# Chapter 6 Conclusions

*We should summarize the problem in this chapter. In section 6.1 we should give a clear discussion about our thesis and results. In section 6.2 we discussed about the future work opportunities. In section 6.3 we should conclude the whole work in a summary.*

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### Conclusions

Cloud computing is a recent advancement in information technology. It provides various ‘cloud-based services’ to end-users on the basis of usage-based payment model. The aim of the cloud service provider is to save time, save money as well as access cloud service from anywhere anytime and from any device. It provides the number of benefits, so the user of cloud services is increased nowadays. So, there is a need to handle many user requests, for that the load balancing techniques are used in cloud computing. In this paper we have proposed the MACO algorithm for achieving tasks scheduling with load balancing, and we have experimentally evaluated the M\_LB\_ACO algorithm in applications with the number of tasks varying from 1 to 100. One machine can execute a single task at a time. but Our system will detect the execution time of a task automatically. If a new task comes and all the machines are busy, then load balancer will create another machine if the cost of machines fulfils the budget function. If the budget exceeds, then load balancer will add the task onto queue and then the MACO algorithm will find the optimized machine to reduce cost and time where the task will be executed. If there is no new task, then the idle machines will be turned off and thus cost will be reduced. The experimental result shows that the LBACO balance the entire system load effectively. Ant Colony behavior load balancing, improves the general turnout of process and priority based balancing focuses on reducing the make span, time a task must help a queue of the VM. Thus, it reduces the response of time of VMs. The experimental results show that the formula is effective when put next with other existing algorithms. Our approach illustrates that there's a big improvement in average execution time and reduction in waiting time of tasks on queue. this proposed work is developed for achieving better resource utilization, minimum completion time and improve the system of performance in a cloud computing environment.

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### Future Work

In this paper we have proposed Efficient load balancing based on the MO-ACO algorithm, which considers the make span, cost and load balancing. The algorithm establishes the constraint function of task completion time, cost and load, improves the basic ant colony algorithm heuristic function and pheromone update rule, and adopts the pseudo - random transition probability rule in ant colony system. We experimented with the algorithm in the multithreading using python and the experiment proved the effectiveness of the algorithm. In practice, cloud computing is more complex. In future research, we will consider the dependency between tasks, increase the number of tasks in the experiment, consider the factors such as customer satisfaction

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| Vm | Virtual machine |
| DC | Data center |
| T\_l | Task Length |
| Qos | Quality of service |
| Avg | Average |
| Min | Minimum |
| Max | Maximum |

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