

OccupationMonitor

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Table of Contents

OccupationMonitor Use Case.....	4
OccupationMonitor Class Diagram.....	9
Analytic class diagram.....	16
OccupationMonitor Activity Diagram.....	18
GenerateImage.....	22

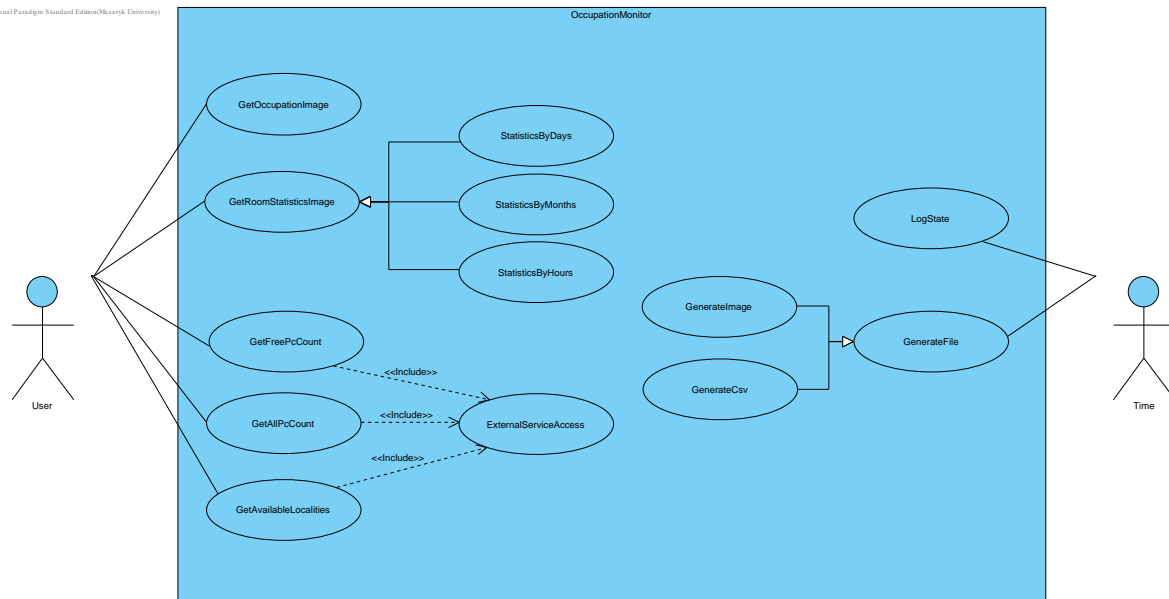
Table of Figures

OccupationMonitor Use Case.....	4
OccupationMonitor Class Diagram.....	9
Analytic class diagram.....	16
OccupationMonitor Activity Diagram.....	18
GenerateImage.....	22

Use Case Diagram








OccupationMonitor Use Case

Visual Paradigm Standard Edition (Macintosh, University)



Summary

Name	Description
User	
Time	
StatisticsByMonths	Returns image representing utilization rate of the studyroom by months.
StatisticsByDays	Returns image representing utilization rate of the studyroom by days.
StatisticsByHours	Returns image representing utilization rate of the studyroom by hours.
GenerateFile	Periodically generates file.
ExternalServiceAccess	Accesses external service to find locality.
GenerateCsv	Periodically generates CSV-file representing the state of studyroom. Used classes: CsvGenerator Config
GenerateImage	Periodically generates image representing state of the studyroom.

	<p>Used classes:</p> <p>OccupationDrawer</p> <p>ImgsPaths</p> <p>Config</p>
 LogState	<p>Periodically logs state of the studyroom.</p> <p>Used classes:</p> <p>MapLocalityProcessor</p>
 GetAllPcCount	<p>Returns number of all computers in the studyroom.</p> <p>Used classes:</p> <p>ErrorLogger</p>
 GetRoomStatisticsImage	<p>Returns image representing utilization rate of the studyroom.</p> <p>Used classes:</p> <p>IntervalsPreProcessors</p> <p>LogItem</p> <p>IntervalsProcessor</p> <p>StatsDrawer</p> <p>OccupationInterval</p>
 GetFreePcCount	<p>Returns number of free computers in the studyroom.</p> <p>Used classes:</p> <p>ErrorLogger</p>
 GetAvailableLocalities	<p>Returns list of IDs and names of available localities.</p> <p>Used classes:</p> <p>ErrorLogger</p>
 GetOccupationImage	<p>Returns image representing occupation of the studyroom.</p> <p>Used classes:</p> <p>ErrorLogger</p> <p>Config</p> <p>ImgsPaths</p>
 OccupationMonitor	

Description

Functional requirements

1. System can generate image representing occupation of the room.
2. System can generate statistics of utilization of room.
3. System can return number of all computers in room.
4. System can return number of available computers in room.
5. System can list all available rooms.
6. State of room can be periodically logged.
7. Image of room can be periodically generated.
8. CSV-file representing the room can be periodically generated.

Non-functional requirements

1. System will be implemented in C#.
2. System will generate images in less than 5 seconds.
3. System will serve at least 50 users at the same time.

Details

 **User**







 **Time**

- **StatisticsByMonths**
- **StatisticsByDays**
- **StatisticsByHours**
- **GenerateFile**
- **ExternalServiceAccess**
- **GenerateCsv**
- **GenerateImage**
- **LogState**
- **GetAllPcCount**
- **GetRoomStatisticsImage**
- **GetFreePcCount**
- **GetAvailableLocalities**

GetOccupationImage

OccupationMonitor

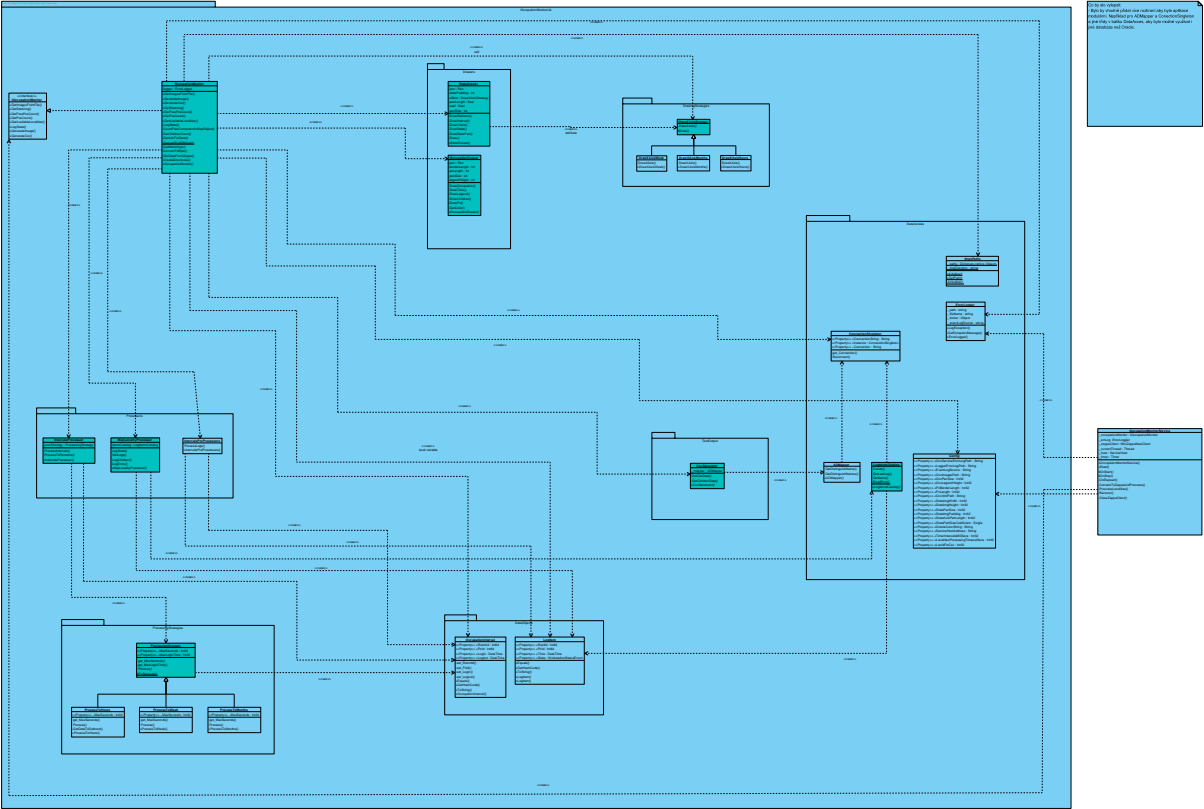
Children

Name	Description
 GetOccupationImage	Returns image representing occupation of the studyroom. Used classes: ErrorLogger Config ImgsPaths
 GetAvailableLocalities	Returns list of IDs and names of available localities. Used classes: ErrorLogger
 GetFreePcCount	Returns number of free computers in the studyroom. Used classes: ErrorLogger
 GetRoomStatisticsImage	Returns image representing utilization rate of the studyroom. Used classes: IntervalsPreProcessors LogItem IntervalsProcessor StatsDrawer OccupationInterval
 GetAllPcCount	Returns number of all computers in the studyroom. Used classes: ErrorLogger
 LogState	Periodically logs state of the studyroom. Used classes:

	MapLocalityProcessor
● GenerateImage	Periodically generates image representing state of the studyroom. Used classes: OccupationDrawer ImgsPaths Config
● GenerateCsv	Periodically generates CSV-file representing the state of studyroom. Used classes: CsvGenerator Config
● ExternalServiceAccess	Accesses external service to find locality.
● GenerateFile	Periodically generates file.
● StatisticsByHours	Returns image representing utilization rate of the studyroom by hours.
● StatisticsByDays	Returns image representing utilization rate of the studyroom by days.
● StatisticsByMonths	Returns image representing utilization rate of the studyroom by months.


















Class Diagram

OccupationMonitor Class Diagram



Summary




















Name	Description
OccupationMonitorLib	
Drawers	
OccupationMonitor	
StatsDrawer	
IOccupationMonitor	
DrawingStrategies	
DrawXAxisStrategy	
OccupationDrawer	
DrawXAxisMonths	
DrawXAxisHours	
DrawXAxisWeek	
DataAccess	
ImgsPaths	
ErrorLogger	
ConnectionSingleton	
Processors	
OccupationMonitorService	

 TextOutput	
 IntervalsProcessor	
 MapLocalityProcessor	
 IntervalsPreProcessors	
 Config	
 ADMapper	
 LogItemsCatalog	
 CsvGenerator	
 DataObjects	
 ProcessingStrategies	
 OccupationInterval	
 LogItem	
 ProcessingStrategy	
 ProcessToHours	
 ProcessToWeek	
 ProcessToMonths	
 N/A	<p>Co by slo vylepsit:</p> <ul style="list-style-type: none"> - Bylo by vhodné přidat více rozhraní aby byla aplikace modulární. Například pro ADMapper a ConnectionSingleton a jiné třídy v balíku DataAccess, aby bylo možné využívat i jiné databáze než Oracle.

Details

OccupationMonitorLib

Children

Name	Description
 Drawers	
 OccupationMonitor	
 StatsDrawer	
 IOccupationMonitor	
 DrawingStrategies	
 DrawXAxisStrategy	
 OccupationDrawer	
 DataAccess	
 Processors	
 TextOutput	
 IntervalsProcessor	
 MapLocalityProcessor	
 LogItemsCatalog	
 CsvGenerator	
 DataObjects	
 ProcessingStrategies	
 ProcessingStrategy	
 Enums	
 MiniZappa	

Drawers




OccupationMonitor

StatsDrawer

IOccupationMonitor

DrawingStrategies

Children

Name	Description
 DrawXAxisMonths	
 DrawXAxisHours	
 DrawXAxisWeek	

DrawXAxisStrategy

OccupationDrawer






DrawXAxisMonths

 **DrawXAxisHours**

 **DrawXAxisWeek**

 **DataAccess**

Children

Name	Description
 ImgsPaths	
 ErrorLogger	
 ConnectionSingleton	
 Config	
 ADMapper	

 **ImgsPaths**

 **ErrorLogger**

 **ConnectionSingleton**

 **Processors**

Children

Name	Description
 IntervalsPreProcessors	

 **OccupationMonitorService**

 **TextOutput**

 **IntervalsProcessor**

 **MapLocalityProcessor**

 **IntervalsPreProcessors**

 **Config**

 **ADMapper**

 **LogItemsCatalog**

 **CsvGenerator**




 **DataObjects**

Children

Name	Description
 OccupationInterval	
 LogItem	

 **ProcessingStrategies**

Children

Name	Description
 ProcessToHours	
 ProcessToWeek	
 ProcessToMonths	

 **OccupationInterval**

 **LogItem**

 **ProcessingStrategy**

 **ProcessToHours**

 **ProcessToWeek**

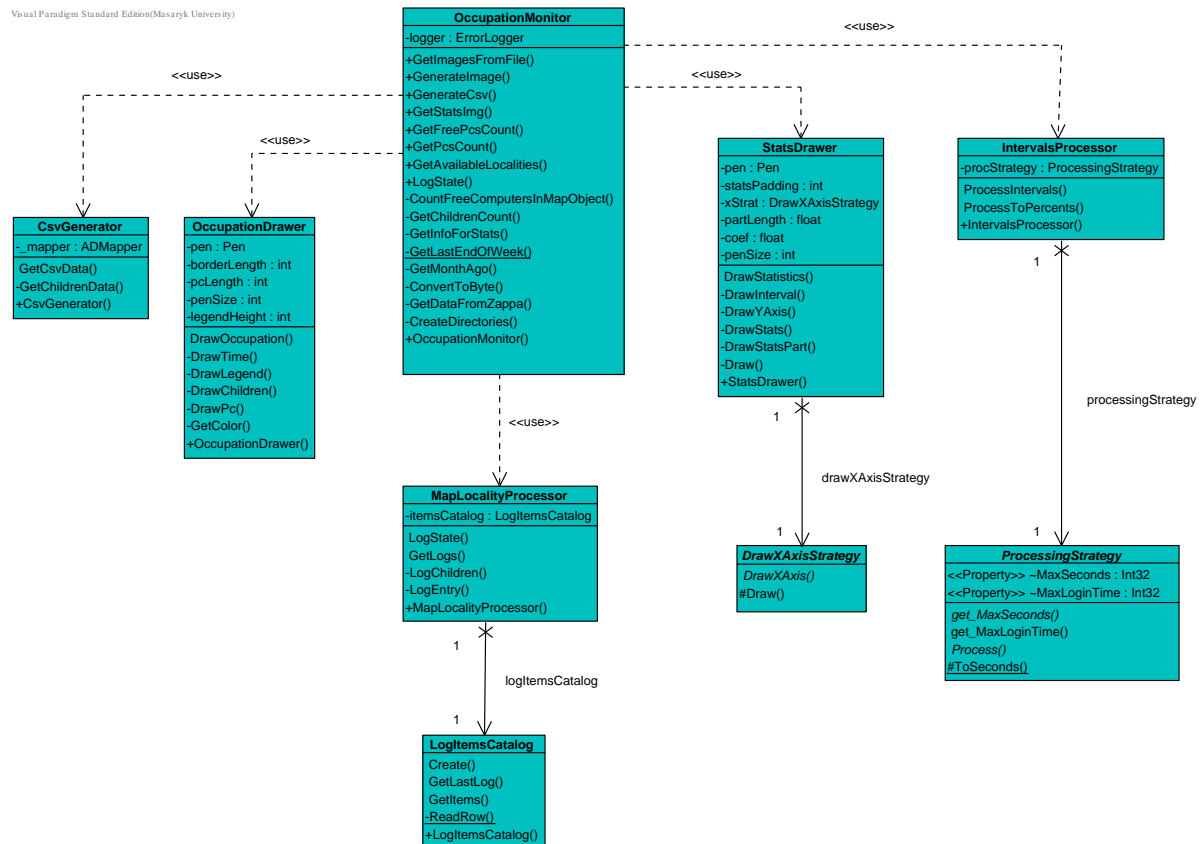
 **ProcessToMonths**

 **N/A**

Class Diagram

Analytic class diagram

Visual Paradigm Standard Edition(Masaryk University)










Summary

Name	Description
OccupationMonitor	
StatsDrawer	
IntervalsProcessor	
CsvGenerator	
OccupationDrawer	
MapLocalityProcessor	
DrawXAxisStrategy	
ProcessingStrategy	
LogItemsCatalog	

Details

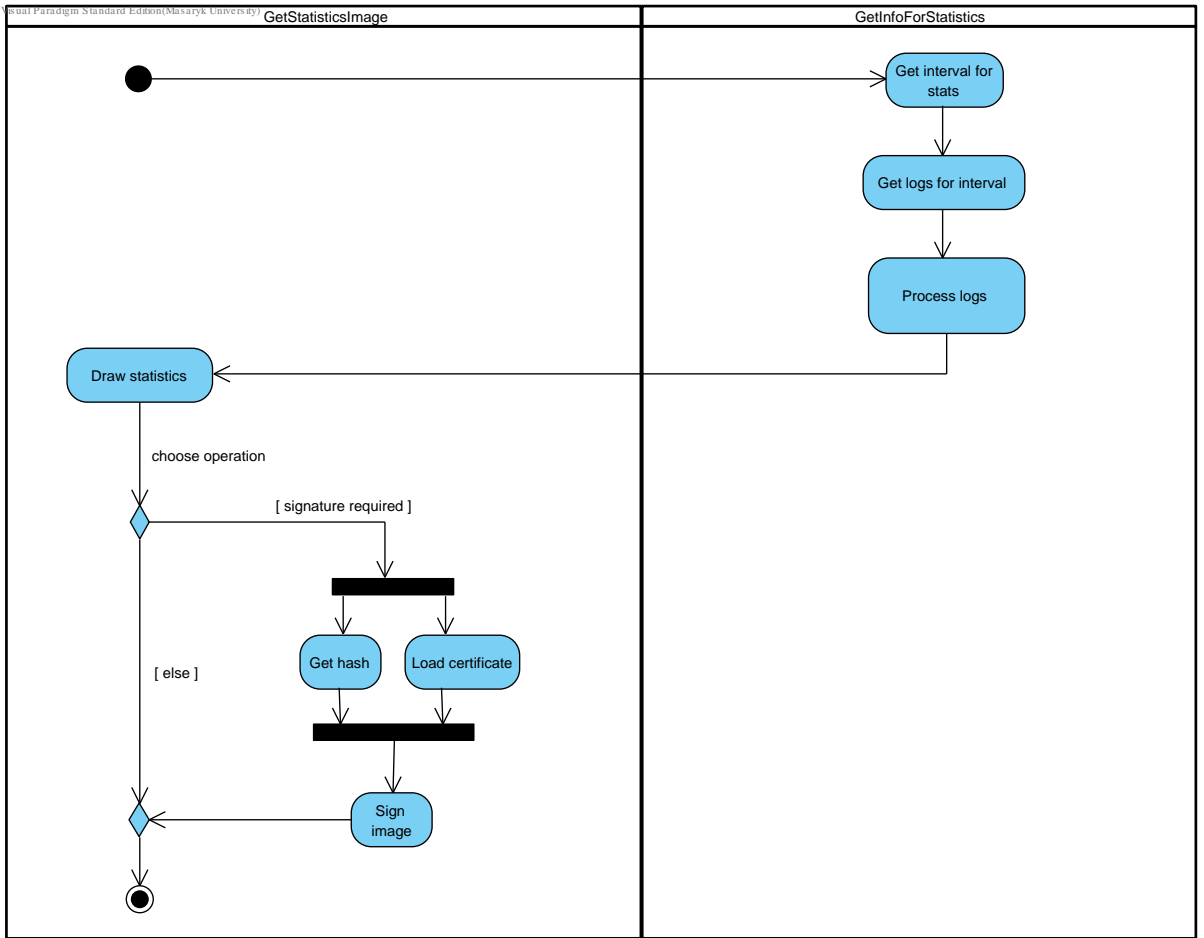
OccupationMonitor

StatsDrawer

-  **IntervalsProcessor**
-  **CsvGenerator**
-  **OccupationDrawer**
-  **MapLocalityProcessor**
-  **DrawXAxisStrategy**
-  **ProcessingStrategy**
-  **LogItemsCatalog**

Activity Diagram

OccupationMonitor Activity Diagram













Summary





Name	Description
Swimlane	
GetStatisticsImage	
GetInfoForStatistics	
Get interval for stats	
Get logs for interval	
Process logs	
Draw statistics	
Get hash	
Load certificate	
Sign image	

Details

Swimlane

Activity Partitions

GetStatisticsImage		
Contained Elements	Name	Description
	 N/A	
	 N/A	
	 Draw statistics	
	 N/A	
	 N/A	
	 Get hash	
	 Load certificate	
	 N/A	
	 Sign image	
	 N/A	

GetInfoForStatistics		
Contained Elements	Name	Description
	 Get logs for interval	
	 Process logs to hours	
	 Get interval for stats	
	 Process logs	

 N/A

 Get interval for stats

 Get logs for interval

 Process logs

 Draw statistics

 N/A

 N/A

 Get hash

 Load certificate

 N/A

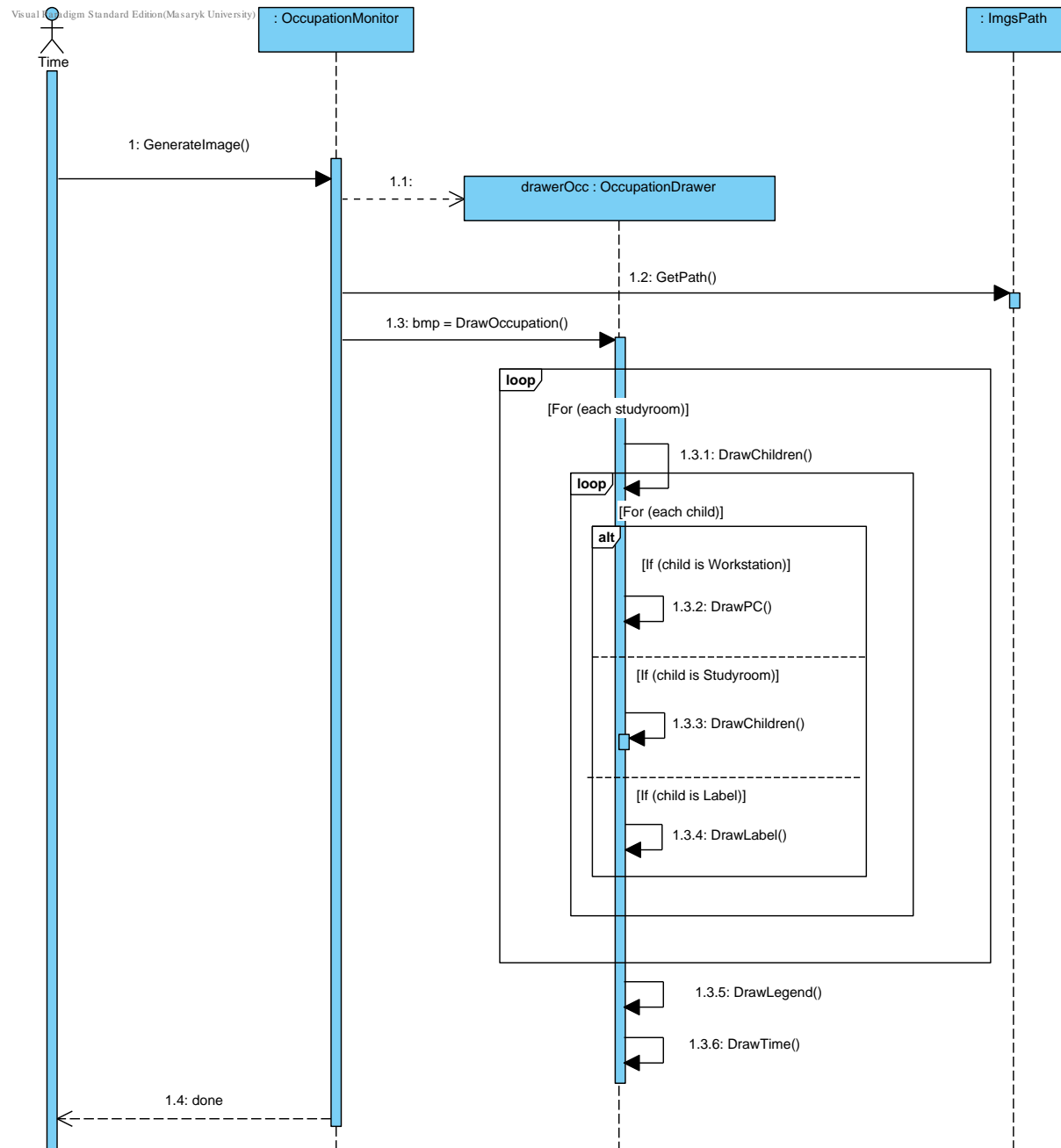
 Sign image

 N/A

● N/A




Sequence Diagram

GenerateImage



Summary

Name	Description
Time	
: OccupationMonitor	
drawerOcc : OccupationDrawer	
: ImgPath	
Loop	

 Operand	
 loop	
 Operand2	
 alt	
 Operand3	
 Operand4	
 Operand	

Details

Time

 : OccupationMonitor

 drawerOcc : OccupationDrawer

 : ImgsPath

Loop

Operand

Children

Name	Description
 loop	

loop

Operand2

Children

Name	Description
 alt	

alt

Operand3

Operand4

Operand