Use Case
What does the customer want?

Ways to specify requirements:
- Use case (written by programmers)
- Stories (usually written by clients)

How to use
- Stories collect high-level goals, used to prioritize tasks
- Use cases provide more structure
Example Story

Grade calculation

Create a program that will help me calculate my grade for a course
I want to enter the scores and percentages for each type of item
Program will calculate and display the grade

Generates questions to be discussed with client.
- How many scores?
- Should number of scores vary?
- What is grading scale?
- Do you want to store the information?
Grade Calculation Use Case

Calculate course grade
1. Enter midterm %
2. Enter final %
3. Enter homework %
4. Enter midterm score
5. Enter final score
6. Enter homework score
7. Click Calculate button
8. Course score is displayed

Alternate Flow: Invalid %
1. If at 1, 2 or 3 and user enters a value that is <0 or >100, display invalid % error

Alternate Flow: Invalid score
1. If at 4, 5 or 6 and user enters a value that is <0 or >100, display invalid score error

Alternate Flow: Incorrect % total
1. When Calculate button is pressed, if midterm % + final % + homework % do not equal 100%, display invalid total % error
Example Story

Tic-Tac-Toe

Create a program that will allow two players to play tic-tac-toe
Tic–Tac–Toe use case

Play tic-tac-toe

1. 3x3 playing board is displayed
2. Player 1 places an ‘X’ on one of the cells
   2a. Cell is not available, display error and repeat 2
   2b. Player has 3 Xs in a row, diagonal or column. Display “winner” message and end game
3. Player 2 places an ‘O’ on one of the cells
   3a. Cell is not available, display error and repeat 3
   3b. Player has 3 Os in a row, diagonal or column. Display “winner” message and end game
4. Repeat 2–3 until end of game OR no cells are empty.
Simple Example 3

Place order
1. The User Logs In
2. User selects item from list
3. User Checks Out

User Logs In
1. Enter user ID
   1a. User ID is invalid. Display error message.
2. Enter password
   2a. Password is invalid. Display error message.
3. Order screen is displayed.

What would be in User Checks Out?
From Wikipedia:

- Use cases describe the system from the user's point of view.
- Each use case is a complete series of events, described from the point of view of the actor.
- Each use case focuses on describing how to achieve one goal or task.
- For most software projects this means that multiple, perhaps dozens, of use cases are needed to define the scope of the new system.
Use Case Focus

Again from Wikipedia:

- The degree of formality of a particular software project and the stage of the project will influence the level of detail required in each use case.
- Use cases should not be confused with the features of the system under consideration. A use case may be related to one or more features, and a feature may be related to one or more use cases.

Feature: place call to customer
Use Cases: set up customer, make contact

Features in requirements doc or stories
Use Case Pitfalls (common mistakes)

- Use cases treat the system as a black box*
- Interactions with the system, including system responses, are from user’s perspective
- Use cases focus on what the system must do, not how it is to be done (avoids the trap of making assumptions about how the functionality will be accomplished).

*e.g., “store item in an array” would not be part of a use case
Use Case Templates

- No standard template for documenting detailed use cases.
- There are a number of competing schemes, you should use templates that work best for your particular project.
- Possible sections include:
  - Name, written in verb–noun form such as Borrow Books, Withdraw Cash
  - Pre– and Post–conditions
  - Alternative Paths
- Wikipedia includes others…
Helpful sites

- http://www.cragsystems.co.uk/use_case_tutorial.htm