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GRADUATES PREPAREDNESS TOWARDS LEARNING ROBOTIC PROCESS AUTOMATION AND ARTIFICIAL INTELLIGENCE FOR EMPLOYABILITY – AN EMPIRICAL STUDY

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Change is the rule of world and is inevitable. Robotics and Artificial Intelligence is the need for the day. The word Robotics is often associated with the image of a machine on an assembly line tightening the screw or spray painting, but the reality is different. Artificial intelligence embedded with Robotics Process Automation can assist in massive gathering, processing and analyzing data enabling to continuously learn and improvise. This in turn will lead to reduced cost, increased efficiency and slash error rates. RPA is a computer software which is configured to perform repetitive and deterministic tasks or processes, where as Smart Robotics can deliver greater value along with Artificial Intelligence and Machine learning. When the companies are trying to adapt these, is our education system up to the mark in producing the graduates with these required technical skills. Nature of the jobs will change with RPA. Are our young graduates aware of these technology? Did our education system adopt these technological advancements like RPA, Machine Learning and Artificial Intelligence in their curriculum? What is the perception of young graduates about RPA and Artificial Intelligence? This paper attempts to address these questions along with their employability in the current scenario of AI implementation across jobs.

Key Words: Robotics Process Automation, Artificial Intelligence, Machine Learning, Smart Robotics

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INTRODUCTION:

The process of industrialization has led to lots of innovation and development of computing systems for increased efficiency and improved product quality. Along with computing systems, even the software development is taking place in terms of new operating systems, applications, utilities and computing capabilities at the networking edge level with high bandwidth. In addition to this, even the organizational applications like Enterprise Resource Planning, Time Sheets and Management Information Systems are experiencing a multifold development. Robotic Process Automation with embedded Artificial Intelligence, is one of such developments of the year. With this disruptive technology advancement RPA is becoming the new pulse of the organization due to varied benefits to organizations in terms of effective resource utilization with high quality output. With these developments in market, are our future work force ready to this?

ROBOTIC PROCESS AUTOMATION:

"Robotic Process Automation is the next wave of innovation, which will change outsourcing. We already are seeing the beginnings of a race to become the top automation-enabled service provider in the industry. In time, we are likely to see an arms-race for innovation in automation tools leading to new offerings and delivery models. "

Sarah Burnett, Vice President of Research at the Everest Group

Robotic Process Automation is a software, which can perform standard rule based repetitive tasks, with least human intervention and can provide quality output. It can read the typed text, voice recognition, image recognition and processing, voice to text.

According to Hindle, Lacity, Willcocks, & Khan, 2018, Patric Geary, the Marketing Director of Blue Prism (RPA developing Company), first used the term "Robotic Process Automation" in 2012. Between 2014 and 2015, it gained popularity when most of the companies started announcing considerable savings by its usage. Horses for Sources Research (2017) and Everest Group research (2017), opined that the global RPA market grew significantly to 64% in 2016 to 2017 with a revenue growth of $271 million to $443 million (Fersht & Snowdan, 2017). HfS

Research (2017) reported a 42% increase in the market from 2017 to 2018 and an expected increase around 94% from 2018 to 2021 (Fersht &Snowdan, 2017).

NEED FOR THE STUDY:

In order to achieve delivery excellence with higher profitability and to capture the market share, companies have adopted Robotics Process Automation with Artificial Intelligence. But are our education system and future work force aware of these technologies. Are we proactive in making the future work force employable with the changing needs of the industry? This paper attempts to address these questions.

OBJECTIVES OF THE STUDY:

1. To understand the perception of students towards Artificial Intelligence and RPA
2. To evaluate their preparedness in taking up future job.
3. To measure and evaluate the need for learning Robotics process automation and Artificial Intelligence.

METHODOLOGY:

The population consists of Engineering and Management School students of few reputed colleges in Bangalore city, of which 4 colleges were selected based on convenience sampling. A structured questionnaire was administered among these students and 52 responses were collected. This was then cross tabulated. The data was then analyzed and presented in the form of tables and charts.

DATA ANALYSIS & INTERPRETATION:

Structured questionnaire was administered to 52 students and the data is represented as under:

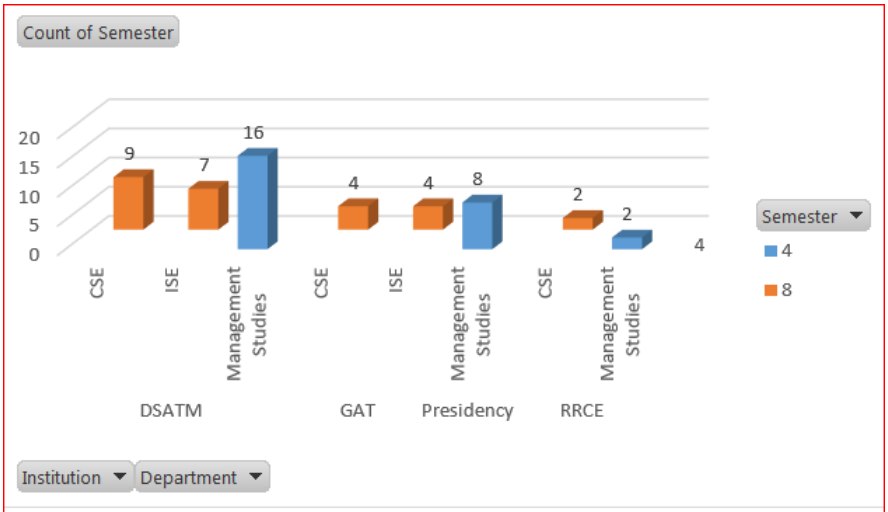


Chart1: List of Institution / Department and Sem

The total 52 sample constitutes from 4 colleges in Bangalore city i.e., DSATM, GAT, Presidency and RRCE of CSE, ISE and Management Studies departments.

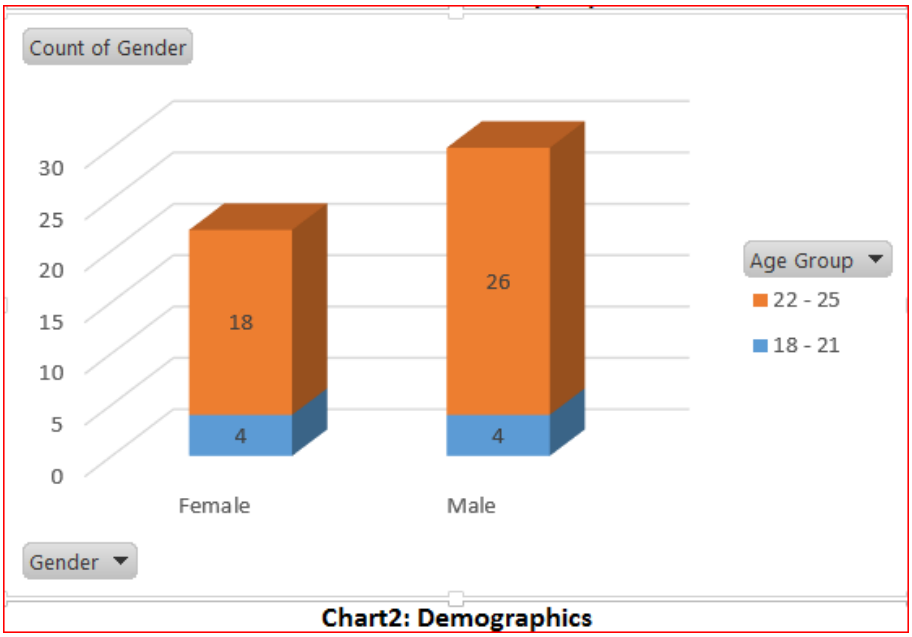


Chart2: Demographics

The sample constitutes 42% Females and 58% Males of which, 81% of females in the age group of 22-25 years and 19% in the age group of 18 to 21. 87% of the males fall into the age group of 22-25 years and 13% in the age group of 18-21 years.

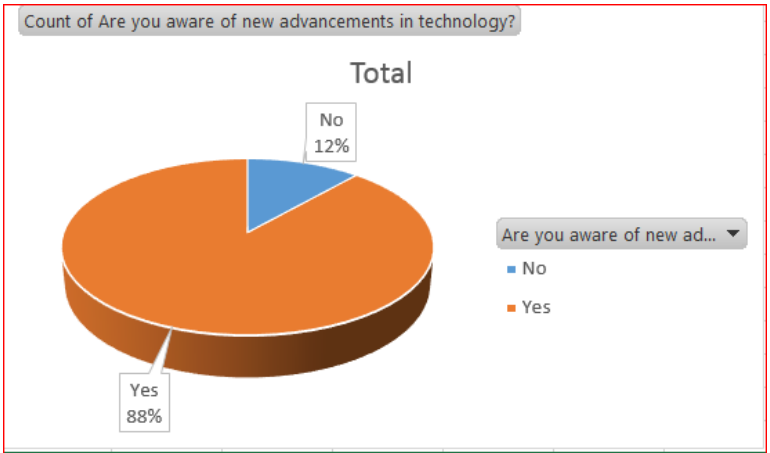


Chart3: New technology awareness level

88% of the respondents were aware of new technology and 12% of them opined that they were not aware of advancements in technology.

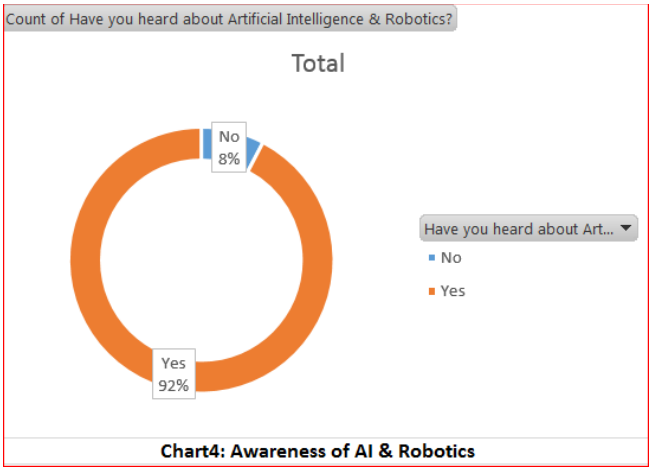


Chart4: Awareness of AI & Robotics

92% of the students opined that they are aware of the term Artificial Intelligence and Robotics as against 8% were unaware of this.

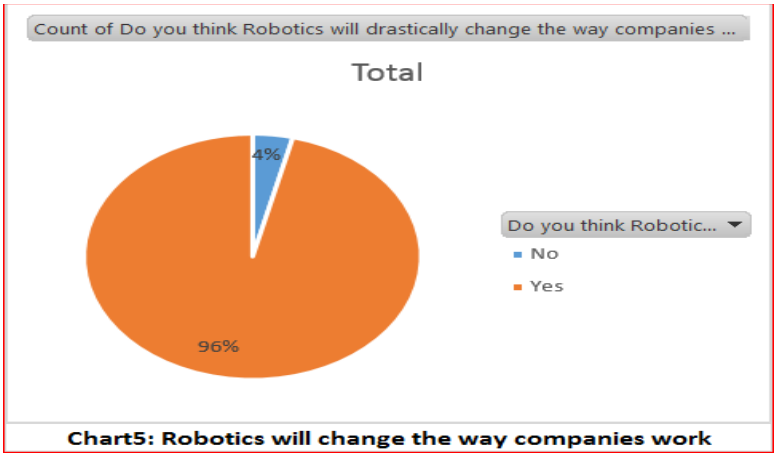
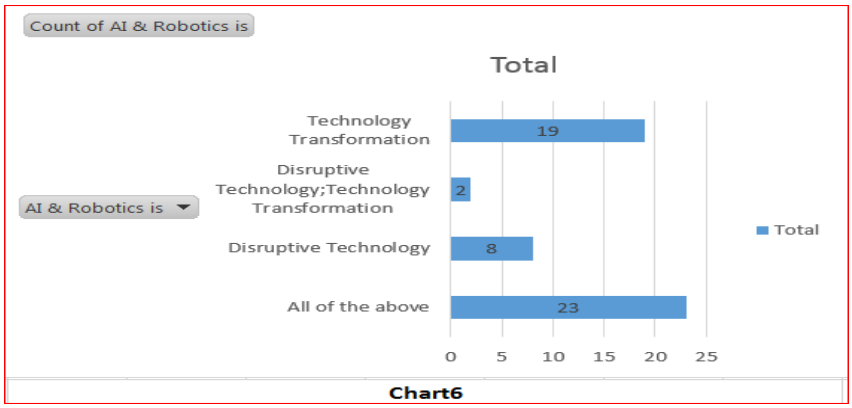
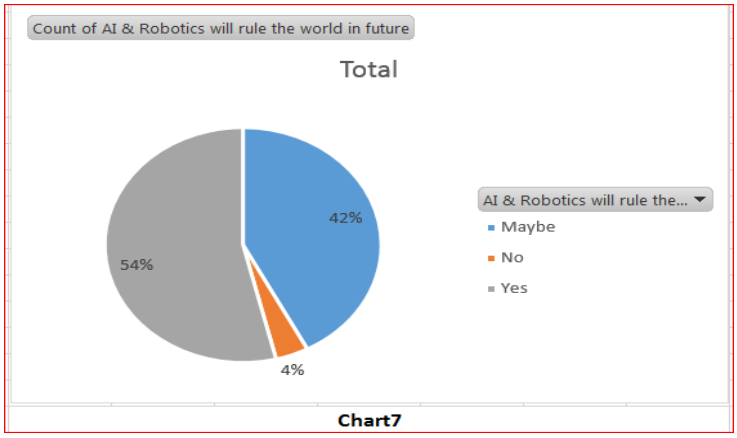


Chart5: Robotics will change the way companies work

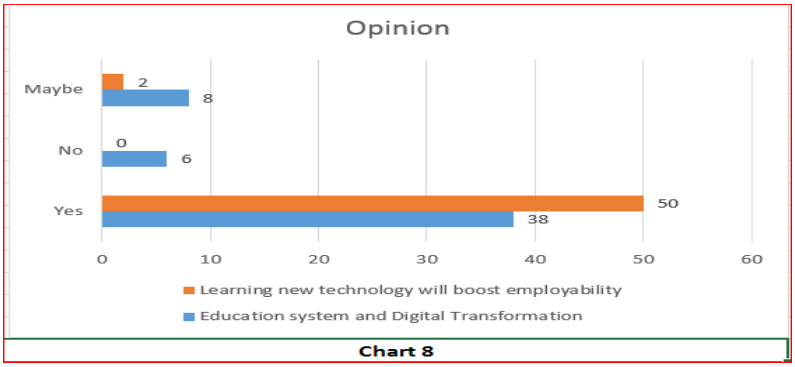
96% of the respondents feel that robotics will drastically change the way companies perform their processes as against 4% feel that it will not change.



36.54% opined that artificial and robotics is technology transformation and 15.38% felt that as disruptive technology; 44% opined that AI and Robotics are technology transformation, disruptive technology and advancement in technology.



54% feels that AI & Robotics will rule the world in future as against 42% feels that it will not.



When asked about will education system see a digital transformation, 73% respondents opined yes and 12% said No it will not. And 96% of the students feel that learning new technology will boost their employability and 4% were unsure.

Opinion	AI & Robotics are part of my current Syllabus	Using Artificial Intelligence - Robots can replace humans in all aspects	Robots can only do repetitive jobs	I learn about AI & Robotics from online tutorials available	Both Technical and Managerial Skills are required to handle future jobs	AI & Robotics have been a part of service industry (Retail / Telecom / Business & Finance)	Universities should be proactive in including these in our syllabus	Robots are capable of decision making using AI	AI can only simulate the tasks which were previously done but cannot create new
Agree	19%	38%	73%	29%	19%	73%	96%	63%	29%
Disagree	38%	19%	10%	42%	38%	10%	0%	13%	42%
Neutral	35%	35%	12%	19%	35%	4%	4%	19%	0%
ongly Disagr	8%	8%	6%	10%	8%	13%	0%	4%	29%

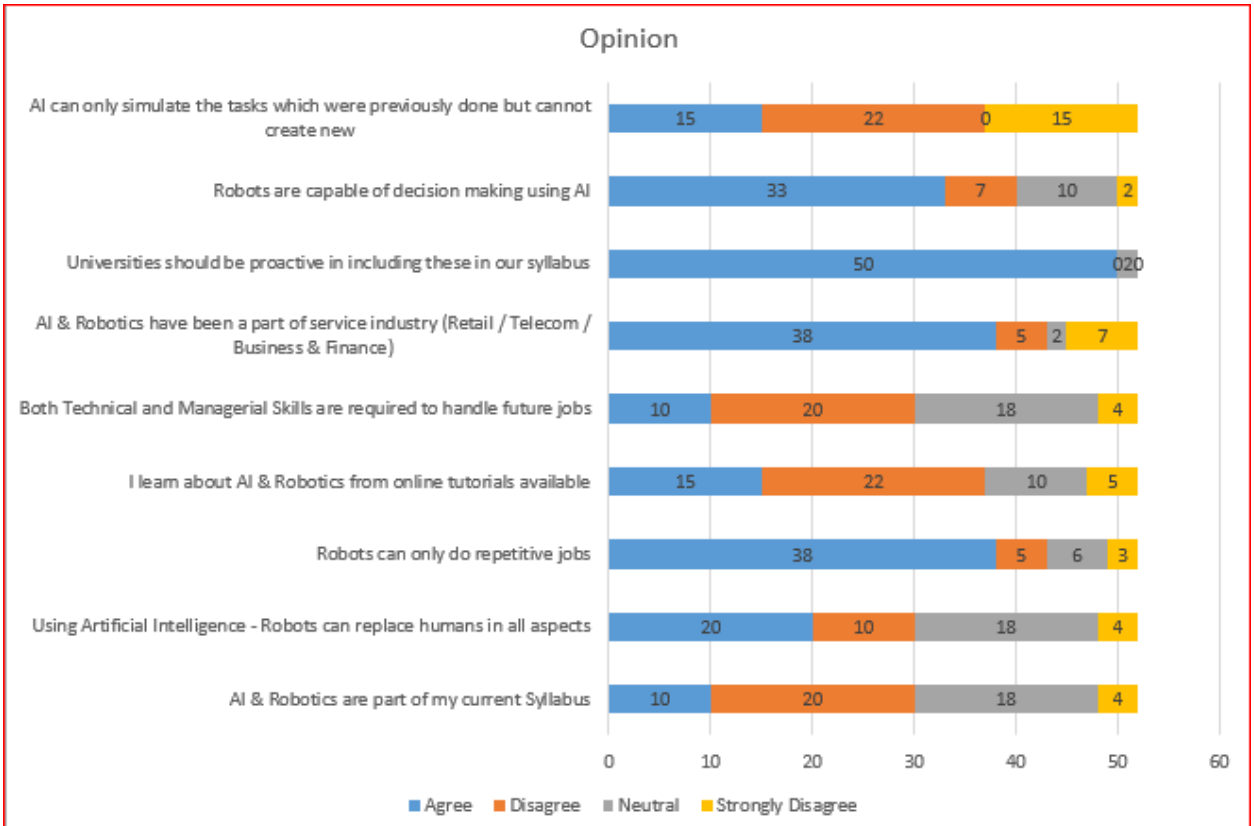


Chart 9

42% respondents disagree with the statement "AI can only simulate the tasks which were previously done but cannot create new", but the fact is AI cannot create anything new, it can only perform tasks that are previously done.

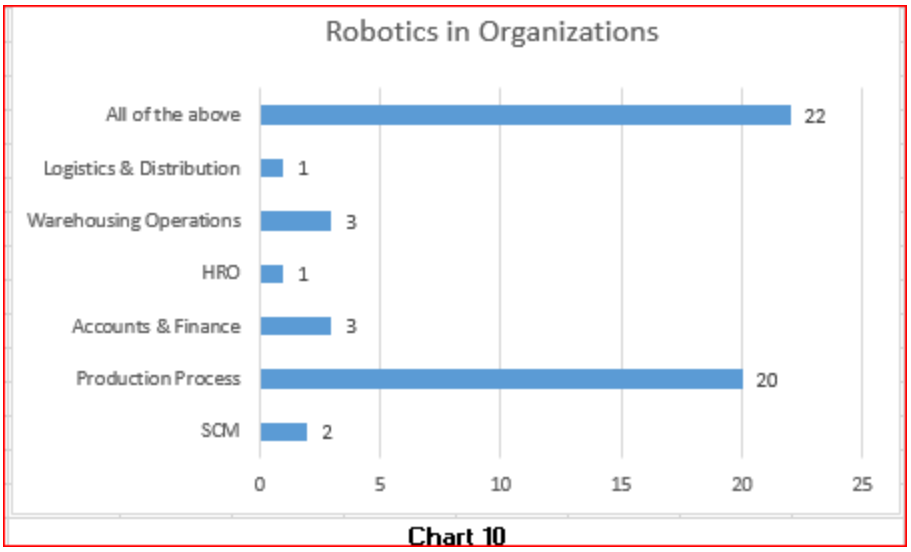


Chart 10

38.46% of the respondents said that robotics will only impact the production process as against 42.3% opines that it will impact all the departments at the organization.

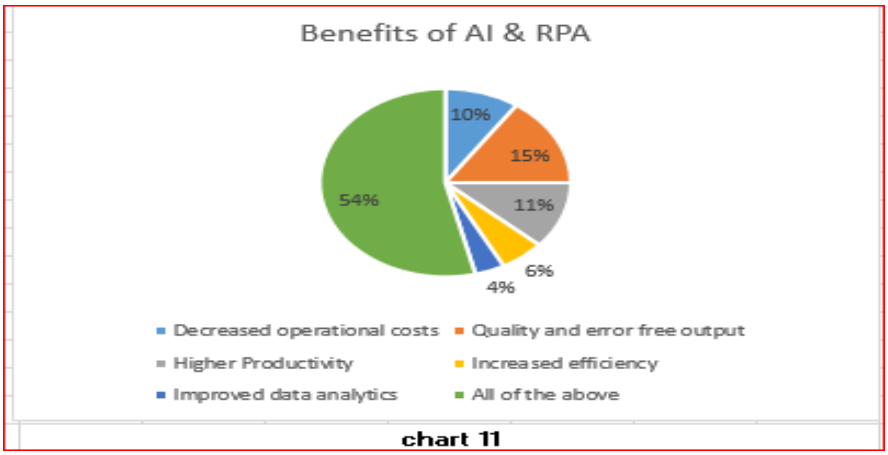


chart 11

54% of the respondents feel that robotics and AI will have multiple benefits listed above, whereas 15% opined that it will increase quality and reduce errors, 11% says it only increases productivity followed by 10% respondents opined that it improves data analytics.

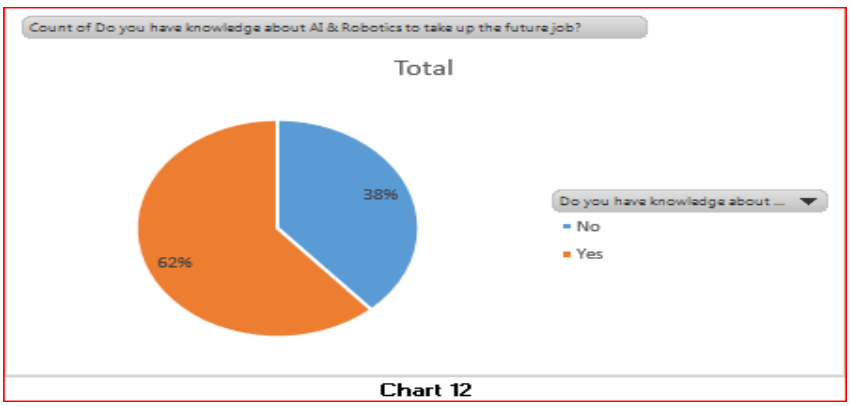


Chart 12

62% opined that they have knowledge about Ai & Robotics to take up future jobs as against 38% feel that they are not knowledgeable about Robotics.

MAJOR FINDINGS:

Respondents opined that Machine learning, Microsoft Azure, Android, Industrial Internet of Things, Data Analytics and cloud computing should be taught in colleges to enhance their employability skills. They also opined that universities should be proactive in reframing their syllabus for the new age employments. While being innovative and creative will increase chances of employability.

CONCLUSION:

Students are aware of technological advancements but are not very familiar in what all areas these are used. Only countable number of respondents said that they were using you tube or any other means for self-learning for getting familiarized with these developments. But they are aware that, without these new learning their employability will hamper. Students at large felt that, universities should be proactive in framing syllabus in association with corporates for reducing the gap between supply and demand of employment.

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