

# ***MOMENTUM***

**“JUST DOUBLE IT.”**

*Anita Leung, Austin Ha, Haley Ruth, Josh Pollock, Leon Pan*

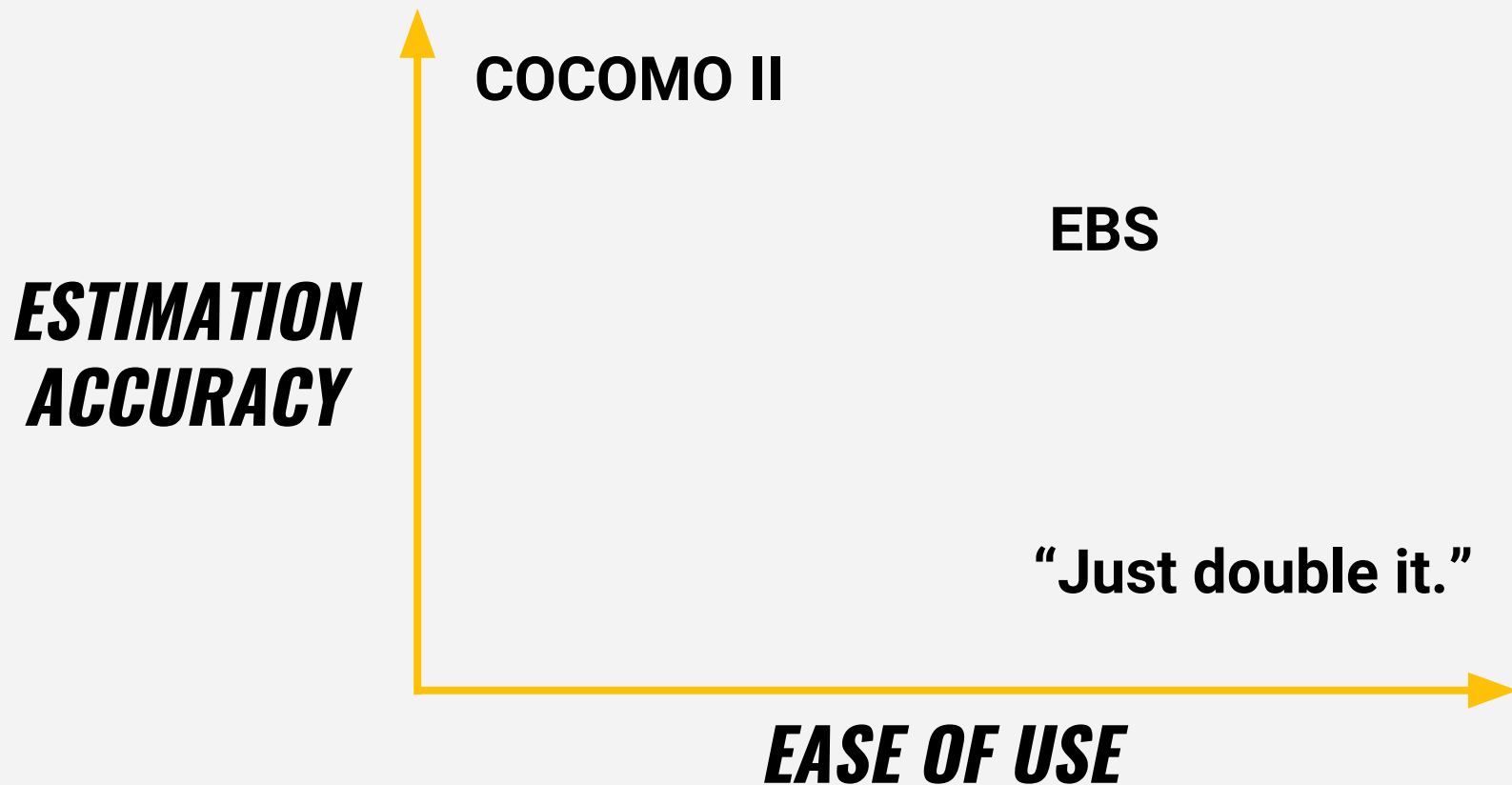
# ***BACKGROUND AND MOTIVATION***

- Development teams want to know how long their projects will take.

**effort estimation tool := estimation model + UI**

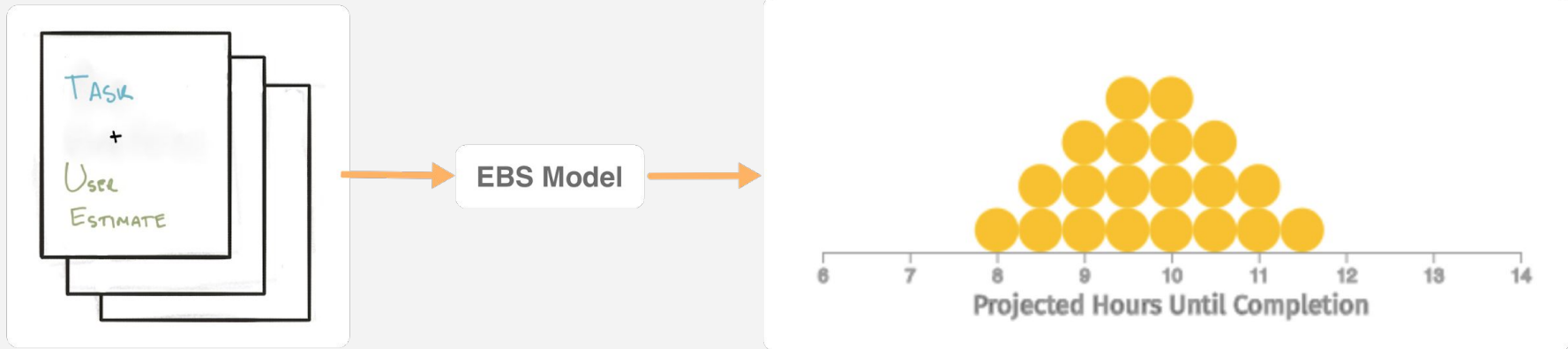
- An **estimation model** should balance the work required by the developer and the accuracy of the estimation.
- A **UI** should provide a simple interface to the estimation model.

# ***ESTIMATION MODELS***



# ***EVIDENCE BASED SCHEDULING (EBS)***

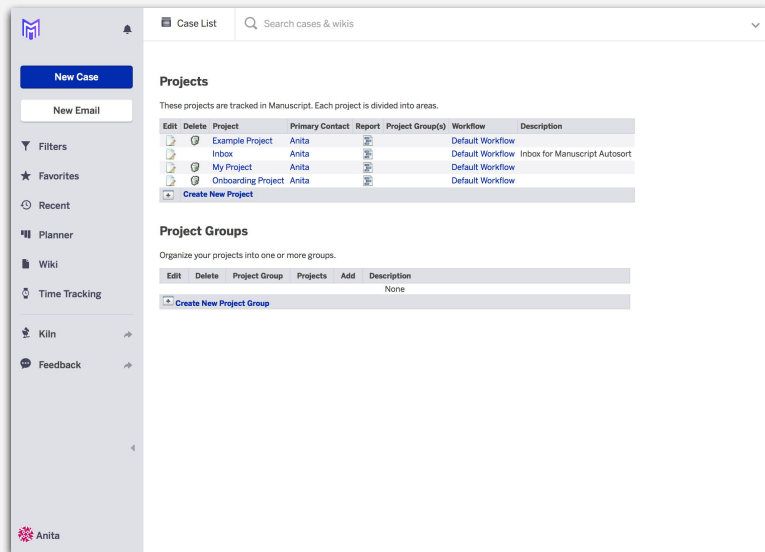
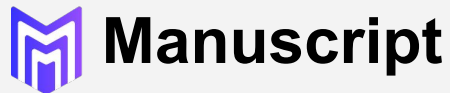
- A statistical technique for estimating project completion time.



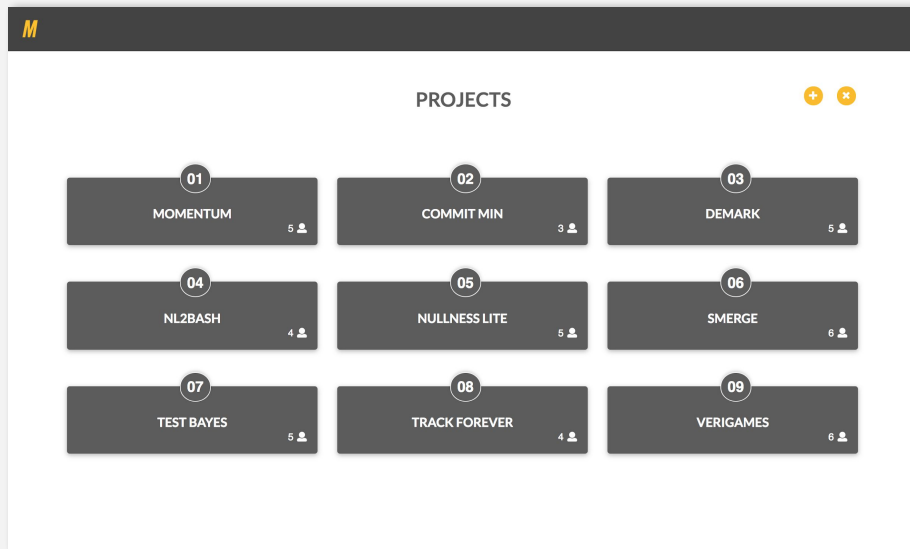
# ***GOAL***

Momentum will be **easier to use** and **more accessible** than existing effort estimation tools.

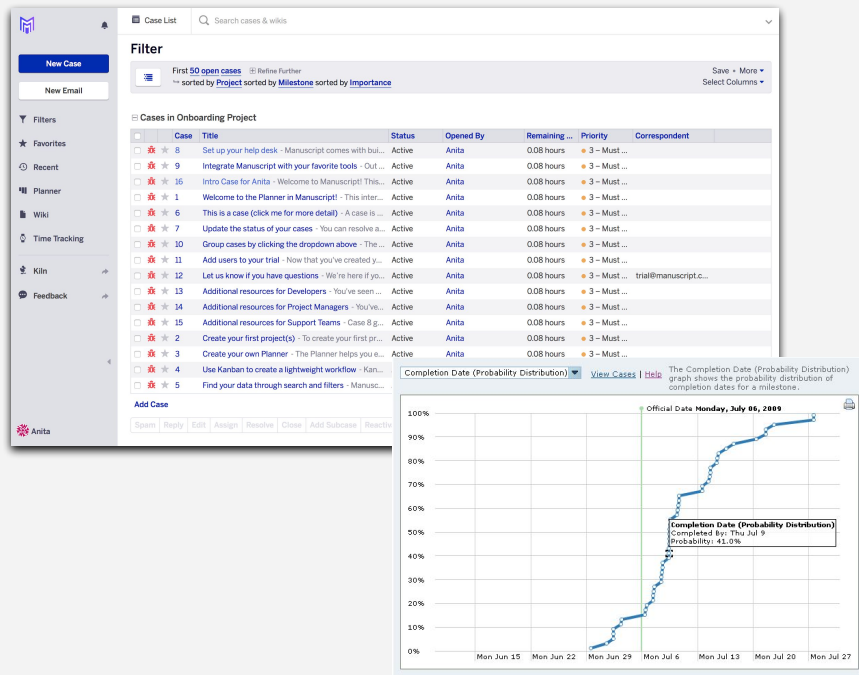
# UI COMPARISON: PROJECTS PAGE



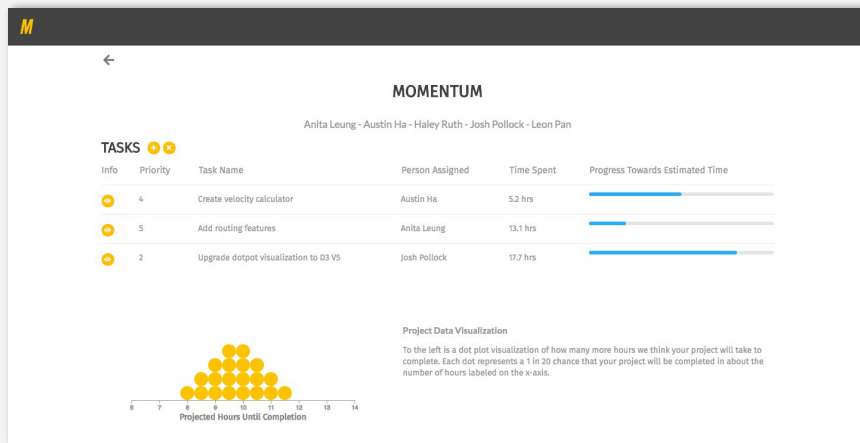
## MOMENTUM



# UI COMPARISON: TASKS PAGE

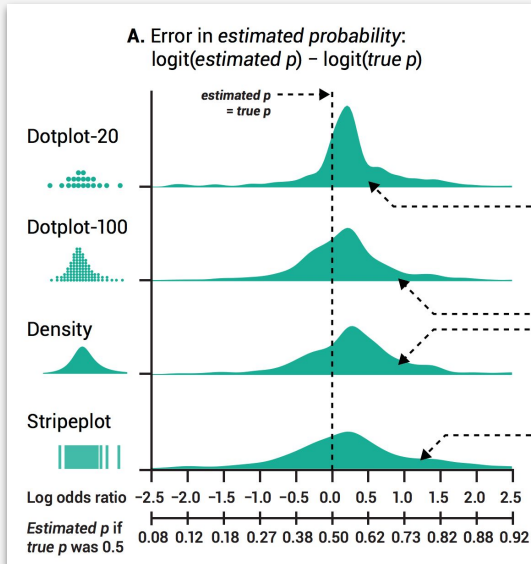


## MOMENTUM



# QUANTILE DOTPLOTS

- Discrete version of a continuous probability distribution.
- People can more accurately estimate probabilities from a dotplot with 20 points than from a density plot.



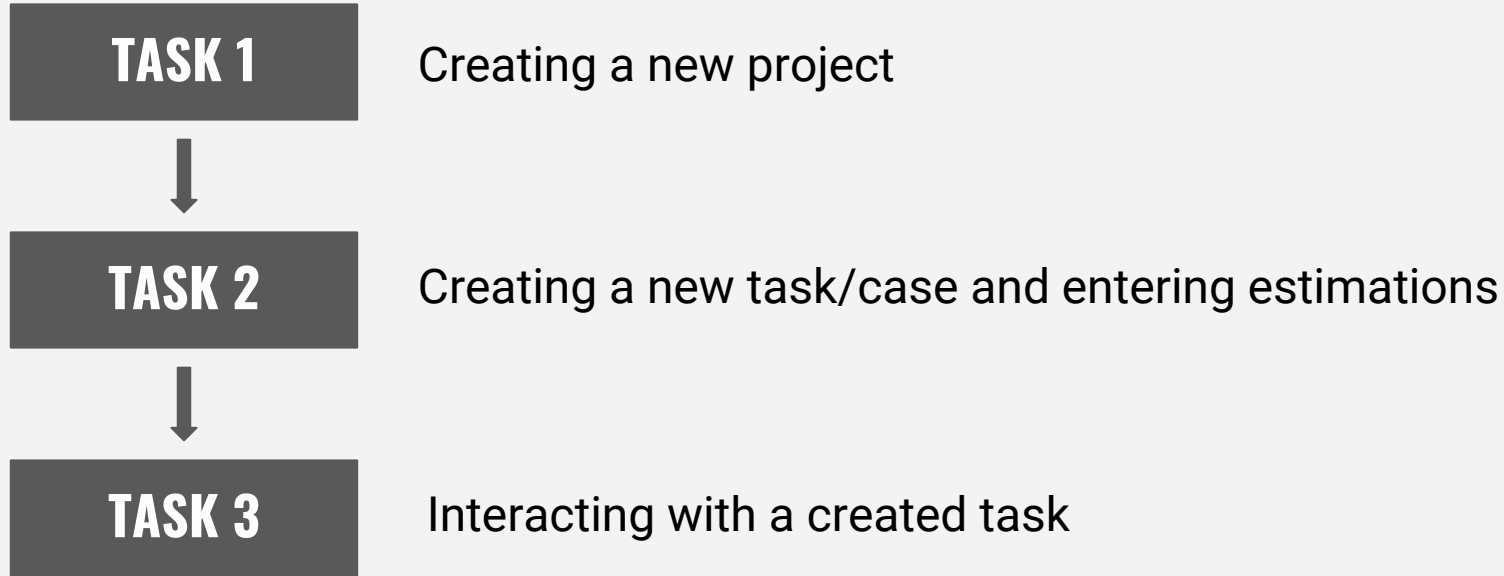


# ***USER RESEARCH: USERS***

<b>Current Job/Student Status</b>	<b>Years on project development teams</b>	<b>Years spent programming</b>	<b>Major/Degree</b>
4 <sup>th</sup> Year UW Student	1	6	CSE/HCDE
3 <sup>rd</sup> Year UW Student	1	4	CSE
2 <sup>nd</sup> Year UW Student	5	8	CSE
Network/Security Engineer	28	32	CSE/EE

Two users tested Manuscript first, then version one of momentum. The other two users tested these in the opposite order. All users tested version two of momentum last.

# ***USER RESEARCH: TASKS AS A USER STORY***



Users were asked to answer questions about their experience completing the tasks in a conclusion segment.

USER RESEARCH: TASK RESULTS- 90 SECOND COMPLETION

	User 1	User 2	User 3	User 4
Manuscript	X	X	X	X
Momentum 1.0	✓	✓	✓	✓
Momentum 2.0	✓	✓	✓	✓

NEW PROJECT  
(Task 1)

NEW TASK/CASE  
(Task 2)

	User 1	User 2	User 3	User 4
Manuscript	X	X	X	X
Momentum 1.0	X	✓	✓	✓
Momentum 2.0	✓	✓	✓	✓

	User 1	User 2	User 3	User 4
Manuscript	X	X	✓	✓
Momentum 1.0	✓	✓	✓	✓
Momentum 2.0	✓	✓	✓	✓

ALTER TASK  
(Task 3)

# ***USER RESEARCH: CONCLUSION RESULTS***

Users were asked “How would you rate your experience with [the tool] with 1 being the lowest and 5 being the highest?” The average user response for each tool was:



**Manuscript**

**2.0/5**

***MOMENTUM 1.0***

**4.3/5**

***MOMENTUM 2.0***

**4.6/5**

***DEMO***

# ***LIMITATIONS***

- Limited number of user studies
- Limited time to evaluate the effectiveness of our tools on long-term projects
- Limited time to complete user studies on small teams

# ***CONCLUSION***

- Momentum is **easier to use** and **more accessible** than Manuscript.
- Momentum lowers the barrier to entry for software effort estimation.



**Manuscript**

**2.0/5**

***MOMENTUM***

**4.6/5**

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Manuscript

**2.0/5**

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# ***QUESTIONS?***



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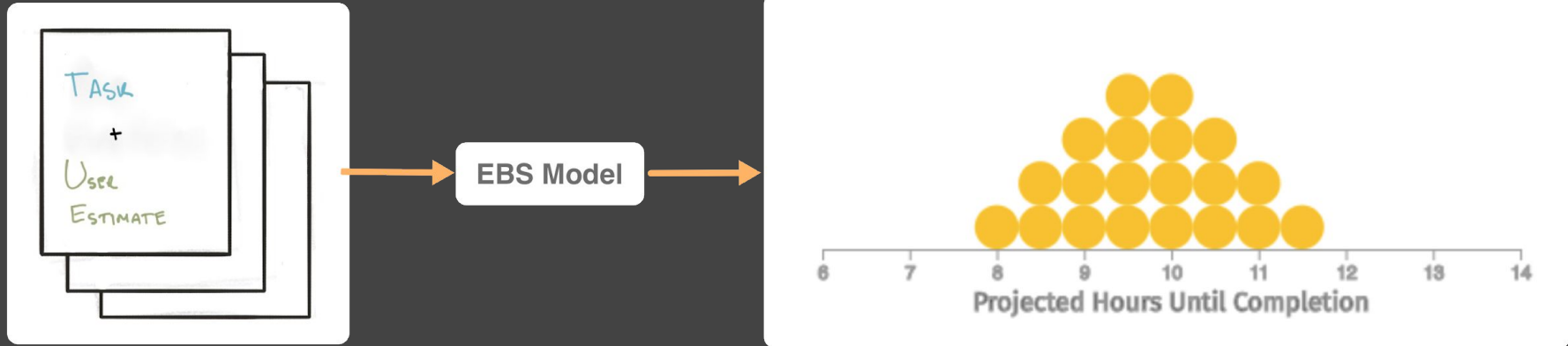
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# ***EVIDENCE BASED SCHEDULING (EBS)***

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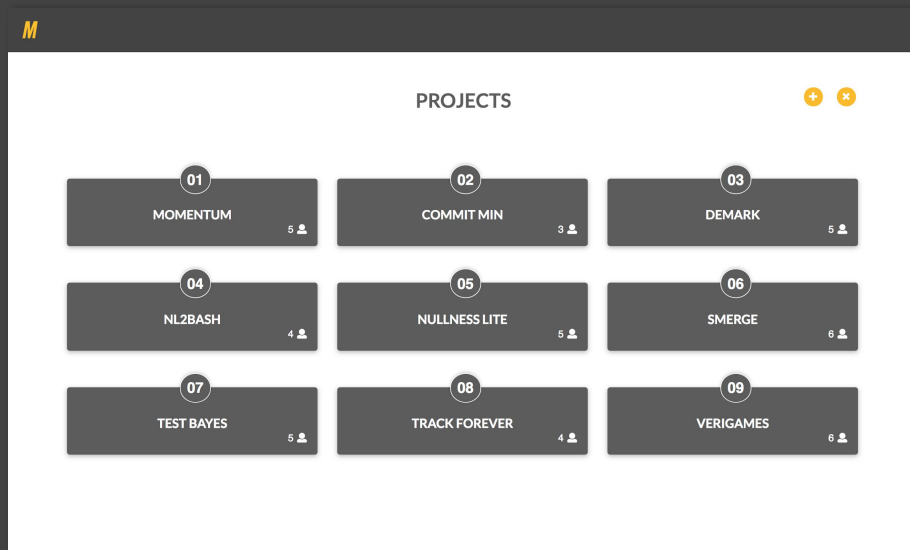
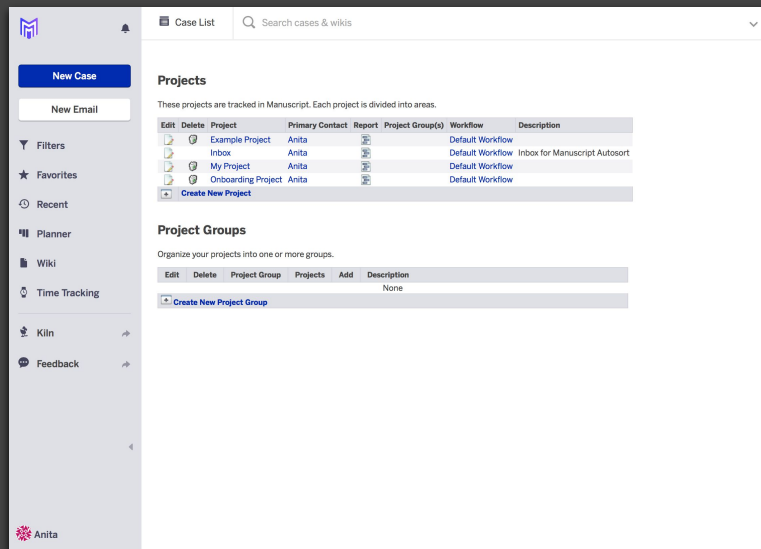
# FEATURES COMPARISON

Features	 Manuscript	<b><i>MOMENTUM</i></b>
EBS Model	✓	✓
Projection Visualization	✓	✓
Priority System	✓	✓
Progress Indicator	✗	✓
Iteration Planner	✓	✗
Kanban Board	✓	✗
Integration with Slack, Github, and Google Docs	✓	✗

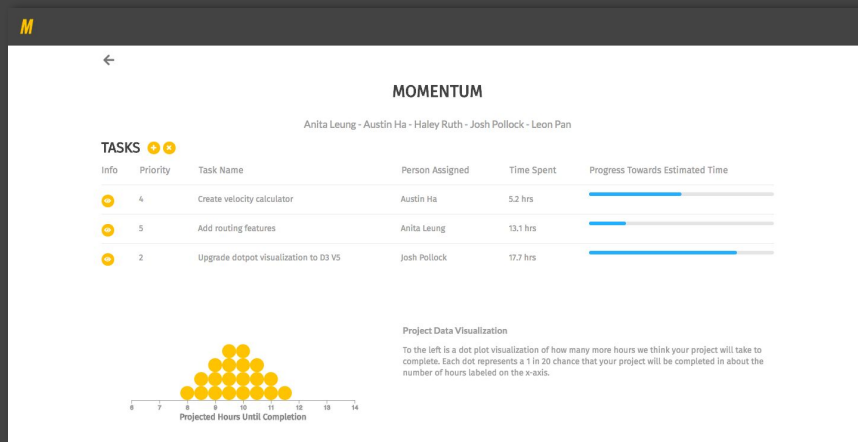
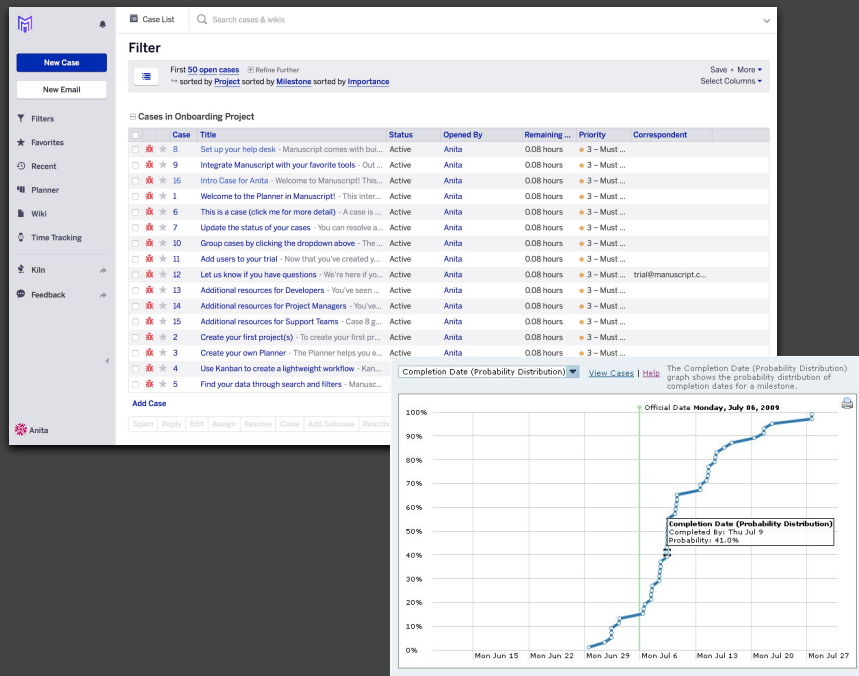
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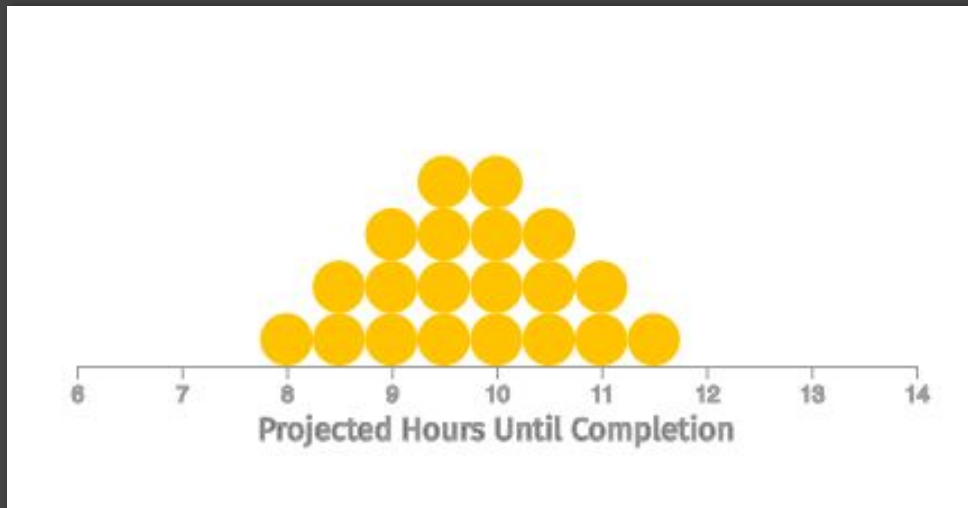
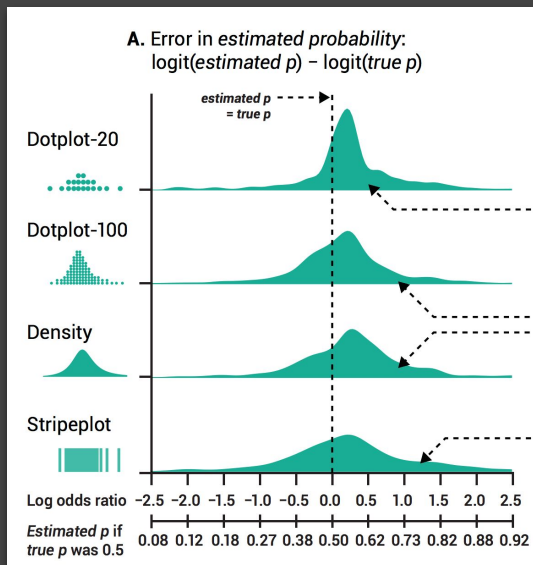
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# ***USER RESEARCH: TASKS AS A USER STORY***

**TASK 1**

Creating a new project



**TASK 2**

Creating a new task/case and entering estimations



**TASK 3**

Interacting with a created task

Users were asked to answer questions about their experience completing the tasks in a conclusion segment.

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