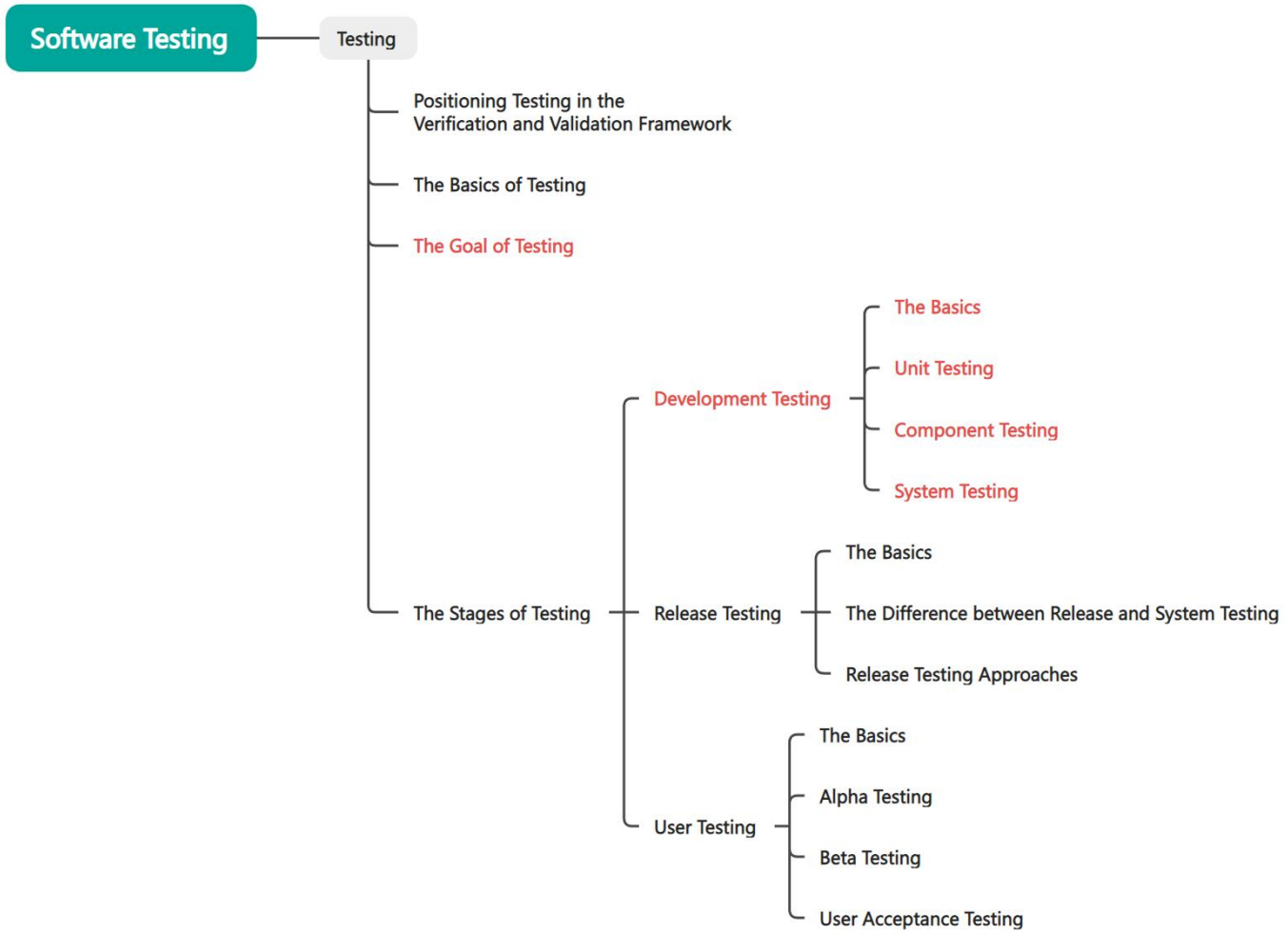
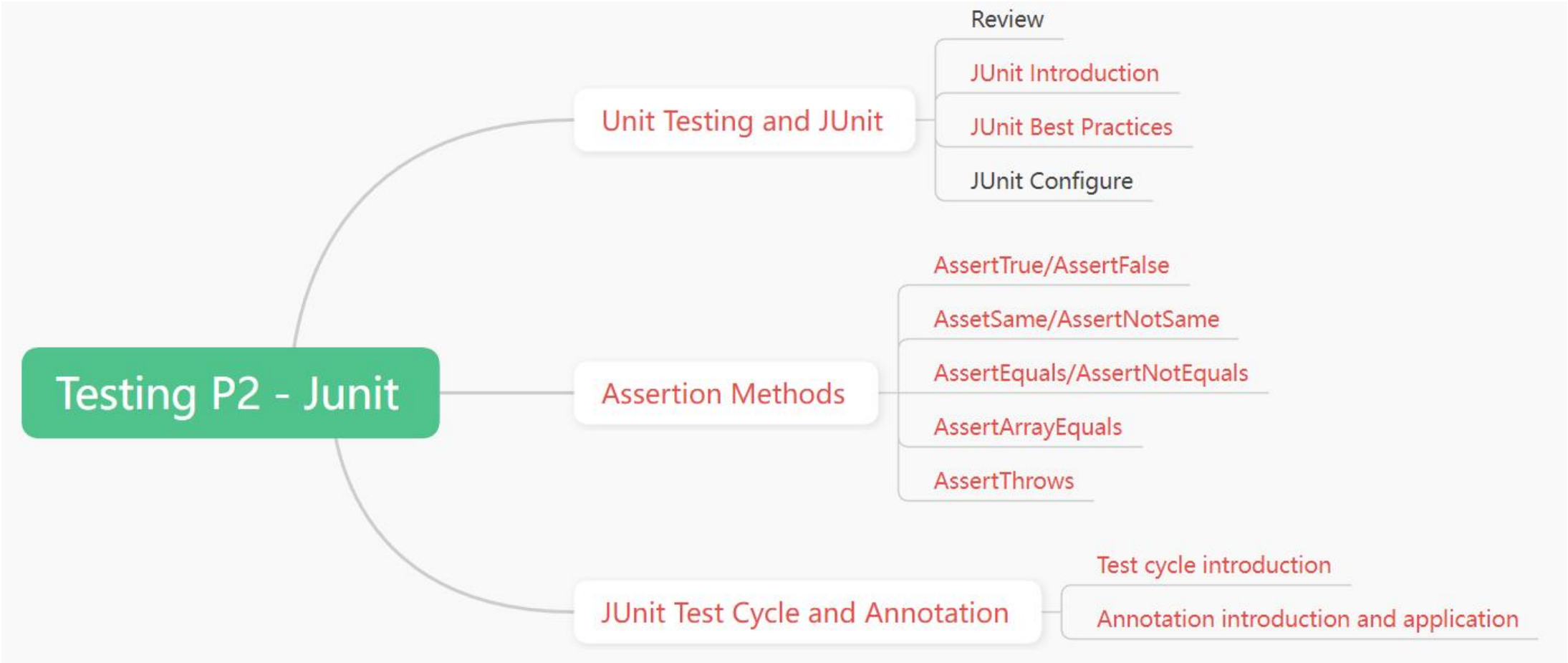
Week 10 Structure



Week 10 Try-to-do

- Understand the importance of doing software testing.
- What do we test in different **development testing stages** (i.e., unit testing, component testing, system testing)
- Prioritize **Unit testing**, focusing on the process we do for an object class (testing attributes, methods, and states), the strategies we can use (e.g., partitioning) and the definition of automated testing framework.
- Practice Week 10 tutorial question
- Practice past exam papers (*no solution can be provided but welcome to office hour for suggestions*)

Week 11 Structure



Week 11 Try-to-do

- Do try the codes uploaded on LMO
- Understand all the assertion method covered in the lecture
- Understand the annotations, especially the basic ones (e.g., @BeforeAll, @BeforeEach, @Test)
  - @Test -> 2 marks
  - @test/@TEST/@Tests -> 0 mark
- Practice Week 11 tutorial questions
- Practice past exam papers

Week 11 Sample Question

Question A8

During the development of a basic user authentication system, you are required to create JUnit test cases to validate the functionality of the *UserAuthenticator* class. This class includes a method named *isValidPassword*, which verifies if a provided password satisfies specific criteria.

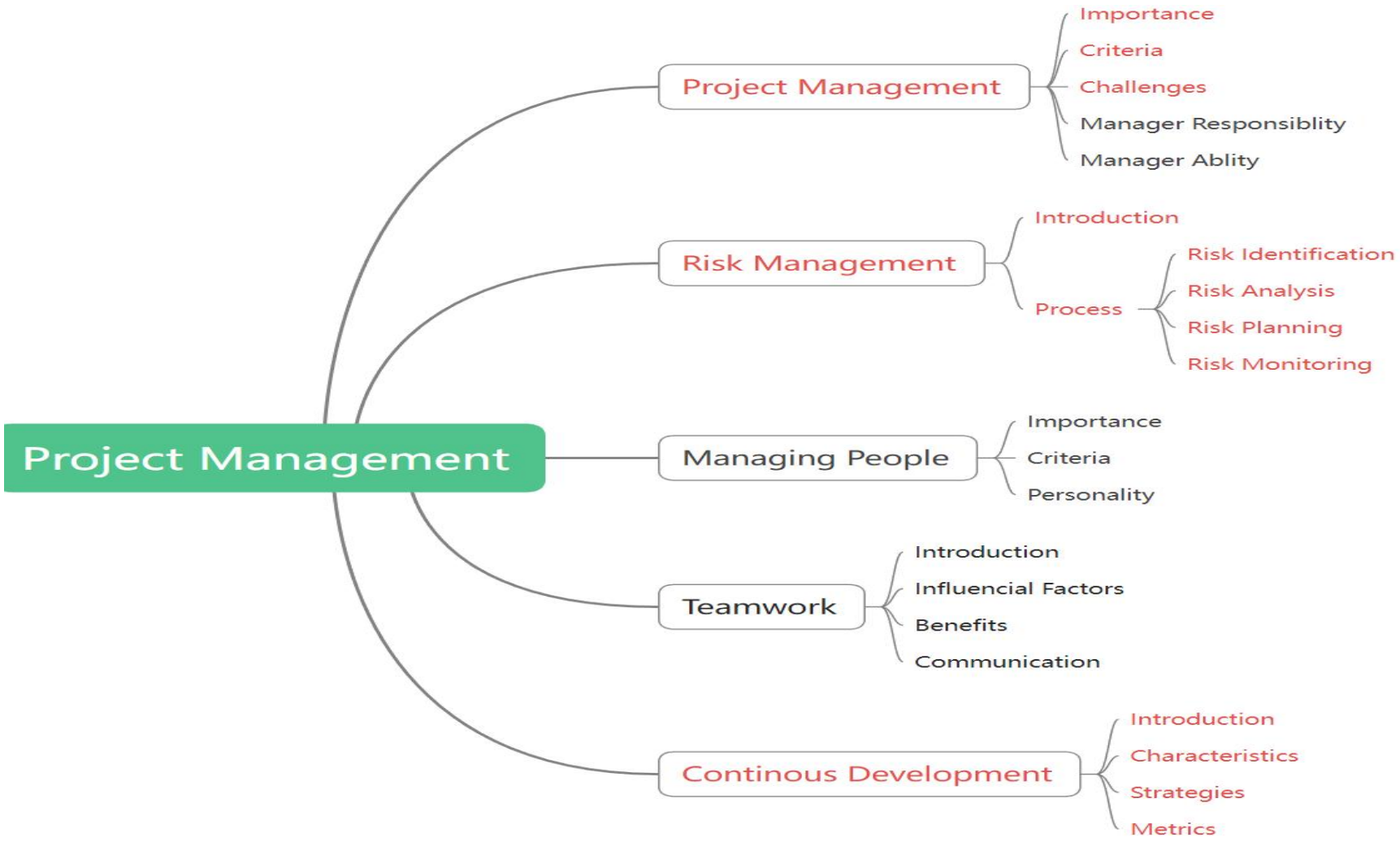
```
public class UserAuthenticator {
    public boolean isValidPassword(String password) {
        // Logic to check if the password meets certain criteria
        // For example, it must be at least 8 characters long
        // and contain at least one uppercase letter.
        return password.length() >= 8 && containsUppercase (password);
    }

    private boolean containsUppercase (String password) {
        for (char character : password.toCharArray()) {
            if (Character.isUpperCase(character)) {
                return true;
            }
        }
        return false;
    }
}
```

Write a JUnit test case, named *testIsValidPassword*, to evaluate the *isValidPassword* method functionality in the *UserAuthenticator* class. Ensure that the test covers both **valid** and **invalid** password scenarios. (11 marks)

- Import statements (e.g., import static org.junit.Assert.*;) are **not** required.
- **Understand the given code first**, to decide the assert methods you would use.
- Read the question carefully; **two types of test** (the valid one and invalid one) are required.
- If the test case is given (e.g., we specify the test case to be 2+3), use the given data. Otherwise, design a test case on your own.
  - assertTrue(authenticator.isValidPassword ("**SecurePwd1**"))

Week 12 Structure



Week 12 Try-to-do

- Understand the **basics of project management** (what is it, why important, how to have a good management)
- Understand **ALL stages involved in risk management**, not only the general concepts/importance, but the details (e.g., risk identification - risk checklist, risk analysis - priority table based on probability and effect, ect)
- Undestand the definition, charateristics, strategies, and metrics involved in **continuous improvement**
- Practice Week 12 tutorial questions
- Practice past exam paper

Week 12 Sample Question

Question A9

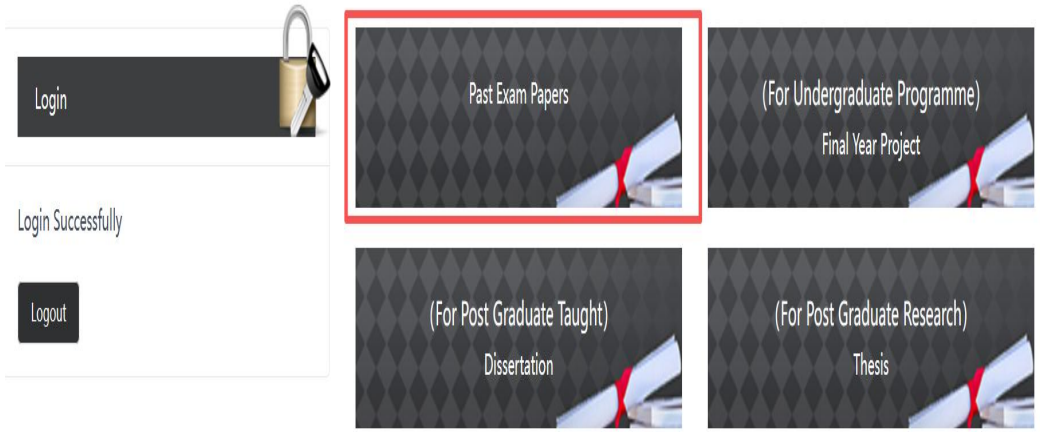
Please list and explain the three categories of strategies involved in the Risk Planning phase, and provide related examples to each of them. (12 marks)

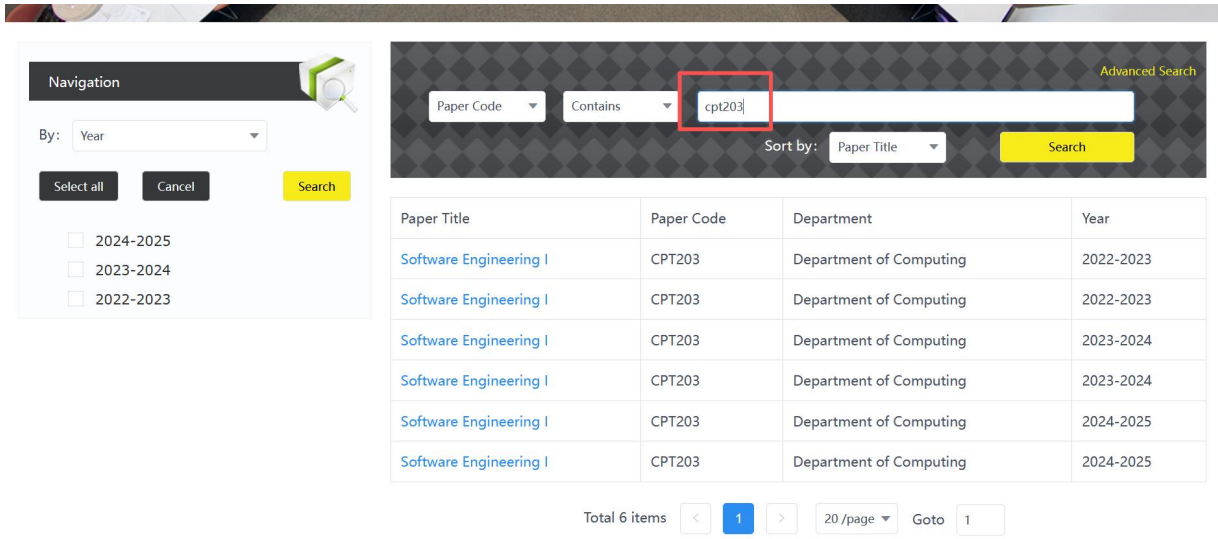
Read the question carefully. There can be more than 1 requirement in one question description.

- List their names
- Explain the concepts
- Plus example of each categories

Finding the Past Exam Paper

- https://lib.xjtlu.edu.cn/





Overall

- When reviewing W10-12, the highlighted in red parts here can be your **priority** (but not necessarily the only)
- Try the **TTL questions, CW2 questions** (e.g., if you were not doing the Q5 Junit testing question, you may want to try)**, and Junit codes**
- Try **the past exam papers,** though solution to the past exam is not supposed to be provided, you can try the questions and come for checks and suggestions.
- Support (SD423):
  - Email: Yihong.wang@xjtlu.edu.cn
  - Office hour: 27th, 28th, 29th, 30th, 10:00 - 11:30 and 14:00 - 16:00 everyday
  - Also support content of Week 8&9 (Design)