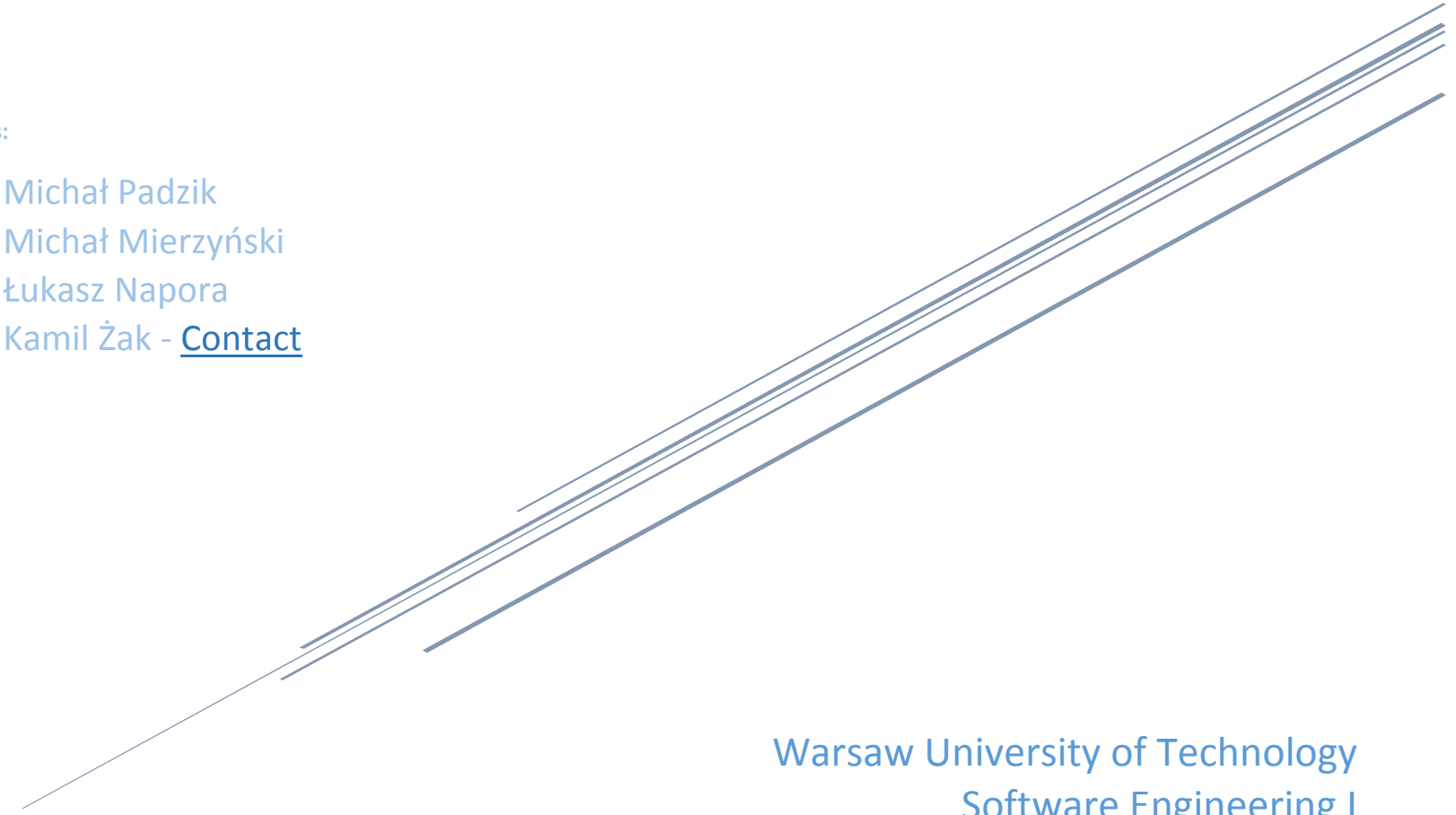
COMPUTATIONAL CLUSTER

Authors:

- Michał Padzik
- Michał Mierzyński
- Łukasz Napora
- Kamil Żak - Contact



Warsaw University of Technology
Software Engineering I

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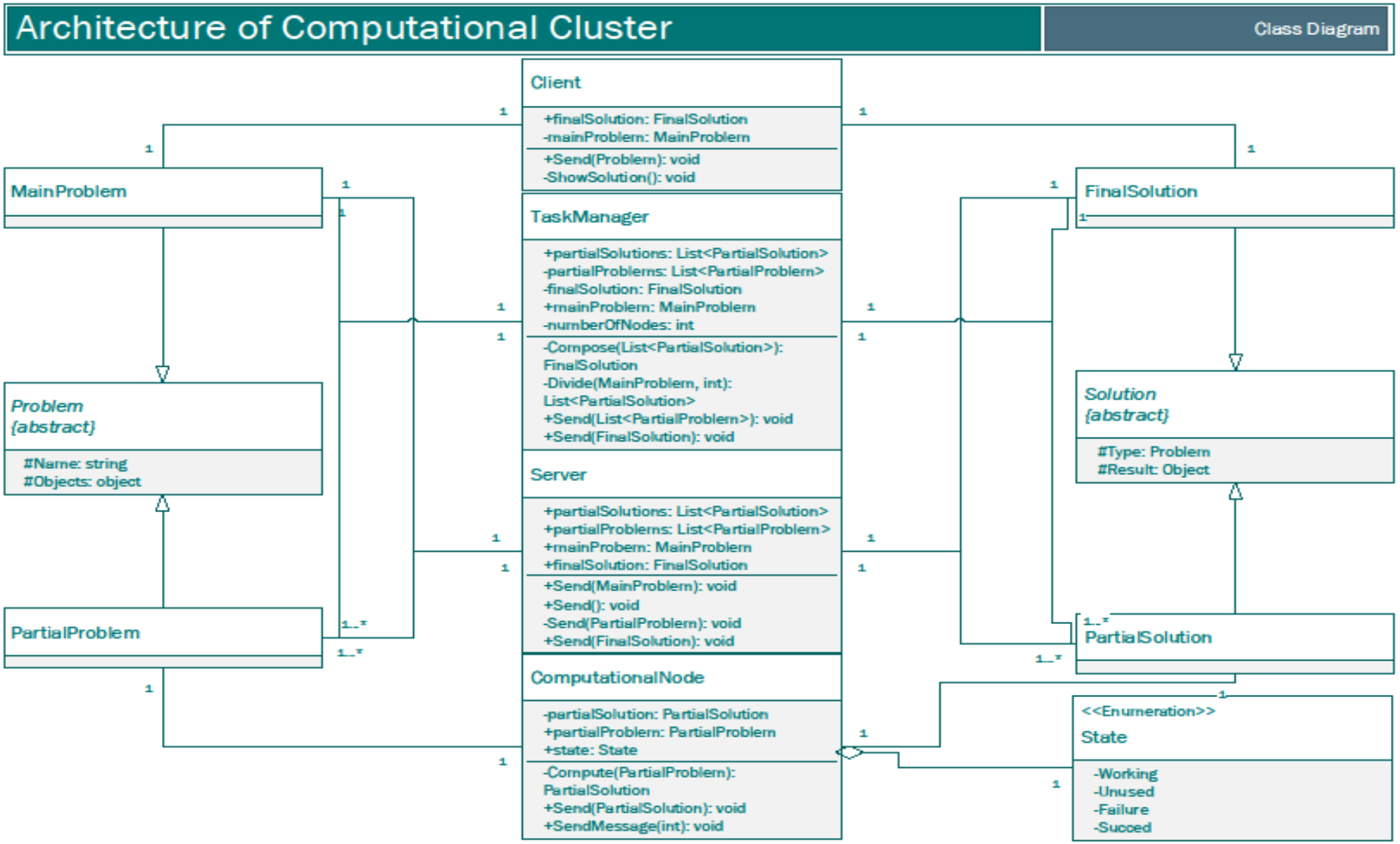
Introducion

Description

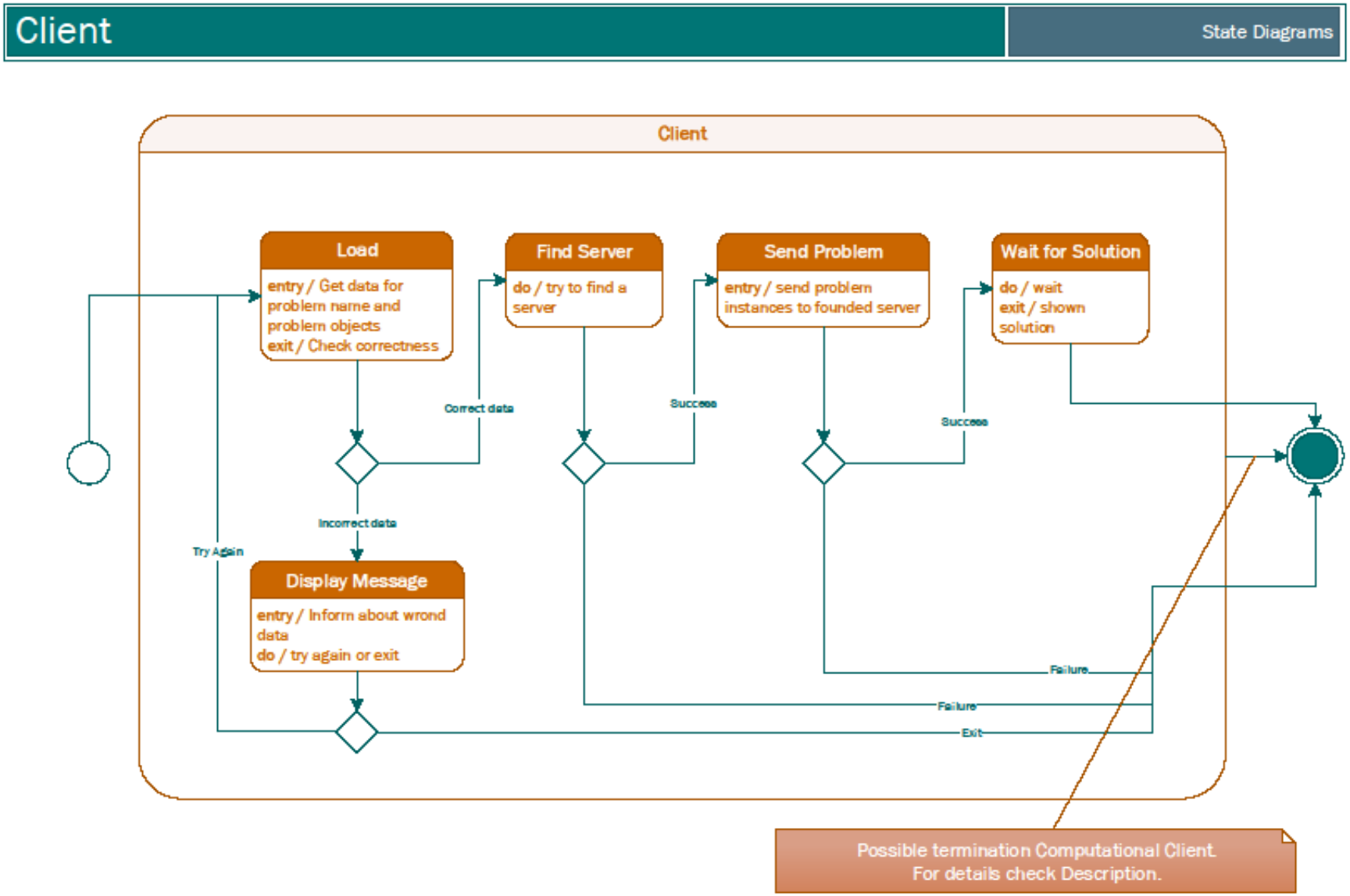
Remark: all modules could be terminated due to lack of electricity, imbecility of users or unhandled exceptions, but all of this cases are not destroying for computations. Modules provides system of making a logs and restoring lost or crashed part of computation and resume solving the problem.

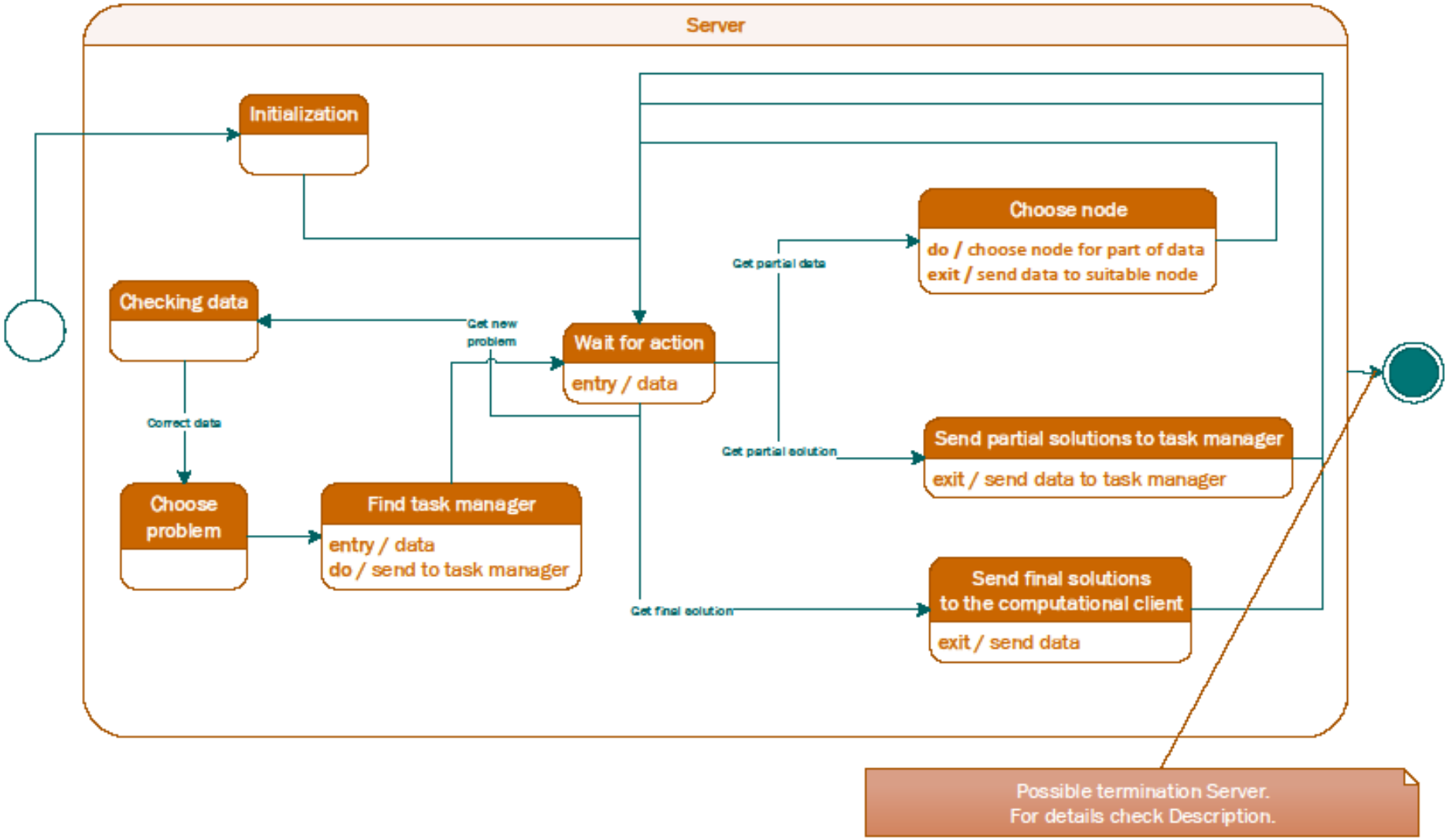
Architecture

Class diagrams



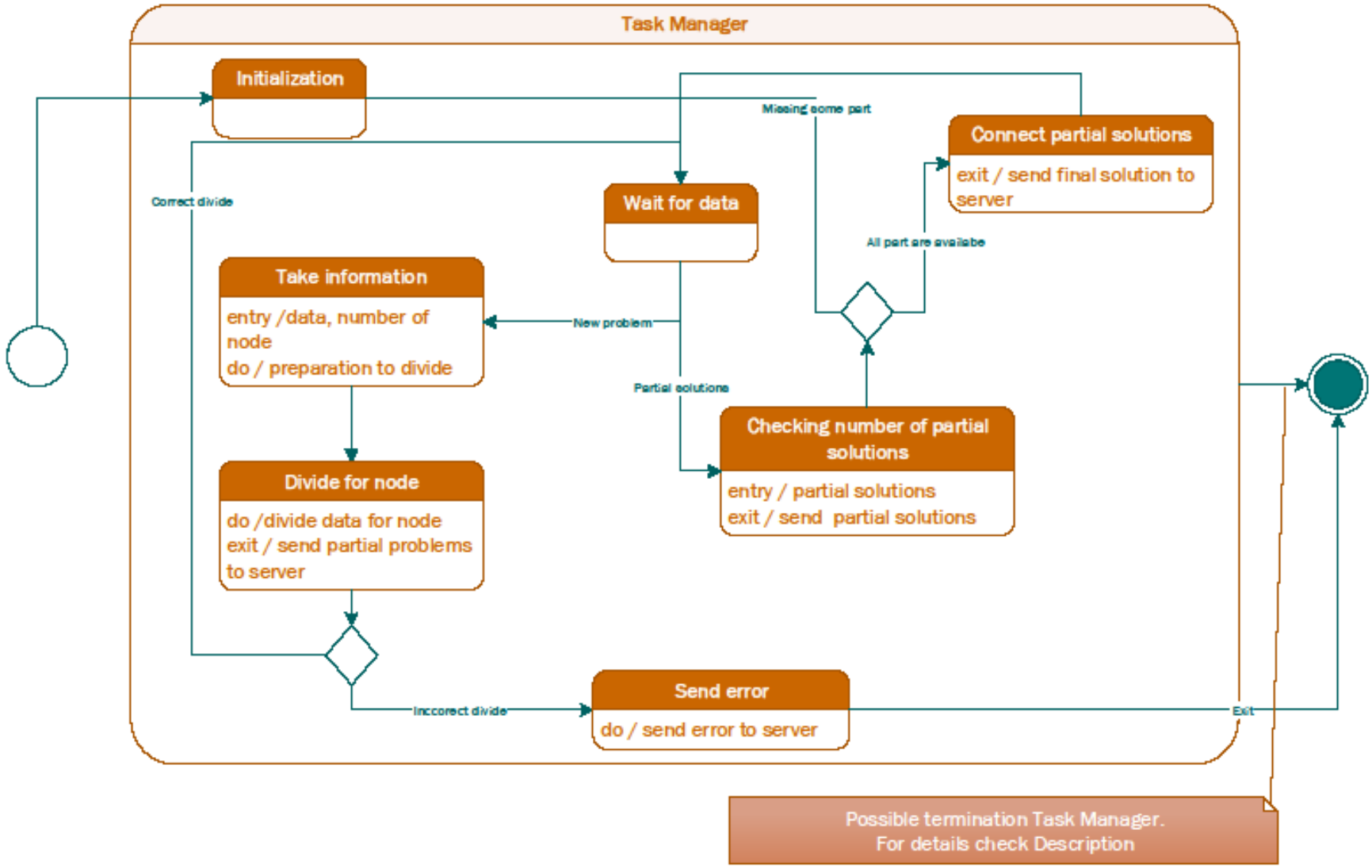
State diagrams




Server
Initialization
Checking data
Get new problem
Wait for action
entry / data
Choose node
do / choose node for part of data
exit / send data to suitable node
Get partial data
Correct data
Choose problem
Find task manager
entry / data
do / send to task manager
Get partial solution
Send partial solutions to task manager
exit / send data to task manager
Get final solution
Send final solutions to the computational client
exit / send data
Possible termination Server.
For details check Description.

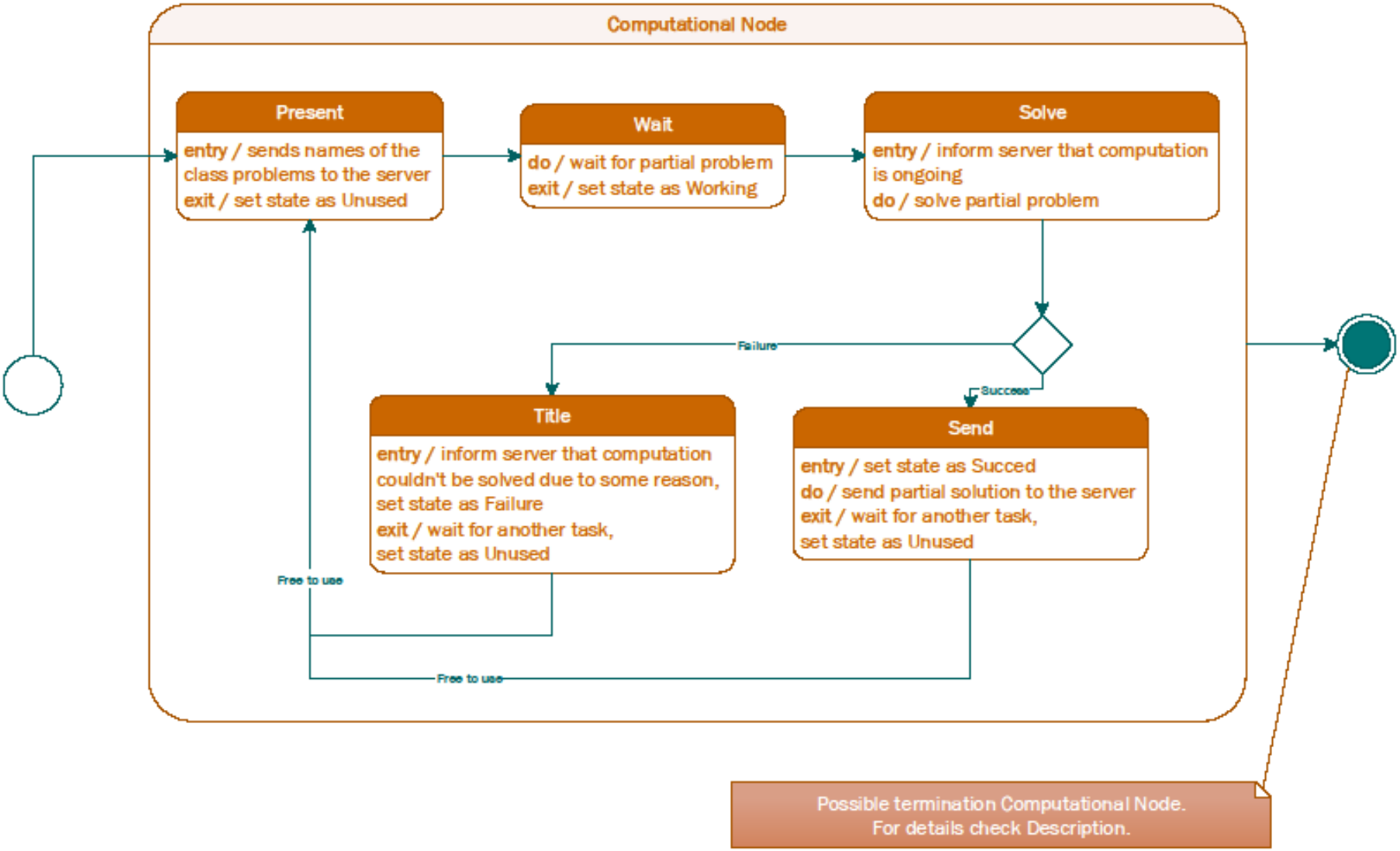
Task Manager

State Diagrams



Computational Node

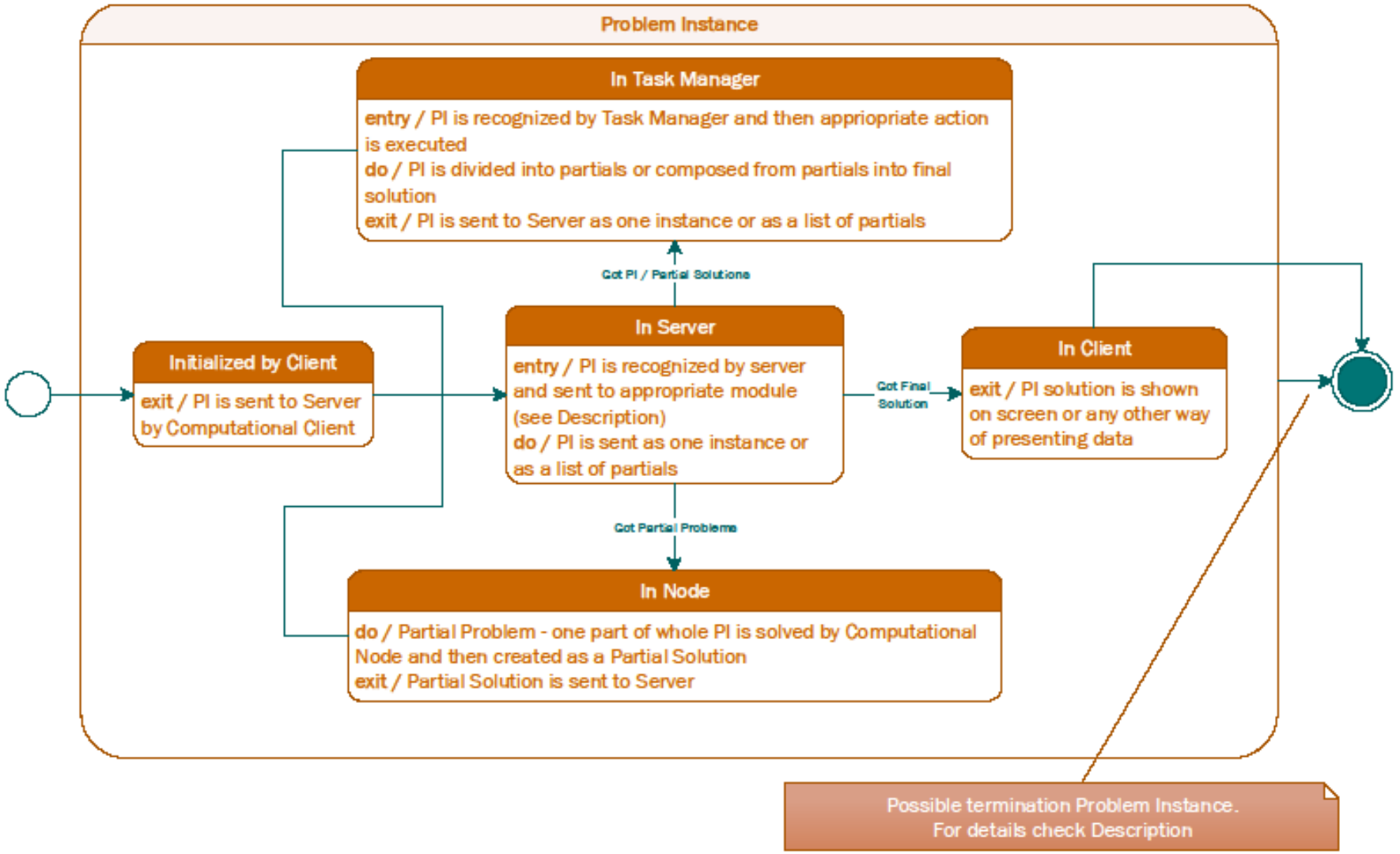
State Diagrams



Problem Instance

State Diagrams

PI = Problem Insance



Event flow diagrams

Activity diagrams

Sequence diagrams

Communication protocol desing

Input data format specification

Special system states description

Example class problem