

Assignment 4. CNB Project Execution Phase

Educational project “Crash and Burn Laboratory”

Project execution phase

Task and Schedule Management

According to scrum framework each sprint and its user stories (including tasks) are monitored and controlled by “Sprint Board”. Each User story contains tasks. Therefore tasks will be analog of cards on the Kanban board.

Below are Sprint boards for 11 sprints.

Sprint board for Sprint #1

User Story	Assigned to	Status		
		New	Active	Done
User Story #1. Prepare for Introduction		<p>Task 1. Estimate timing in frame of lesson length</p> <p>Task 2. Plan pitch</p>		
User Story #2. Delivering Introduction		<p>Task 3. Check equipment before labs</p> <p>Task 4. Handle 3 hours laboratory work with students</p> <p>Task 5. Give theoretical knowledge during labs</p>		
User Story #3. Q&A session		<p>Task 6. Give feedback, reflect.</p>		

Sprint board for Sprint #2

User Story	Assigned to	Status		
		New	Active	Done
User Story #4. Prepare input materials		Task 7. Choose appropriate equipment, tools,		
		Task 8. Find equipment and tools at lowest possible price		
		Task 9. Material pass to bring the equipment to University		
		Task 10. Transportation arrangements		
User Story #5. Prepare for Laboratory 1		Task 11. Test equipment according to Laboratory 1 plan		
		Task 12. Estimate timing in frame of lesson length		
		Task 13. Plan pitch		
User Story #6. Delivering Laboratory 1		Task 14. Check equipment before labs		
		Task 15. Handle 3 hours laboratory work with students		
		Task 16. Give theoretical knowledge during labs		

Sprint board for Sprint #3

User Story	Assigned to	Status		
		New	Active	Done
User Story #7. Prepare input materials		Task 17. Choose appropriate equipment, tools,		
		Task 18. Find equipment and tools at lowest possible price		
		Task 19. Material pass to bring the equipment to University		
		Task 20. Transportation arrangements		
User Story #8. Prepare for Laboratory 2		Task 21. Test equipment according to Laboratory 2 plan		
		Task 22. Estimate timing in frame of lesson length		
		Task 23. Plan pitch		
User Story #9. Delivering Laboratory 2		Task 24. Check equipment before labs		
		Task 25. Handle 3 hours laboratory work with students		
		Task 26. Give theoretical knowledge during labs		

Sprint board for Sprint #4

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #10. Prepare input materials</p>		<p>Task 27. Choose appropriate equipment, tools,</p> <p>Task 28. Find equipment and tools at lowest possible price</p> <p>Task 29. Material pass to bring the equipment to University</p> <p>Task 30. Transportation arrangements</p>		
<p>User Story #11. Prepare for Laboratory 3</p>		<p>Task 31. Test equipment according to Laboratory 3 plan</p> <p>Task 32. Estimate timing in frame of lesson length</p> <p>Task 33. Plan pitch</p>		
<p>User Story #12. Delivering Laboratory 3</p>		<p>Task 34. Check equipment before labs</p> <p>Task 35. Handle 3 hours laboratory work with students</p> <p>Task 36. Give theoretical knowledge during labs</p>		

Sprint board for Sprint #5

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #13. Prepare input materials</p>		<p>Task 37. Choose appropriate equipment, tools,</p> <p>Task 38. Find equipment and tools at lowest possible price</p> <p>Task 39. Material pass to bring the equipment to University</p> <p>Task 40. Transportation arrangements</p>		
<p>User Story #14. Prepare for Laboratory 4</p>		<p>Task 41. Test equipment according to Laboratory 4 plan</p> <p>Task 42. Estimate timing in frame of lesson length</p> <p>Task 43. Plan pitch</p>		
<p>User Story #15. Delivering Laboratory 4</p>		<p>Task 44. Check equipment before labs</p> <p>Task 45. Handle 3 hours laboratory work with students</p> <p>Task 46. Give theoretical knowledge during labs</p>		

Sprint board for Sprint #6

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #16. Prepare input materials</p>		<p>Task 47. Choose appropriate equipment, tools,</p> <p>Task 48. Find equipment and tools at lowest possible price</p> <p>Task 49. Material pass to bring the equipment to University</p> <p>Task 50. Transportation arrangements</p>		
<p>User Story #17. Prepare for Laboratory 5</p>		<p>Task 51. Test equipment according to Laboratory 5 plan</p> <p>Task 52. Estimate timing in frame of lesson length</p> <p>Task 53. Plan pitch</p>		
<p>User Story #18. Delivering Laboratory 5</p>		<p>Task 54. Check equipment before labs</p> <p>Task 55. Handle 3 hours laboratory work with students</p> <p>Task 56. Give theoretical knowledge during labs</p>		

Sprint board for Sprint #7

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #19. Prepare input materials</p>		<p>Task 57. Choose appropriate equipment, tools,</p> <p>Task 58. Find equipment and tools at lowest possible price</p> <p>Task 59. Material pass to bring the equipment to University</p> <p>Task 60. Transportation arrangements</p>		
<p>User Story #20. Prepare for Laboratory 6</p>		<p>Task 61. Test equipment according to Laboratory 6 plan</p> <p>Task 62. Estimate timing in frame of lesson length</p> <p>Task 63. Plan pitch</p>		
<p>User Story #21. Delivering Laboratory 6</p>		<p>Task 64. Check equipment before labs</p> <p>Task 65. Handle 3 hours laboratory work with students</p> <p>Task 66. Give theoretical knowledge during labs</p>		

Sprint board for Sprint #8

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #22. Prepare input materials</p>		<p>Task 67. Choose appropriate equipment, tools,</p> <p>Task 68. Find equipment and tools at lowest possible price</p> <p>Task 69. Material pass to bring the equipment to University</p> <p>Task 70. Transportation arrangements</p>		
<p>User Story #23. Prepare for Laboratory 7</p>		<p>Task 71. Test equipment according to Laboratory 7 plan</p> <p>Task 72. Estimate timing in frame of lesson length</p> <p>Task 73. Plan pitch</p>		
<p>User Story #24. Delivering Laboratory 7</p>		<p>Task 74. Check equipment before labs</p> <p>Task 75. Handle 3 hours laboratory work with students</p> <p>Task 76. Give theoretical knowledge during labs</p>		

Sprint board for Sprint #9

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #25. Prepare input materials</p>		<p>Task 77. Choose appropriate equipment, tools,</p> <p>Task 78. Find equipment and tools at lowest possible price</p> <p>Task 79. Material pass to bring the equipment to University</p> <p>Task 80. Transportation arrangements</p>		
<p>User Story #26. Prepare for Laboratory 8</p>		<p>Task 81. Test equipment according to Laboratory 8 plan</p> <p>Task 82. Estimate timing in frame of lesson length</p> <p>Task 83. Plan pitch</p>		
<p>User Story #27. Delivering Laboratory 8</p>		<p>Task 84. Check equipment before labs</p> <p>Task 85. Handle 3 hours laboratory work with students</p> <p>Task 86. Give theoretical knowledge during labs</p>		

Sprint board for Sprint #10

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #28. Prepare input materials</p>		<p>Task 87. Choose appropriate equipment, tools,</p> <p>Task 88. Find equipment and tools at lowest possible price</p> <p>Task 89. Material pass to bring the equipment to University</p> <p>Task 90. Transportation arrangements</p>		
<p>User Story #29. Prepare for End Term</p>		<p>Task 91. Test equipment according to End Term plan</p> <p>Task 92. Estimate timing in frame of lesson length</p> <p>Task 93. Plan pitch</p>		
<p>User Story #30. Delivering End Term</p>		<p>Task 94. Check equipment before labs</p> <p>Task 95. Handle 3 hours laboratory work with students</p> <p>Task 96. Give theoretical knowledge during labs</p>		

Sprint board for Sprint #11

User Story	Assigned to	Status		
		New	Active	Done
<p>User Story #31. Prepare input materials</p>		<p>Task 97. Choose appropriate equipment, tools,</p> <p>Task 98. Find equipment and tools at lowest possible price</p> <p>Task 99. Material pass to bring the equipment to University</p> <p>Task 100. Transportation arrangements</p>		
<p>User Story #32. Prepare for Final Exam</p>		<p>Task 101. Test equipment according to Final Exam plan</p> <p>Task 102. Estimate timing in frame of lesson length</p> <p>Task 103. Plan pitch</p>		
<p>User Story #33. Delivering Final Exam</p>		<p>Task 104. Check equipment before labs</p> <p>Task 105. Handle 3 hours laboratory work with students</p> <p>Task 106. Give theoretical knowledge during labs</p>		

Cost Management

Classroom for organizing labs will be provided by University. Therefore no renting.

University will cover all the costs related to utility bills (like electricity, internet, heating, security, cleaning and video surveillance etc.). Therefore no monthly payments for that.

University covers salary payments for the staff.

The main costs related with purchasing laboratory equipment, tools and stationery.

Manpower costs

Position	Rate	Cost
Senior-lecturer	1.0	440 000
Lecturer assistant	1.0	280 000
Department director	1.0	550 000
Scrum master	1.0	400 000
Total:		2 190 000

Equipment costs

Description	P/N:	Q-ty	Price
<u>Rack and Power Systems</u>			
30U Rack with Cooling System		1	120 000
HP Power Distribution Unit		2	60 000
HP PDU Extension Bar		2	35 000
UPS APC CS650		2	30 000
<u>Rack mount servers</u>			
IBM System x3250	4364K1G	1	80 000
Asus Z8NR-D12	Z8NR-D12	1	190 000
Intel Server System SR1600URHSR	E86278-001	1	150 000
Dell PowerEdge R320	FK0PNW1	1	250 000
HP ProLiant DL385R01	391111-421	1	40 000

<u>Tower servers</u>			
Dell PowerEdge 1900	ECM01	1	70 000
HP ProLiant ML370 G5	433750-421	1	70 000
MicroServer		1	50 000
<u>Storage Systems</u>			
HP X9320 14.4TB Capacity Block Exp Kit	QP338A	1	350 000
3PAR F-Class	QL226B	1	250 000
<u>Backup Systems</u>			
HP StorageWorks 1/8 G2 Tape Autoloader	435243-002	1	150 000
HP LTO-5 Drive		1	70 000
HP Ultrium LTO-5 Tapes		10	30 000
<u>Networking Systems</u>			
Cisco 2800 Series	CISCO2801 V04	1	60 000
Cisco 2600 XM Series	800-20059-01	1	60 000
Cisco 48-port 10/100 Managed Switch	SRW248G4-K9 V02	3	90 000
Cisco Aironet 802.11n Single Band Access Point	AIR-LAP1041N-E-K9	5	100 000
Allied Telesyn AT-8000S Series	AT-8000S/48	1	25 000
Allied Telesyn AT-8000S Series	AT-8000S/24	1	20 000
HP ProCurve Switch 2510-48	J9020A	2	70 000
HP AdvanceStack Hub-16U	J2611B	1	10 000
RubyTech ES-2226C	ES-2226C	1	20 000
Acorn 10/100 Fast Ethernet Switch	HU16D2-G	1	20 000
D-Link DES-3552	RES3552A3A...A3G	1	30 000
<u>Printers and Imaging devices</u>			
HP Laserjet 1000 Series		2	20 000
HP LaserJet 1160		2	30 000
HP ScanJet G2710		2	15 000
Epson Stylus InkJet printer		1	15 000

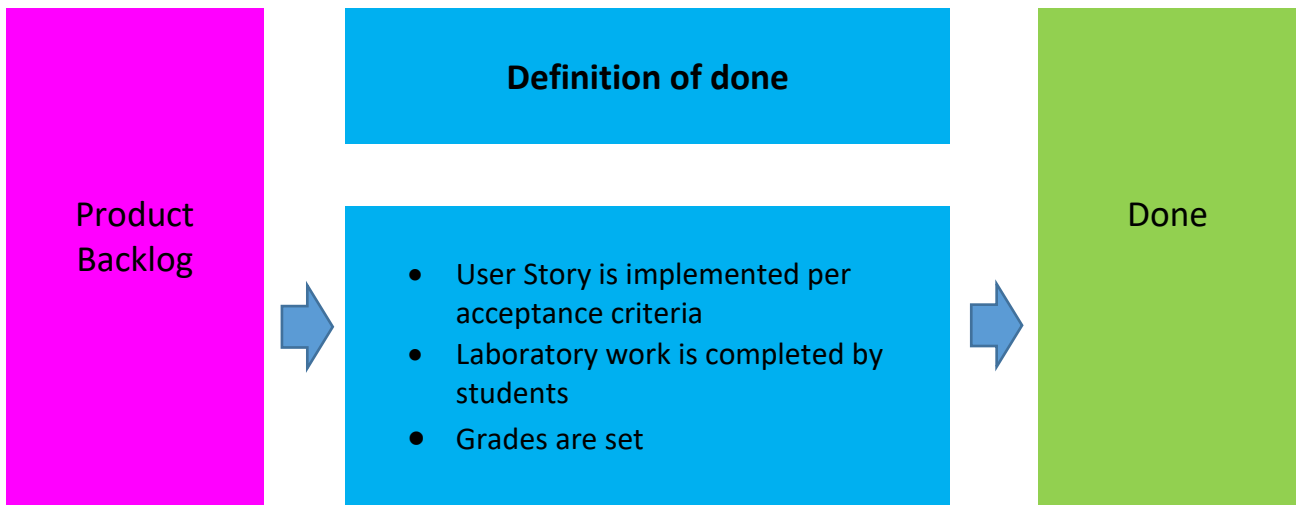
<u>Personal Computing Systems</u>			
Personal Computer		2	60 000
Notebook for disassembling		2	70 000
Monitor 17"		2	10 000
HP Compaq t5000 thin client		10	50 000
CPU for demo		1	5 000
DIMM for demo		1	5 000
PC Power Supply for demo		1	5 000
Motherboard for demo		1	10 000
PCI Adapter for demo		1	5 000
HDD for demo		1	5 000
<u>Video and Voice devices</u>			
Analog Camera		5	25 000
Analog Camera Recorder		1	20 000
IP Camera		5	40 000
IP Phone		2	15 000
<u>Tools</u>			
Multimeter		1	15 000
RJ45 Tester		1	10 000
PC Power Supply Tester		1	10 000
RJ45 crimping tool		1	10 000
Antistatic Wrist Strap		1	5 000
<u>Accessories</u>			
C13-C14 cables		20	10 000
C13-Euro cables		20	10 000
C19-Euro cables		2	10 000
UTP RJ45 cables		20	10 000
RJ45 Connectors		30	2 000

USB cables		10	5 000
VGA cables		2	1 000
Thermal Grease		1	3 000
<u>Services</u>			
Transport expenses			20 000
Installation			10 000
Banner for Laboratory			5 000
			Total 3 041 000

Quality Management

Quality of performed work is controlled by executing the work per user stories according to acceptance criteria and product owner's acceptance of user stories.

Executing the work considering the quality requirements is controlled by completing the work according to definition of done.



Change Management

While developing laboratory works it assumed that no changes in processes will occur during educational trimester.

If any unplanned change occurs, this will be managed through communications channels to team members and students.

Procurement Management

Equipment listed above are purchased from private entrepreneur who sells used equipment.

Tools and office supplies will be purchased from local suppliers.

The criteria of choosing supplier is based on lowest price with best possible quality. Also supplier must be trusted and comply with local tax regulations.

Resource Management

Position	Scrum role	Name
Senior-lecturer	Member of Development team	Sandibek Umirov
Lecturer assistant	Member of Development team	Eldar Makhmut
Department director	Product owner	Assel Smaiyl
Scrum master	Scrum master	Nurhat Ibadildin

Responsibilities of each team member:

Development team

- Creating a plan for the Sprint, the Sprint Backlog;
- Instilling quality by adhering to a Definition of Done;
- Adapting their plan each day toward the Sprint Goal; and,
- Holding each other accountable as professionals.

Product owner

- Developing and explicitly communicating the Product Goal;
- Creating and clearly communicating Product Backlog items;
- Ordering Product Backlog items; and,
- Ensuring that the Product Backlog is transparent, visible and understood.

Scrum master

- Coaching the team members in self-management and cross-functionality;
- Helping the Scrum Team focus on creating high-value Increments that meet the Definition of Done;
- Causing the removal of impediments to the Scrum Team's progress; and,
- Ensuring that all Scrum events take place and are positive, productive, and kept within the timebox.

Collaboration

Email - to officially communicate announcement, important information, meeting invitation etc.

Microsoft Teams – to organize planned and unplanned meetings with students

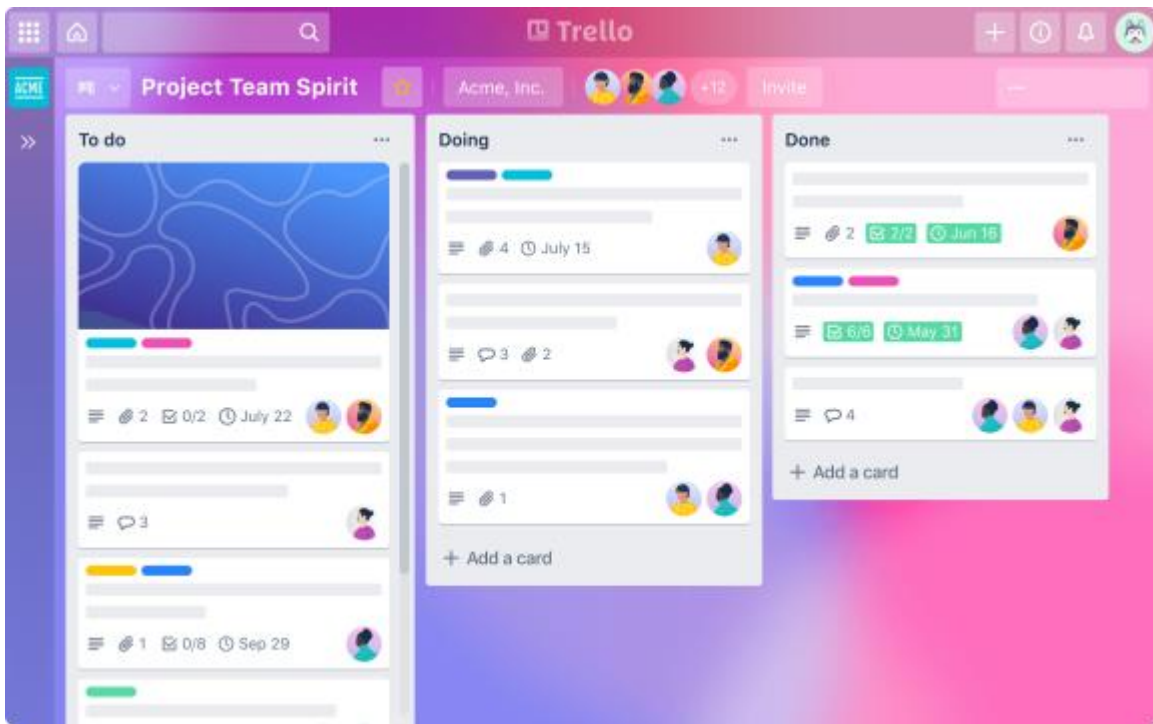
Telegram group – for instant questions and answers, reminders etc

Moodle – to officially post plan, announcements.

Trello – to manage task execution statuses

Monitor the Process

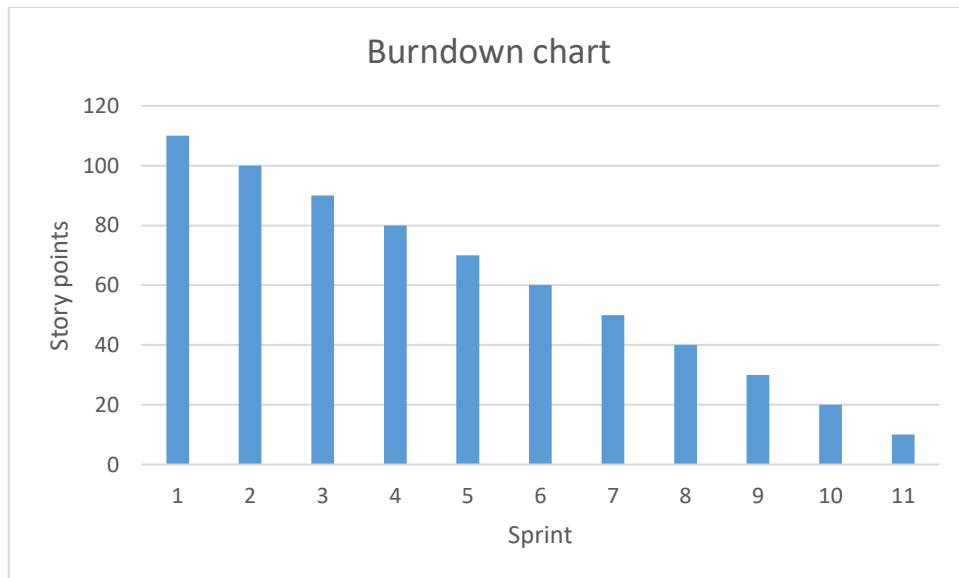
In order to monitor the progress on each task product owner and team members will use Trello tool. The statuses will be updated on daily standups



Picture 1 – Sample view of Trello teams board

Reporting

The progress of task execution will be controlled by scrum master using Burndown chart as per the diagram below:



Transfer Deliverables:

The project deliverables are the features defined in the backlog. Each sprint the team will be delivering laboratory works that will be taught to students. The list of features are listed in the product backlog.

Confirm Completion

The sign off of completing the work will be done by all interested stakeholders during sprint demo.

Review Documentation

Project related documentations will be reviewed by product owner and updated on time.

Laboratory syllabus will be approved by deans office.

Project documentation will be stored on cloud.

Release Resources

All the equipment purchased for the project purposes will be paid to suppliers as soon as equipment is handed over to University area and required papers are signed.

Do a Post-Mortem

All sprints retrospectives will be summarized and defined improvement plan for next educational year. Laboratory themes will be added or changed according to feedback from students, management team and team members.