scenario to make connection to all labs.
- Give students idea on how they can apply the software design skills in all aspects of solving a problem.

# The Topics

- Programming review
- Graphics
- Creating objects and Unit testing
- File and text processing
- Inheritance
- Recursion

# Format of the Labs

- Framework of the program are provided to students.
  - Key position in the programming are left blank and the students need to fill in.
  - Expected results are provided to students so they can perform a self evaluation on whether they have done the labs correctly.

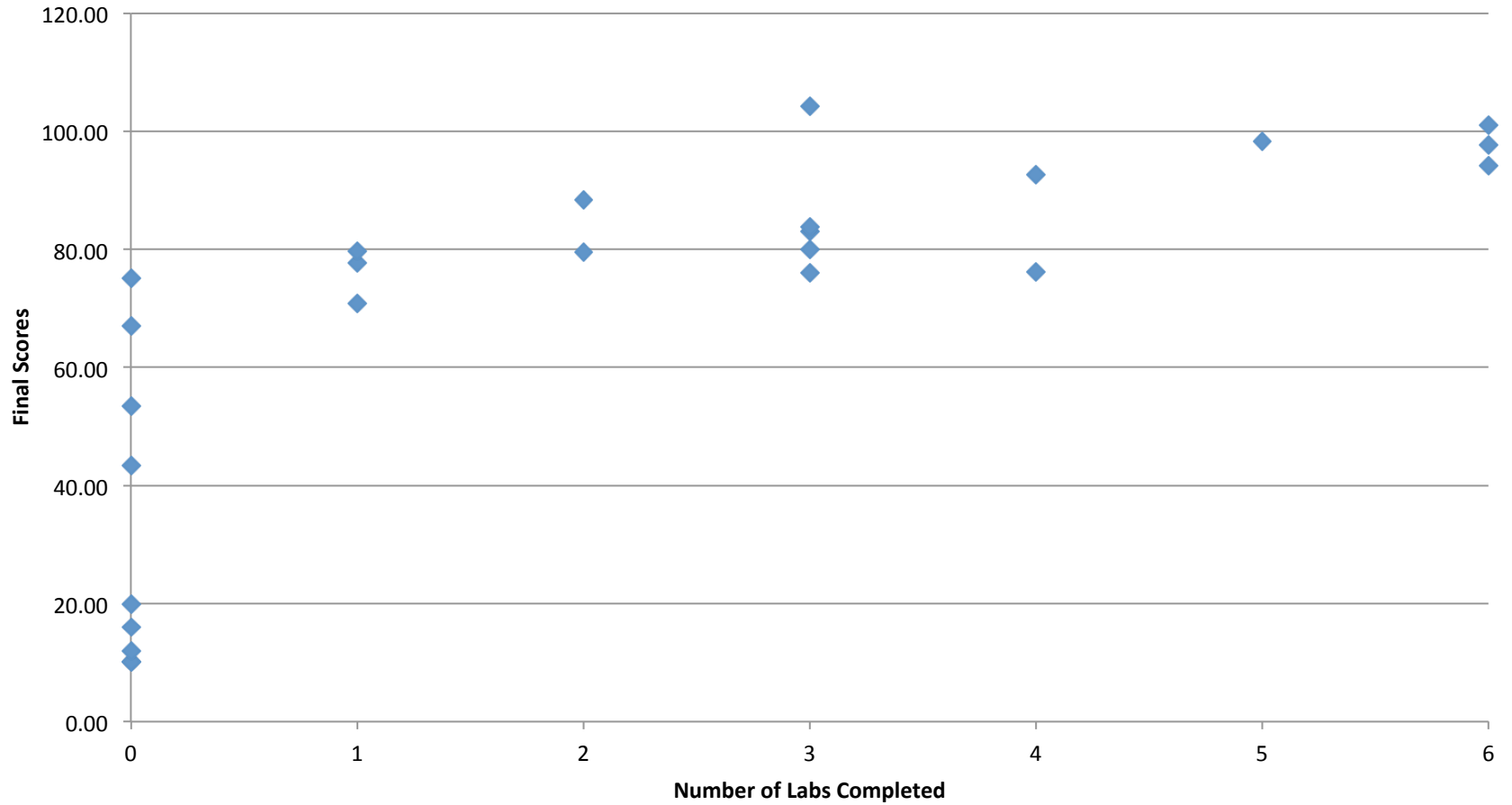
# The Scenario

This morning, you received an email from your friend that looks like a spam. You don't believe that the email is actually sent from your friend and you want to find out. You call your friend but (s)he is not available, so you need to figure it out yourself. Fortunately, you have copy of your friend's emails saved in a text file. You want to write a Python program to find out if the email is actually from your friend. We will do this in this lab session.

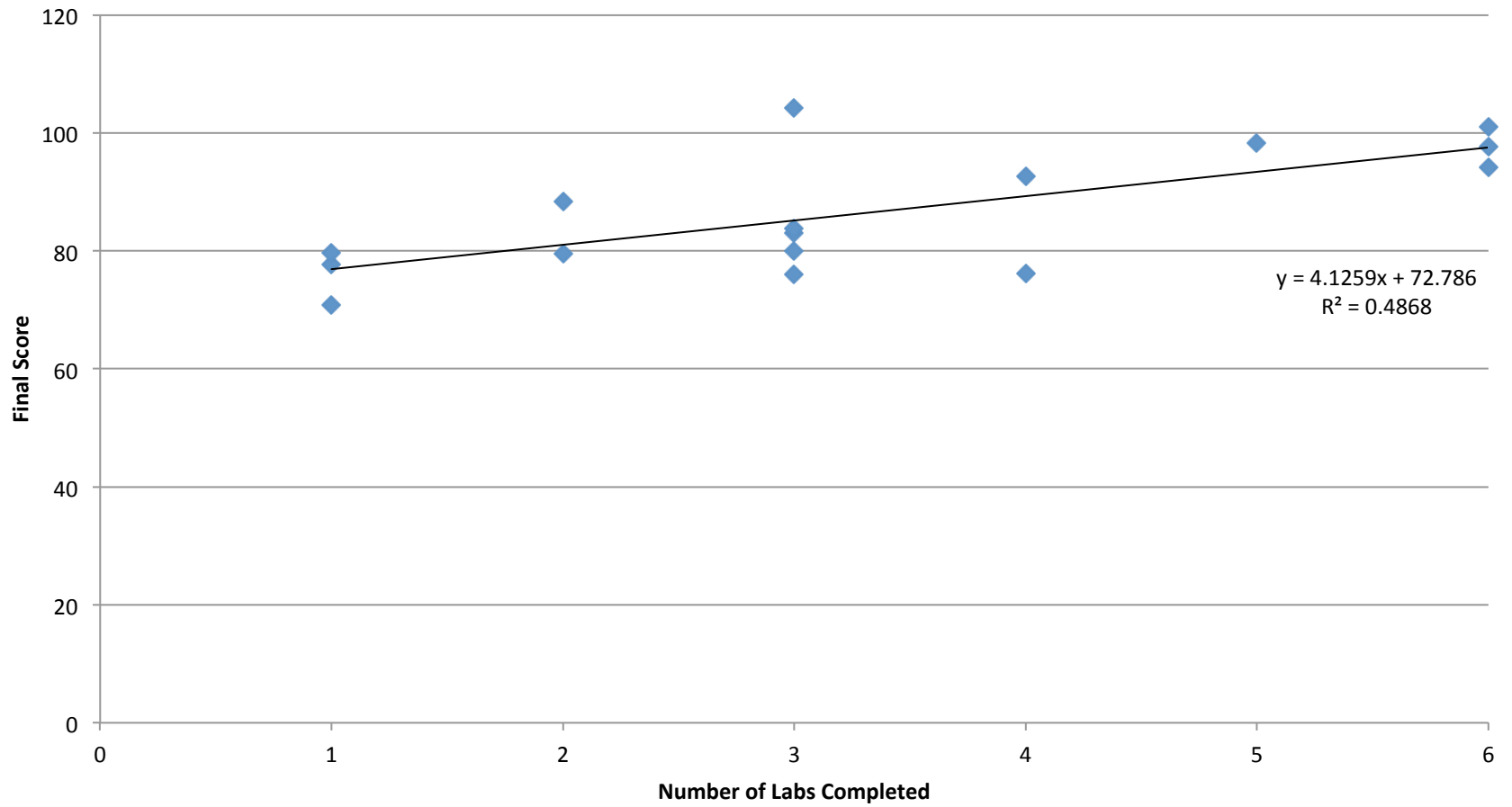
# Deployment

- We have deployed the initial version of the labs to a CS2 course in the Fall.
  - 25 students.
  - The labs are optional.
  - Solutions made available to students after submission deadline.

# Results



# Results





# Results

Comparison (x vs. y)	Mean(x) – Mean(y)	p-value	Result
Group “0” vs. Group “3”	-48.19	0.0003857 *	Significant
Group “0” vs. Group “6”	-59.19	6.971e-05 *	Significant
Group “3” vs. Group “6”	-11.00	0.03734 *	Significant

# Future Work

- Continue improving the labs.
- Use the labs in subsequent offerings of the course to collect more data.
- Present the results in conference
- Dissemination of the results.
- Make the labs available to instructors.