



# Using Function Points in Agile Projects XP 2011

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# Outline

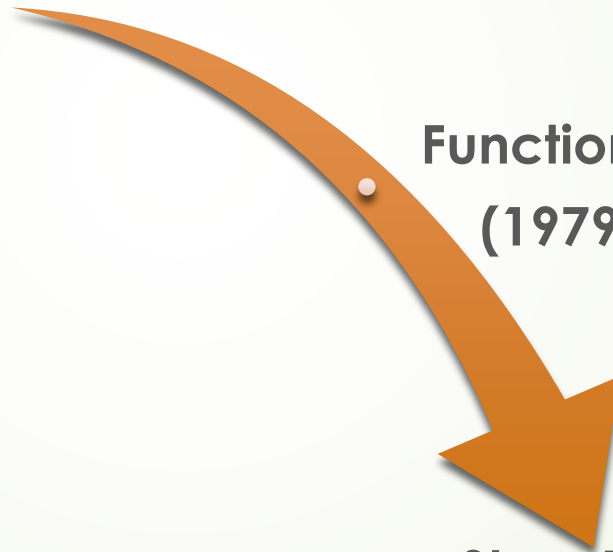
- How to measure productivity and quality?
- Function Point Analysis
- Story Points
- Difference between them
- Case Study
- Conclusion

# Measuring productivity and quality

Lines of Code  
(1950s)

Function Points  
(1979)

Story Points  
(2000s)

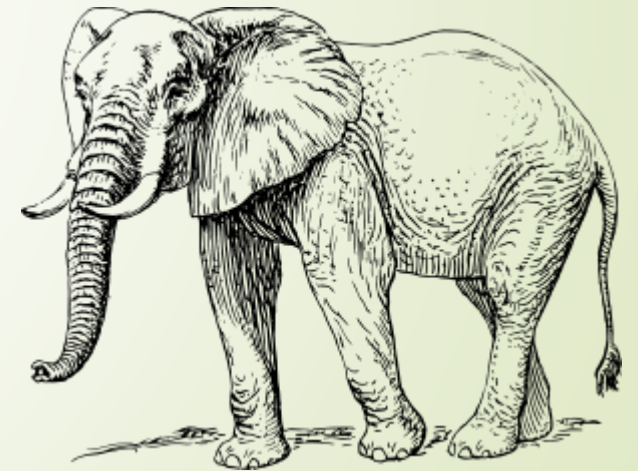


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# Function Point Analysis

# Function Point Analysis

- User view (not technical view)
- Objective
- Measure **functional size**
- Based on standard



# Procedure Diagram

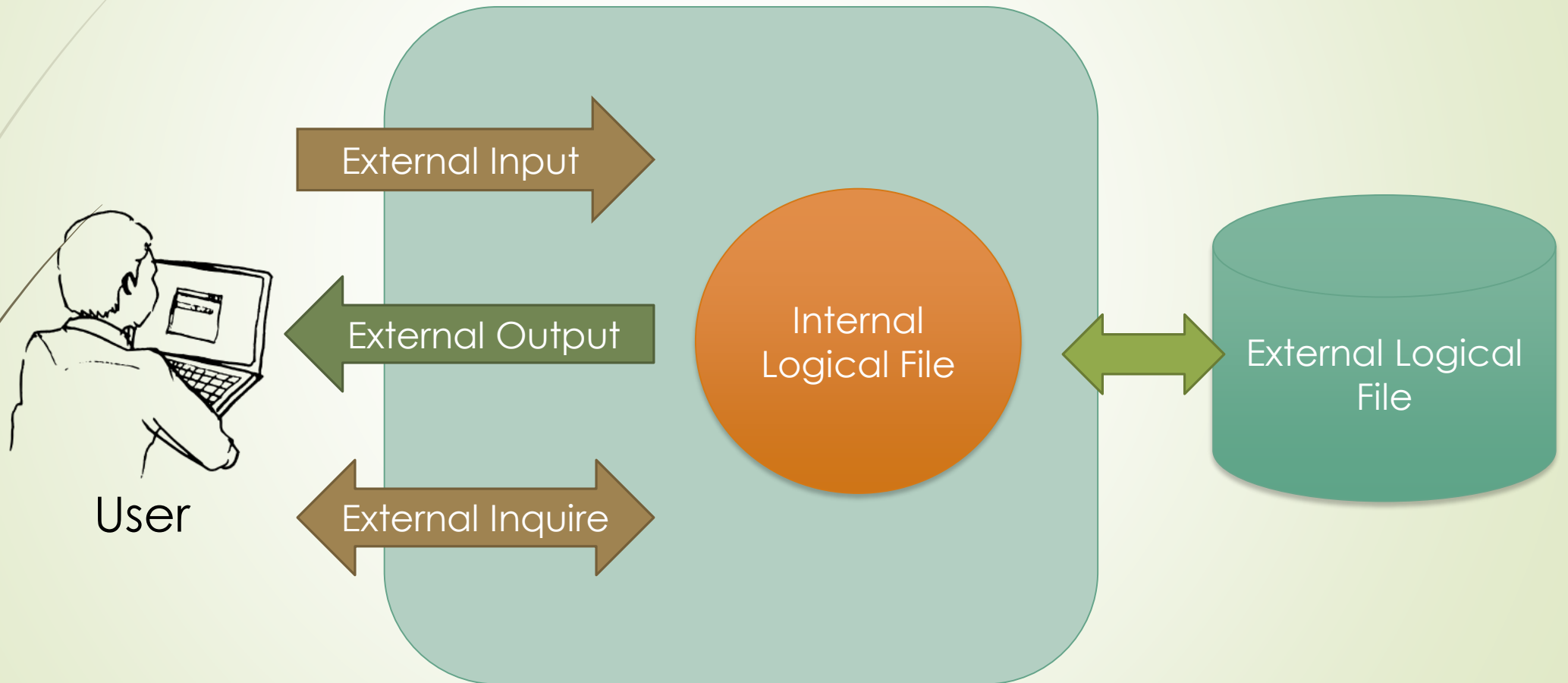
Gather available documentation

Determine scope and boundaries  
Identify functional user requirements

Measure data functions  
Measure transactional functions

Calculate functional size

# Function Type



# Story Points

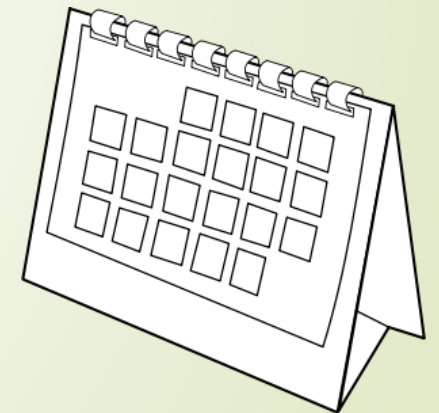


# Story Points

- Subjective
- No set formula
- Amount of effort
- Determined by teams
- What matters are the **relative values**

# Estimate Story Points

- Chose one of the smallest stories, and say that story is estimated at 1 story point.
- The work that can be completed in a day(8 hours) by a single person worth 1 story point.





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# Difference

Silence is gold

# Difference

## Function Points

- Standardized Methods
- Functional Size
- Maintenance **won't** be counted
- Doesn't care about who involve the project

## Story Points

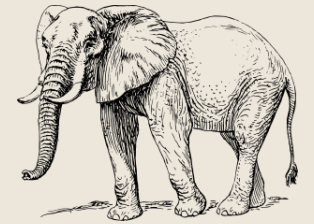
- Team Expertise (#14)
- Product Size
- Maintenance **will** be counted
- The team would change

# Example: showEinsteinBirthday()

➤ Print "1879/03/14 Friday"



- Search Einstein's birthday
- Calculate the day of week
- Print it



**They have the same function point!**

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# Case Study

# Background

- ▶ The ATI is following IN04
- ▶ ATI had been using Scrum as tool for contract management since January 2009
- ▶ IN04 states that Function Point Analysis has been adopted as currency in the local authority outsourcing contracts of software products in early 2010

2009/01  
Story Points

2010 early  
Function Points

# Correlation(1)

- ▶ **Product size** define by IFPUG Framework contains:
  - ▶ Functional User Requirements
  - ▶ Quality Requirements
  - ▶ Technical Requirements
- ▶ Functional size (**FP**) is a part of the product size (**SP**)
- ▶ Try to create a method of conversion between the two metrics



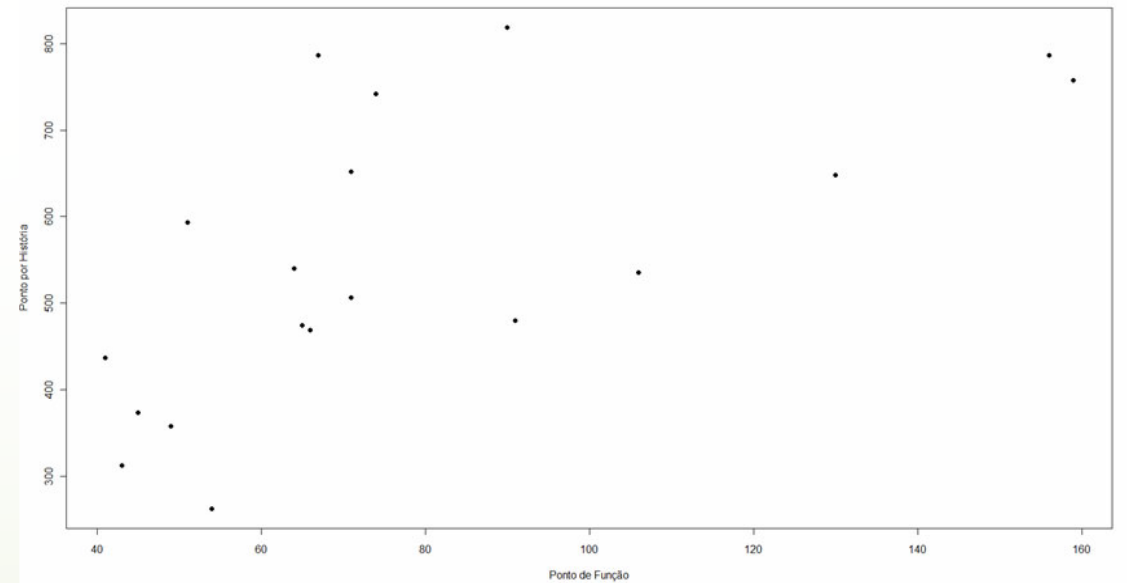
# Correlation(2)

	fev/09	mar/09	abr/09	mai/09	jun/09	jul/09	ago/09	set/09	out/09	nov/09	dez/09	jan/10	fev/10	mar/10	abr/10	mai/10	jun/10	jul/10	ago/10	Média	Desvio Padrão
PH	540	437	787	593	474	648	787	758	535	480	262	373	312	506	358	819	742	469	652	554,3158	171,0065147
PF	64	41	67	51	65	130	156	159	106	91	54	45	43	71	49	90	74	66	71	78,57895	35,75583214

- 18 sprints from February 2009 until August 2010  
PH is story points and PF is function points
- Try to find there is a statistical correlation between the two counting results

# Correlation(3)

- The results shown in the scatter plot present points growing on a linear pattern



# Conclusion

# Application

- ▶  $FP = xSP + y$ , where  $x$  and  $y$  are constants  
(This paper doesn't tell the value of  $x$  and  $y$ )
- ▶ The values found in this work will be only valid for that ATI project
- ▶ Organizations can use this method in its own database and so find their own correlation

# Reference

- ▶ Using Function Points in Agile Projects, Célio Santana, Fabiana Leoneo, Alexandre Vasconcelos, Cristine Gusmão, XP 2011
- ▶ How to Determine Your Software Application Size Using Function Point analysis, Alvin J. Alexander, [alvinalexander.com](http://alvinalexander.com)
- ▶ Function point @ Wikipedia