

## TEAM MEMBER SELECTION IN AGILE

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### ABSTRACT

*This is a research paper which explains the novel technique of selecting team members for software development project. Through our proposed algorithm, developer who are more deserving are separate out from others for the selection of team member and team leader for the development of software.*

***Keywords: Agile Development; Team Selection; Desired Team member in Agile; Software Developers;***

### I INTRODUCTION

Agile methodology is most widely used in software engineering for the development of software. It's very important to select a member who has all the skills to develop efficient software. For this we have proposed an algorithm for selection the team member, and their role in the team.

Manual selection of team members can lead to a violation of task deadline, which can lead to great monetary loss. So, the proposed algorithm reduces the manual task and selects the team members according to requirement.

In many cases, the project completion exceeds the deadline and takes more than dedicated time, thus increasing the budget. And, the project eventually becomes stagnant.

So using a model (TEM) Team Estimation Model we will use some specific set of questions to identify right developer for the project.

### II PREVIOUS WORK

Agile Software Development method was firstly introduced by seventeen software developers in February, 2001 at Snowbird resort in Utah. <sup>[1]</sup> Since then many developers have contributed towards its improvement in every step associated with it. Specifically talking about team selection used in agile development has got much advancement; we are listing some of the important papers that marked the importance of team selection:

- Manifesto for agile software development-2001:

Firstly introduced the importance of team member selection in agile, its origins were from model introduced by Kent Beck, Ward Cunningham, Ron Jeffries (end of 1990s). <sup>[1]</sup>

- <sup>[2]</sup>According to Bill Wake a story should have the following features

Factors which affect Agile Software:

S3-INVEST (Wake, 2003). The acronym stands for

- S- Smart
- S -spontaneous
- S- Sensible
- I – Independent
- N – Negotiable
- V – Valuable
- E – Estimable
- S – Small
- T – Testable

### III PROPOSED WORK

We have designed the specific set of question that plays an important role in the selection of team member. Then, we used these questions to find out who will be our desired team member. We grouped those developers whose average is coming out to be closer to each other.

- Questions Asked by each of the developer:

Rate yourself on how keen are you to learn new techniques?

How open are you to relocation (Asia-Africa-Europe-USA)?

How well you can handle roles outside the project?

Rate yourself to positive criticism.

How many successful project you have done?

Rate your communication skills and writing skills.

Are you open to role changes in a Team?

How well you perform under pressure?

How well you can perform in uncomfortable environment for a critical project?

How many continuous hours you can devote for a critical project?

- With the use of above listed question we have designed formula to find desired team member
- Proposed Algorithm:
- $TMS = TL^{(1.25)} + R^{(1.1)} + PR^{(1.2)} + PC^{(1.2)} + PD^{(1.2)} + CWS^{(1.25)} + RC^{(1.2)} + UP^{(1.2)} + UE^{(1.1)} + TD^{(1.3)} + LT^{(1.1)}$
- $DTM = TMS/11$

Notations we have used are explained below:

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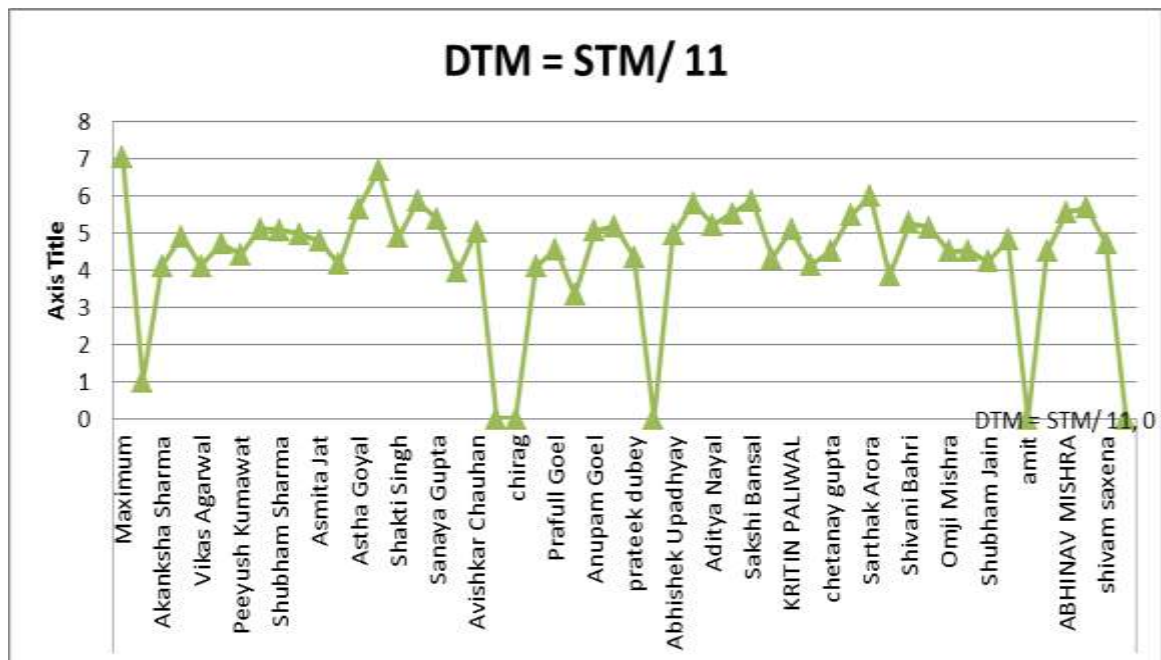
(ICSTM-16)

ISBN: 978-81-932074-8-2

- TL = Techniques Learner
- R = Relocation
- PR= Project Role
- PD = Project Developed
- PC= Positive Criticism
- CWS= Communication and writing skills.
- RC= Role Change
- UP= Under Pressure Performance
- UE= Uncomfortable Environment
- TD= Time Devoted
- LT=Learning Pattern

We have used the above equation on data collected by some developers through Google forums. The result can be depicted through graphical representation of the output. Then we have separated those with high values for the selection of team leader and those with average value for the members of the team and eliminated the remaining members.

Graphical View of the collected data set:



Output:

Rejected Team Members:

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(ICSTM-16)

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Name	TL	R	PR	PC	PD	CWS	RC	UP	UE	TD	LP	STM	DTM = STM/ 11
Minimum	1	1	1	1	1	1	1	1	1	1	1	11	1
Mayank Nanda	4	4	4	3	1	3		2	3	2	3	36.8	3.344430151
Sanchit Ka2	4	5	2	4	3	4.5	0	2	3	1	4	42.4	3.858877902
Sangram Singh	4	5	4	4	3	4	0	2	2	2	3	43.5	3.958368138
Nikhil anand	4	1	4	3	4	4	5	2		3	4	45	4.09117684
Vikas Agarwal	4	5	4	3	3	4	0	2	2	4	3	45.3	4.113720746
Akanksha Sharma	4	5	5	3	1	2	5	1	3	2	4	45.3	4.11889388
Aman Saxena	4	5	5	4	2	3	0	2	4	2	4	45.7	4.155628023
Shubhi Shukla	5	4	5	3	2	4.5	0	2	2	3	4	45.9	4.171184687
Shubham Jain	5	1	4	4	2	2	5	2	2	4	4	46.5	4.226427671
Aman Aggarwal	4	4	5	3	1	4	5	2	2	3	3	47.5	4.320062267
prateek dubey	4	4	4	3	3	4	5	2	3	1	4	47.9	4.356121825
Peeyush Kumawat	4	4	4	4	3	4	5	1	3	2	3	48.7	4.429773368

Desired Members of the Team:

Name	TL	R	PR	PC	PD	CWS	RC	UP	UE	TD	LP	STM	DTM = STM/ 11	
Omji Mishra		5	5	4	3	2	4	0	3	3	4	4	49.5	4.50200585
Anna2na		4	2	5	4	3	4.5	5	2	3	2	3	49.6	4.505651833
chetanay gupta		4	4	4	3	4	3	5	2	3	3	3	49.7	4.515844573
govind mohan		4	5	5	3	3	4.5	0	1	2	5	4	49.8	4.523479404
Prafull Goel		4	5	4	3	3	5	5	2	3	1	3	50.1	4.555583863
shivam saxena		5	5	5	1	5	5	0	3	5	1	4	51.9	4.714046699
Kriti Garg		4	5	4	3	4	3	5	2	2	4	3	52	4.725616648
Asmita Jat		4	4	4	3	3	4.5	0	3	4	6	3	52.6	4.784217427
Garima Goyal		4	4	4	4	3	4	5	2	3	3	4	53	4.816382395
Shakti Singh		4	5	4	4	5	2	5	1	2	4	4	53.9	4.897574357
Prashant Gautam		5	5	5	4	3	4.5	0	2	4	4	3	53.9	4.902878586
Abhishek Upadhyay		4	2	4	3	2	4	5	3	5	5	4	54.6	4.960428483
Rohit Pal		4	4	4	4	2	4	5	2	4	4	4	54.7	4.970775717
Avishkar Chauhan		5	4	4	3	4	4	5	3	4	2	4	55.4	5.038779763
Anupam Goel		5	4	4	3	4	4	5	2	4	3	4	55.7	5.063241815
Shubham Sharma		4	4	4	4	4	4	5	3	4	3	3	56	5.087349207
KRITIN PALIWAL		4	5	4	2	3	4.5	5	3	2	5	4	56.1	5.096783565
Gunjan Denwal		4	4	5	3	4	3	5	2	1	6	4	56.3	5.11749209
Pooja Lodhi		4	5	4	3	3	4	5	2	3	5	4	56.6	5.149203611
Rishabh Tiwari		5	4	5	4	3	5	5	2	2	3	4	57	5.185070884
Aditya Nayal		4	4	5	4	3	5	5	3	4	2	4	57.4	5.218004908
Shivani Bahri		4	5	5	3	3	5	5	2	3	4	4	58	5.276484484
Sanaya Gupta		4	4	4	3	5	4.5	5	2	4	5	3	59.1	5.370851201
Prashant Gupta		5	4	5	3	5	5	5	3	5	1	4	60.3	5.482155713

Desired Team Leader:

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Name	TL	R	PR	PC	PD	CWS	RC	UP	UE	TD	LP	STM	DTM = STM/ 11	
akhil bansal		4	4	5	3	5	4.5	5	3	3	5	3	60.9	5.535759281
ABHINAV MISHRA		4	5	5	4		4.5	5	3	5	5	4	61.3	5.570742572
Astha Goyal		4	5	4	3	4	5	5	3	2	6	4	62.4	5.673116172
Akshat Sharma		5	5	5	1	5	5	5	3	5	4	3	62.6	5.688145851
chetna gupta		4	5	4	4	4	5	5	3	5	4	4	63.8	5.801615595
Saumaya Singh		5	5	4	5	4	5	5	2	3	5	3	64.5	5.864322676
Sakshi Bansal		4	5	4	4	4	5	5	3	4	5	4	64.6	5.870898815
Sarthak Arora		5	5	5	5	5	5	5	3	5	1	4	65.9	5.986949544
Ashutosh Choudhary		5	4	4	3	4	5	5	3	3	10	4	73.5	6.680943406
Maximum		5	5	5	5	5	5	5	5	5	5	5	77.4	7.036316795

## IV FUTURE WORK

We have worked on a method to allocate team member work as per the predefined set of questions. We will now work on team selection through user story point analysis and will see the comparison and accuracy of proposed algorithm.

## ACKNOWLEDGMENT

This research paper is made possible through the help and support from everyone, including: parents, teachers, family, friends, and in essence, all sentient beings. Especially, please allow us to dedicate our acknowledgment of gratitude towards Mrs. Purtee Kohli, Dr. Devpriya Soni and Mr. Dharamveer Singh Rajpoot for their support and encouragement.

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