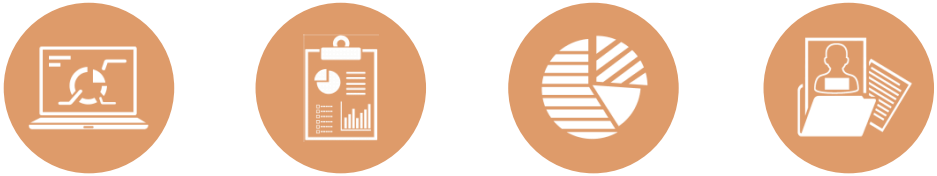
PMI®—Agile Certified Practitioner (PMI-ACP)®

Agile Estimation: Part 1

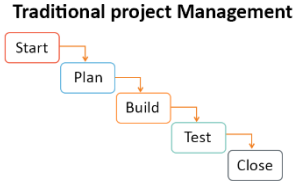


Objectives

After completing this lesson, you will be able to:

- Explain the concepts Relative Sizing or Story Points
- List the various methods used for estimation
- Explain the concept of ideal days and the factors affecting ideal days
- Describe the Agile planning poker technique

Determining the size of a project is important to finalize its expected completion date and its resourcing:



In traditional (sequential) projects, the commonly used size measures are as follows:

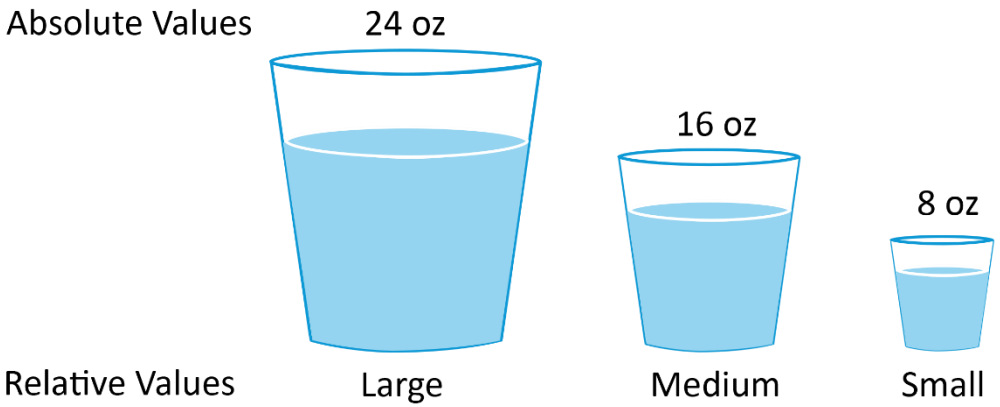
- Lines of code
- Function points

In Agile, the estimates are expressed in the following terms:

- Story Points
- Ideal days

Relative Estimating is an important aspect in agile estimation.

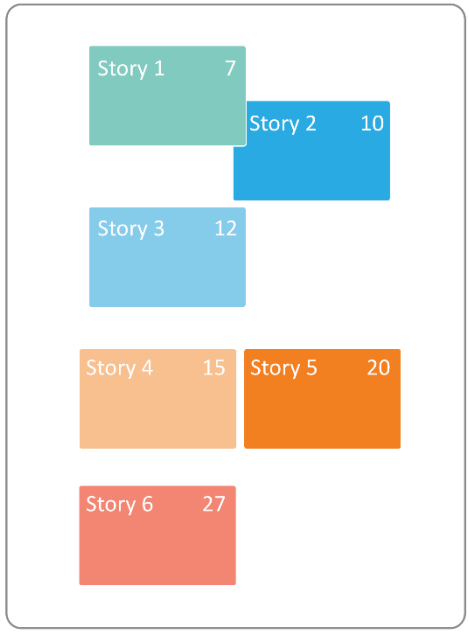
Q Which is easier to estimate?



Story Points

Story Points are the unit of measurement for expressing the overall size of a user story and their associated effort.

- The number of Story Points are a relative measure.
- Story Points are compared to one another.
- Story Points should be determined by the team using estimation techniques like Planning Poker or Affinity Estimating.
- Story Points are unique to a project. Story Points cannot be compared to other projects.



Following are some important considerations in Story Points:

Size of a Task

The size (and hence the Story Points assigned) of a story depends upon the following factors:

- How hard is it (complexity)
- How much of it there is (effort involved)
- How risky is it

Relative Values

Story Points are a relative measure of size and the absolute numbers are not very important

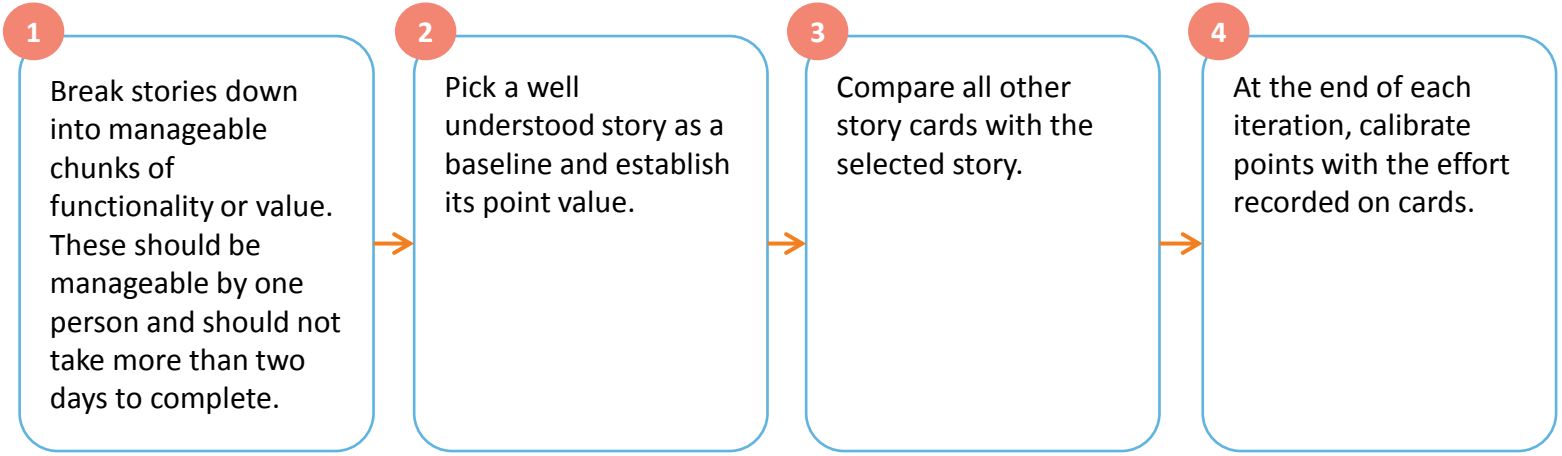
E.g., If the search feature is an 8 and the login screen is a 2, the search feature is about 4 times the size of the login screen.

Estimation

Estimation has to be done using a benchmark; relative values can be used

- Select the smallest story and estimate as 1 Story Point
- Select a medium-sized story and estimate it as 5 Story Points

Best practices to be followed while estimating a story point are given below:



Estimate by Analogy

Story point estimations can be done effectively through comparisons. A few considerations while estimating by analogy are as follows:

Comparing a user story to multiple other stories

This is based on the premise, “This story is like that story, so its estimate is what that story’s estimate was.”

E.g., If story A is similar to story B, their estimates are also likely to be similar.

Establish multiple benchmarks

Instead of using a gold standard, triangulate.

E.g., When two or three stories of different sizes set out as benchmarks and the comparison could be Story A is bigger than Story B, but perhaps smaller than Story C. So, if Story C is a Large and Story A is a Small, then Story B is likely to be close to Medium.

Value Points

Agile emphasizes delivering value and outcomes.

- Value points show the relative business value of a story.
- Applying the same relative sizing techniques to the value of stories helps provide a view into the overall value delivery.
- This also engages the Product Owner and business stakeholders in quantifying the value of the stories/features.
- In turn, it brings real power to measurements.

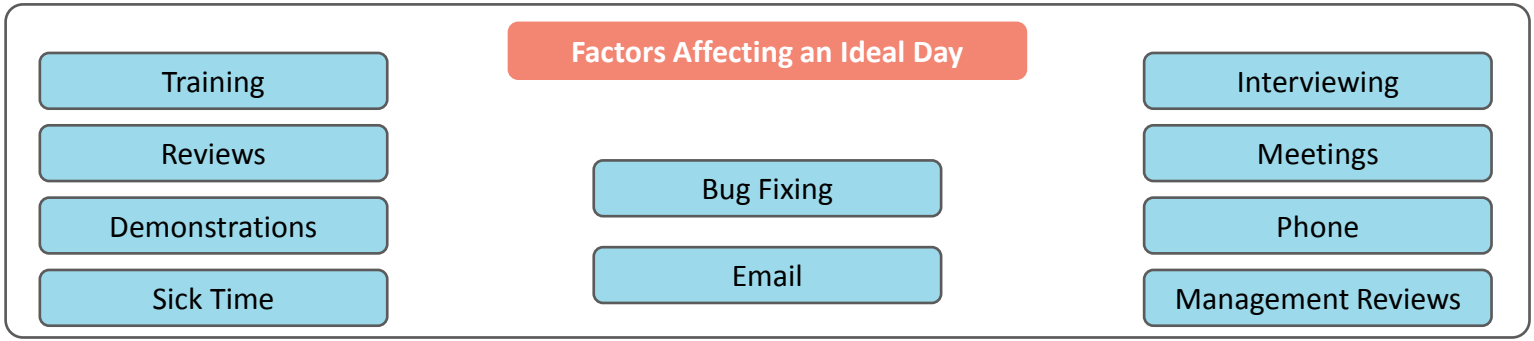
An ideal day estimate answers the question, how long would it take to complete a story, given that,

- it is the only task being worked on,
- there were no interruptions, and
- everything needed (clarifications, dependencies) is available.

Once the ideal day estimate has been arrived at, it has to be converted to the actual (elapsed) days based on the level of distraction to be accounted for.

Note: In XP, the term Perfect Engineering Days is used.

There can be several distractions that can arise when an Ideal Day estimate is being converted to the actual days. Following are the various factors that give rise to distraction:



Example:

On a normal work day of 8 hours, a developer may put in only about 5 hours of programming work. So, if the development time was estimated at 8 hours, it does not mean it will be completed in one day. The elapsed time might be closer to one and a half day.

Given below is a comparison of the two units of size measures used in Agile projects, viz., ideal days and Story Points. Each approach has its own set of advantages.

Story Points

- Story Points help drive cross-functional behavior
- Story Point estimates do not decay
- Story Points are a pure measure of size
- Estimating in Story Points is typically faster

Ideal Days

- Ideal days may be different even for two different members of the same team
- Ideal days are easier to explain outside the team
- Ideal days are easier to estimate at first
- Ideal days can force companies to confront time wasting activities

Agile estimation should aim for estimates that are reasonably predictable on aggregate and not strive for precision. Precise estimation process can be time consuming and expensive. Usually, a non-linear scale is used for estimation. The two commonly used non-linear scale are as follows:

Non-Linear Scale—Fibonacci Series	1,2,3,5, and 8
Non-Linear Scale—Doubles	1,2,4, and 8

One way to estimate story point effort is to use a game of planning poker.

- Each member of the team receives a deck of numbered cards.
- The product owner reads each story card and answers any questions.
- Each team member estimates the effort using a relative estimate and everyone shows their hand at once.
- Outliers (high or low) talk about why they made their estimate.
- After the discussion, team members re-estimate until consensus is reached.

The product owner reads a User Story and the four team members provide their estimates using the planning poker cards.

Estimator	Round 1	Round 2
Ken	3	5
Mike	8	5
Esthar	2	5
Mary	5	8

QUIZ 1	Project A has 1000 Story Points and Project B has 600. Based on this, how much larger is Project A over Project B.

a. 40% larger

b. You cannot compare the Story Points of two different projects

c. 66% larger

d. 400 Story Points

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Answer: b.

Explanation: Since Story Points are relative comparisons based on stories specific to one project, they cannot be compared to another story.

QUIZ 2	The definition of an Ideal Day is:

a. A day without any interruptions, distractions, and access to all the tools and information needed to complete a task

b. A day where the maximum number of user stories are completed

c. A day where no defects or blockers are recorded within an iteration

d. A day the team shows up for work at the same time

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Answer: a.

Explanation: An Ideal Day is a day without any interruptions, distractions, and access to all the tools and information needed to complete a task.

QUIZ 3	Which of the following is not true?

a. Story Points help drive cross-functional behavior

b. Story Points estimate do not decay

c. Story Points are not pure measure of size

d. Estimating in Story Points is typically faster

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Answer: c.

Explanation: Story Point is a relative measure of size.

QUIZ 4	Which of the following is not a benefit of Relative Sizing?

a. It is faster and easier to determine relative sizes

b. There is little training required to estimate

c. It establishes a precise measure for estimating effort

d. It can often be done collaboratively

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b. There is little training required to estimate

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d. It can often be done collaboratively

Answer: c.

Explanation: Relative sizing is not precise, but it is accurate.

QUIZ 5

What is a good target for sizing a user story?

a. Manageable by one person

b. No longer than the length of the iteration

c. Be completed in less than one to two days

d. All of the above

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d. All of the above

Answer: d.

Explanation: A user story should be sized that it can be completed by one person and be completed in less than one to two days. A user story that is longer than an iteration would not be a good candidate for inclusion in an iteration.

QUIZ 6

Which of the following indicates uninterrupted, focused work?

a. Ideal time

b. Story Points

c. Elapsed time

d. Stories

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a. Ideal time

b. Story Points

c. Elapsed time

d. Stories

Answer: a.

Explanation: Ideal time is time with no interruptions and only focused work. Estimating in elapsed days requires to consider all of the interruptions that might occur while working on the story.

Summary

Here is a quick recap of what was covered in this lesson:

- In traditional projects, the commonly used size measures are lines of code or functional points. In Agile, the estimates are normally expressed in terms of ideal days or Story Points.
- Story Points are the unit of measurement for expressing the overall size of a user story, feature, or other piece of work.
- Story Point estimations can be done effectively through comparisons with other user stories and by establishing multiple benchmarks.
- An ideal day estimate indicates how long it would take to complete a story, given that it is the only task being worked on, there were no interruptions, and clarifications and dependencies are available.
- One way to estimate Story Point effort is to use a game of planning poker.

THANK YOU