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Risk Management
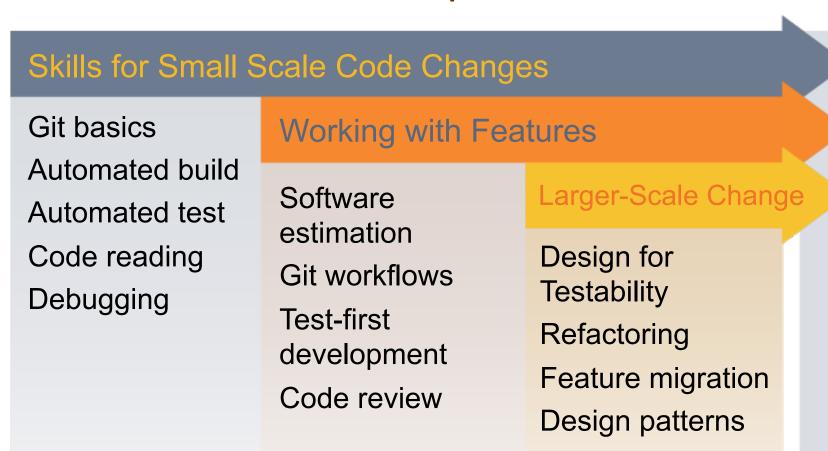
COMP23311: Software Engineering

Week 11

Duncan Hull

The University
of Manchester

Course Unit Roadmap

Skills for Small Scale Code Changes

Git basics
Automated build
Automated test
Code reading
Debugging

Working with Features

Software estimation
Git workflows
Test-first development
Code review

Larger-Scale Change

Design for Testability
Refactoring
Feature migration
Design patterns

Open Source Challenge

1	2	3	4	5	6	7	8	9	10	11	12

Link to the Coursework/Exam

- We will:
  - Recap some core topics
  - Try the practice exam
  - Work on the coursework

- Exam: There may be questions about risk management in the exam

What is a Software Risk?

- An event with negative consequences for a software project.

- An event that has not happened yet.

- An event that might happen.

Risk Exposure

- Not all risks are equally worrisome.

- Need to consider:
  – The likelihood of the risk
  – The impact of the risk (potential cost)

- The combination of these two gives the risk exposure

Example Risk Exposure

Risk Impact	Risk Likelihood		
	Very likely	*Possible*	*Not likely*
Loss of life	Catastrophic	Catastrophic	Severe
Team fails exercise	Severe	Severe	High
Team loses significant proportion of marks	Severe	High	Moderate
Team loses 1 or 2 marks	Moderate	Low	Low

Mitigation Planning

- Mitigate the risk by:
  - Taking steps to make it less likely that it will happen
  - Taking steps to reduce the impact if the risk happens

- E.g.
  - Risk: we have only one DBA and database access is mission critical for our software. What if she gets sick or finds a better position?

Contingency Planning

- Putting a plan in place for what to do if a severe risk occurs.

- This does not affect the likelihood that the risk will occur

- But it helps because:
  - Staff don't waste time/lose more money trying to figure out what to do.
  - Resources can be set aside to ensure the organisation can cope with the negative event.

Git for Risk Management

- What kinds of risk does Git mitigate or remove?

Continuous Integration for Risk Management

- What kinds of risk do CI servers mitigate?

Automated Test Suite for Risk Management

- What kinds of risk do automated tests mitigate?

Practice Exam

- 20 minutes to answer 10 questions.

- In the real exam, you will have an hour to answer 30 questions

- In previous years, students frequently answered questions wrongly when:
  - They include "All of the above"/"None of the above" style answers.
  - They include a "not" in the question.
  - They covers material taught towards the end of the semester.

Start the Practice Examination

- Find it on Blackboard under "Assessments" ->
  "Examination"