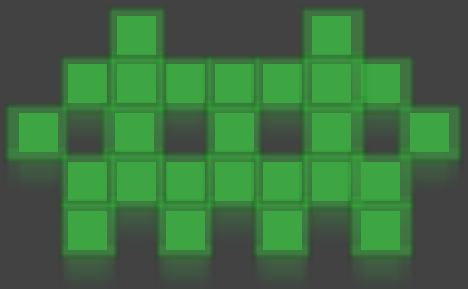
FIND THE BUG! PROJECT

A Game of Project Management in an IT Project



for 3-6 players
(playing time 30-60 min)

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Nova Suecia Games
http://www.novasuecia.se
Version 1.0

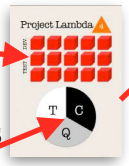
Internal

This year's program has been approved by the board and you have been assigned as a project manager. Please proceed with the project planning. Your first task is to learn about the projects and the steering groups.

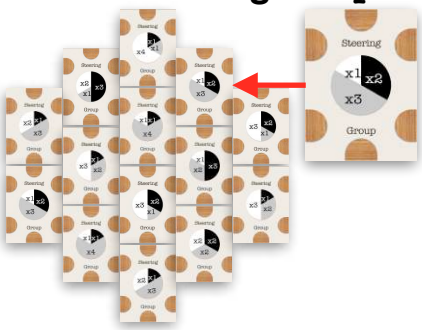
1. Prepare the projects: Shuffle the project cards. Arrange them in 3 columns of 3/3/3 cards.
2. Prepare the project tasks: Place 15 task cubes matching the color of the project on the upper half of each project card.
3. Prepare the project budgets: Shuffle the budget cards. Place 1 on the lower half of each project card. Discard the rest.
4. Prepare the project bugs: Shuffle the bug cards. Put them aside.
5. Prepare the steering groups: Shuffle the steering group cards. Arrange them in 5 columns of 2/3/4/3/2 cards. Discard the rest.
6. Prepare the project office: Take a project manager and place it in front of you with the junior face up. Choose a color. Take all 6 steering group seats (discs) of that color.
7. Prepare the project members: Sort the other project member cards. Put them aside. They are used for recruiting.
8. Prepare the report templates: Sort the risk reports, the budget reports, and the evaluation reports (triangular chits). Put them aside. They are used at go/nogo meetings.
9. Give the most senior project manager the program manager card. This is used to determine turn order.

2. Tasks

1. Projects



4. Steering Groups



3. Budgets

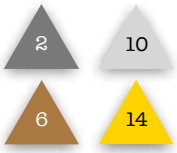
4. Bugs

5. Manager

7. Risk

7. Budget

7. Evaluation



6. Project Members

You are now ready to start a project!

Internal

Is the project planning completed? Good, let's start then! Your goal is to assign members to projects to complete them on budget (time, cost and quality). You will then report to a steering group at a go/nogo meeting and be evaluated on your performance. Mind you, the different steering group may have different budget priorities!

During the projects, your project members will move from **idle** (card vertically positioned) to **busy** (card horizontally positioned). Assignments will give them **achievement cubes** (task cubes moved from project card to project member card). If they fulfil certain achievement criteria, they may be **trained** (card flipped to its senior face with an underlined title). Keep them productive!

Idle **Busy** **Achieving** **Trained**

Start with the project manager to the program manager's left and continue clockwise. The program manager gets 1 extra turn and then passes the program manager card to the right. In your turn, choose 1 of the following activities:

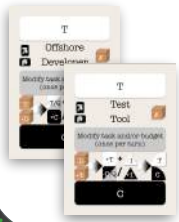
1. Recruit project members (page 3)
2. Train project members (page 4)
3. Assign project members (page 5)
4. Report Status (page 7)

If all of your project members are busy, you must choose Report Status to turn them idle again.

PROJECT PLANNING | PROJECT ACTIVITIES | RECRUIT MEMBERS | TRAIN MEMBERS | ASSIGN MEMBERS | REPORT STATUS | GO/NOGO MEETING | PROJECT CLOSURE

Internal

Do you need more project members? Recruit by choosing any 1 project member not already recruited. New members start with the junior face up and busy (horizontally positioned). Note that scrum teams and devops teams cannot be recruited, only trained (page 4).

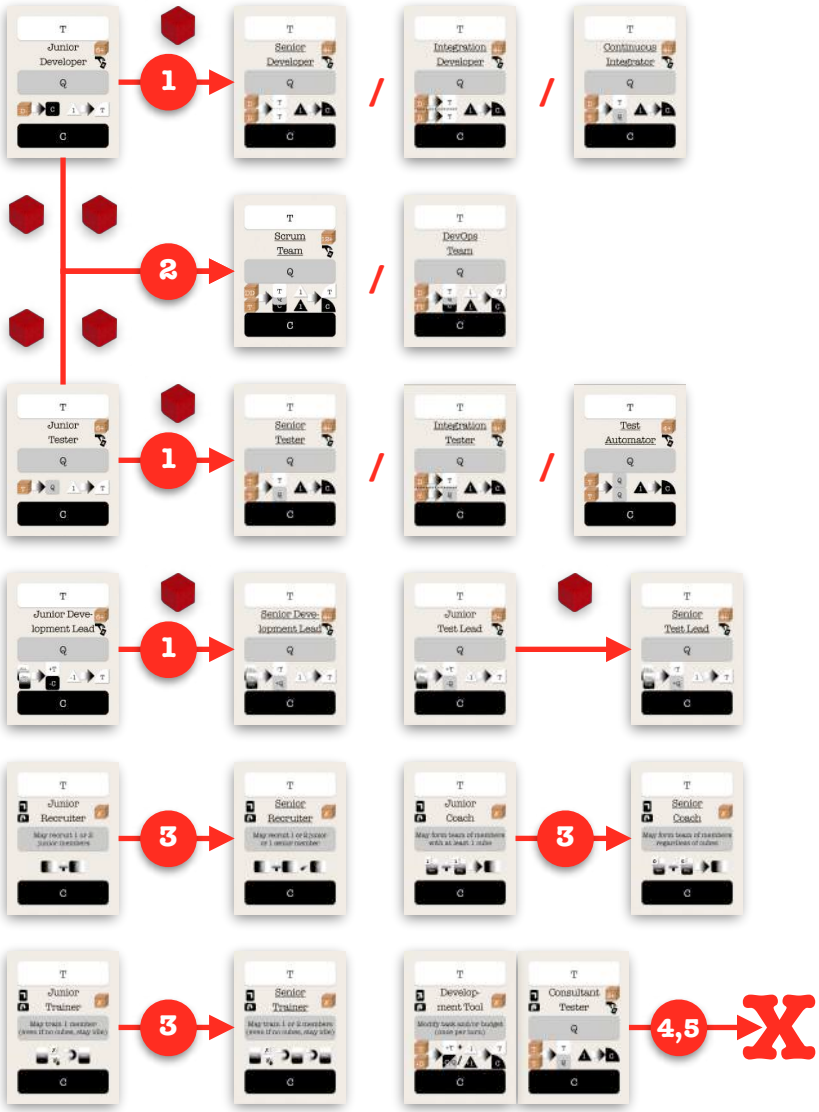


Alternatively, acquire any 1 tool or offshore member not already recruited. They are never busy and may help any of your project members with their assignments by modifying task cubes and time/cost chits taken (page 5).

Internal

Do you have project team members with achievement (cubes placed on their cards)? Then you may train them into a senior member. Seniors have underlined titles.

All project members who receive training turn busy. All the cubes on the card are moved to the new face or card.



1. Train any 1 of your idle junior **developers**, **testers** or **leads** with at least 1 cube by flipping the card to its senior face. Developers and testers may be replaced by a specialist (developers by **integration developer** or **continuous integrator**, testers by **integration tester** or **test automator**).

2. Alternatively, you may coach a **scrum team** or a **devops team** by replacing 1 idle junior or senior developer and 1 idle junior or senior tester with at least 2 cubes each with 1 scrum or devops team card.

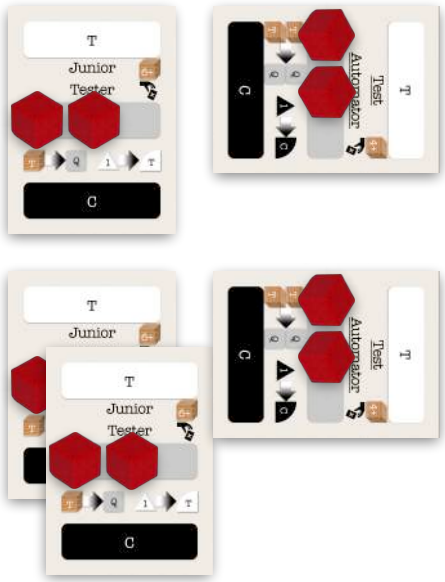
Internal

3. **Project managers**, **recruiters**, **trainers** and **coaches** automatically flip to their senior face the first time they turn busy.
4. **Tools** and **offshore members** never turn busy and have no senior face to flip to.
5. **Trainees** and **consultants** do turn busy but have no senior face to flip to.

Example: A project manager has 1 idle junior developer and 1 idle junior tester with 2 cubes each. The tester may be trained and replaced by a test automator.

Alternatively, the developer and the tester may be coached and replaced by a scrum team.

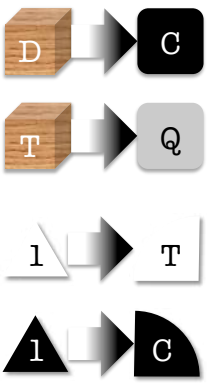
In any case, the new card takes over the cubes from the old card or cards and start busy.



Internal

Do you have an assignment to be done? Assign any 1 of your idle project members to complete the task listed on the member card. Then turn the card busy (horizontally positioned). Different members do different tasks:

Developers, Testers and Teams



Take up to the number of task cubes as listed (D=Development, T=Test) from any 1 project. Place them in the achievement boxes as listed (T=Time, C=Cost, Q=Quality).

Then take the time (white) and cost (black) chits as listed. Place them on the project budget. Place all chits listed, even if you do not take all cubes listed.

Note that tools and offshore members may modify cubes and/or chits once per turn.

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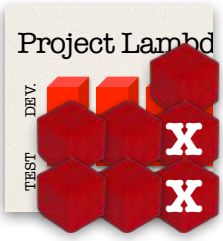
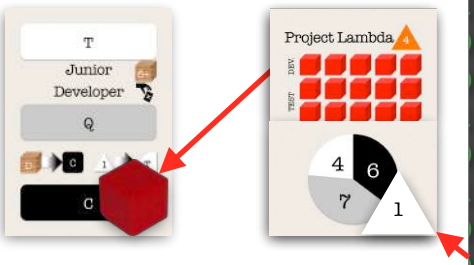
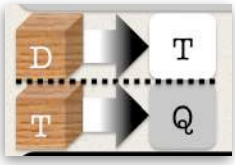


Each project has 3 rows of task cubes in 5 columns each. The first row contains the development cubes and the other two contains the test cubes. Development cubes may be taken from any column while test cubes may only be taken from columns where there are no development cubes left.

Example: A junior developer is assigned to Project Lambda. Her task is cost-effective (1 cube to cost achievement) but time-consuming (1 time chit to project budget).

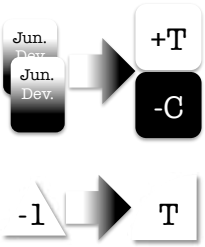




All project members must take their cubes from the same project EXCEPT integration developers and testers, who must take their cubes from two different projects (and choose which of the projects to place the time or cost chit on).

Development Leads and Test Leads

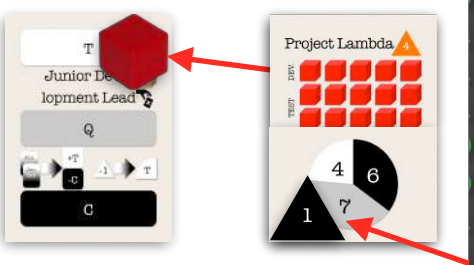
Assign up to 2 of your idle developers/ testers instead of only 1. Take the cubes and chits as normal but replace 1 cube and take 1 less/more chit as listed on the lead card. Place the replaced cube on the lead instead of on the project member.



If no such cubes were taken during the assignment, ignore the replacing but place a cube on the lead instead of on the member anyway. Note that junior leads may only train juniors while senior leads may train juniors and seniors.

Example: A junior development lead leads the junior developer in the above example.

She makes the task time-effective and takes the credit (cube to her Time Reward instead of to the developer) but less cost-effective (cost chit to Project Budget).



Internal

Project Manager

Take 1 budget chit of value 1. A senior project manager may take 1 of each. 1 such chit may be spent in addition to any other action to modify 1 open project. Time/cost removes 1 chit while quality is placed on the project and adds 1 to the quality (see Go/Nogo meeting).

Recruiter

Recruit up to 2 junior project members instead of only 1. A senior recruiter may choose to recruit 1 senior project member instead.

Trainer

Train 1 project member but ignore the cube requirement and do not turn the trained card busy afterwards. A senior trainer may train up to 2 project members.

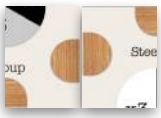
Coach

Form a scrum team or a devops team of project members with at least 1 cube each instead of 2. A senior coach may ignore the cube requirement.

PROJECT PLANNING | PROJECT ACTIVITIES | RECRUIT MEMBERS | TRAIN MEMBERS | ASSIGN MEMBERS | REPORT STATUS | GO/NOGO MEETING | PROJECT CLOSURE

Internal

Do you have any status to report to the steering group? Then discard all your project members who have exceeded the cube limit listed on the card. (They leave the project.) Move the cubes to your project manager. Turn the rest idle.

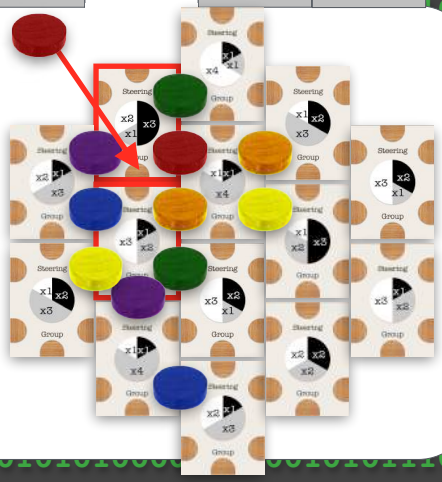


Place 1 steering group seat disc at any 1 empty steering group space (the completed circle between 2 steering group cards). If you run out of discs, use other means. You may not place a steering group seat disc if that would give you more seats than your project team's total number of achievement cubes.

If any of the steering groups is full (all the spaces are occupied), you **may** choose 1 of them together with any 1 project for a go/nogo meeting (page 8). You may only choose steering groups for which you have at least 1 disc and projects for which you have at least 1 cube.

Internal

Example: Red places a seat disc that fills 2 steering groups. She chooses the uppermost x2/x3/x1 steering group and Project Lambda for a go/nogo meeting.



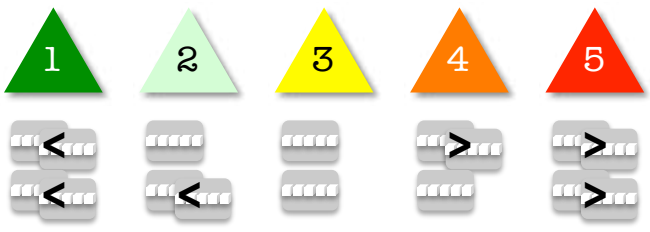
PROJECT PLANNING | PROJECT ACTIVITIES | RECRUIT MEMBERS | TRAIN MEMBERS | ASSIGN MEMBERS | REPORT STATUS | GO/NOGO MEETING | PROJECT CLOSURE

Internal

Are you ready for the go/nogo meeting? Then ask all project managers with seat discs around the steering group to simultaneously show a thumb up for yes and down for no. Each seat disc counts as 1 vote. You must vote yes and you have the casting vote in case of a tie.

- If a majority vote **no**, place another seat disc on the card (not on a space) and end the turn. It counts as a vote at that steering group only.
- If a majority vote **yes**, evaluate the project in 3 steps: project quality, project budgets and project achievements.

1. Follow up the **project quality**. For each of the project's two test rows, draw 1 or 2 bug cards and keep the one with the fewest (<) or most (>) bugs according to the image below. If bug cards have the same amount of bugs, keep the first drawn.

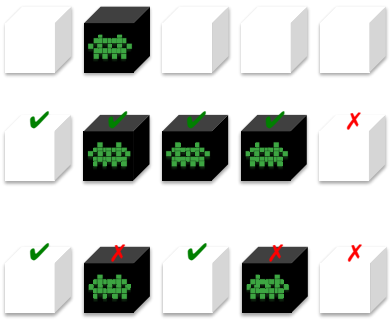


The bug cards tell which test boxes that have bugs. If the test cube is still in that test box (i.e. it is untested), it has a bug. If any development cube is left in a column (i.e. it is undeveloped), both the test boxes are considered to have bugs. Shuffle back the bug cards into the deck afterwards.

Internal

Example: Project Lambda (risk 4) got 2 out of 4 go votes and was approved by Red's casting vote. The project has 1 development cube and 4 test cubes left.

2 bug cards are drawn for the 1st test row. The 2nd card is kept and reveals 3 bugs, of which 0 were not tested. 1 bug card is drawn for the 2nd test row and reveals 2 bugs, of which 2 were not tested.



The undeveloped column counts as 2 additional bugs, even if the bug cards showed no bugs there. The project has 4 bugs.

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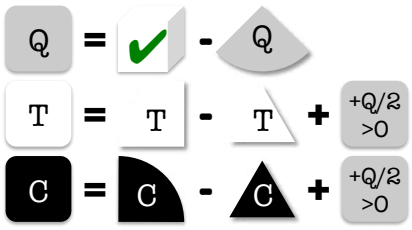
2. Follow up the **project budgets**. Quality, time and cost are compared to the budget according to the image to the right. This determines the project result for the quality, time and cost.



- Quality: Test boxes without bugs - Quality budget
- Time/Cost: Time/Cost budget - Time/Cost chits + Half the positive Quality result (rounded up)

Example: Project Lambda spent 3 time chits towards a budget of 4 (time result +1) and 4 cost chits towards a budget of 6 (cost result+2). However, it only delivered 6 bug-free boxes towards a budget of 7 (quality result -1).

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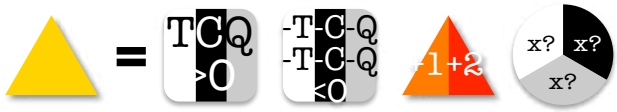
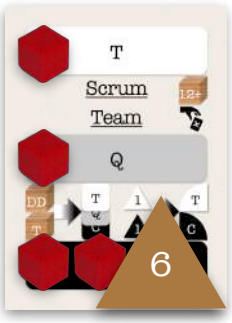
3. Finally, for each positive (not 0 or less) project result, calculate the **project achievement** in three steps:

1. **Subtract** double any other negative project results
2. **Add** +1 or +2 for project risk 4 or 5
3. **Multiply** the total with the steering group priority

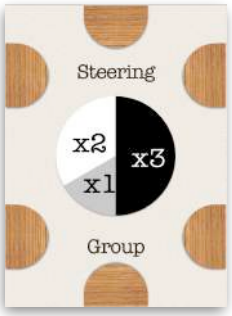


Internal

If the result is more than 0, take the corresponding number of evaluation points (EP) from the reserve. Leave the achievement cubes on the project member.



Example: A scrum team earned 1 time cube, 1 quality cube and 2 cost cubes from Project Lambda (risk 4). The quality result is negative so the quality cube is worth nothing. The low quality decreases the other results by 2 but the high risk increases them by 1. Thus, the time cube is worth 1-2+1=0 EP and the cost cubes are worth 2-2+1=1 EP each. The steering group gives cost a priority of 3. Thus, the scrum team earns 3x2=6 EP for its 2 cost cubes.



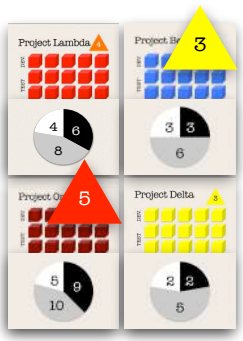
Internal

Is the project evaluation completed? Then close the project by discarding any remaining task cubes and time and cost chits and flipping the project card face down. Also flip the steering group card face down but leave the discs on and around it.

- If the quality was below budget, increase the risk by 1 for all orthogonally adjacent projects not yet evaluated.

- If the quality was above budget, decrease the risk by 1 for all orthogonally adjacent projects not yet evaluated.

Cover the printed risk with a risk chit showing the new risk. A risk cannot go lower than 1 or higher than 5.



Example: The failure to reach the quality budget of Project Beta increases the risk of the orthogonally adjacent Projects Beta and Omega. The diagonally adjacent Project Delta is not affected.

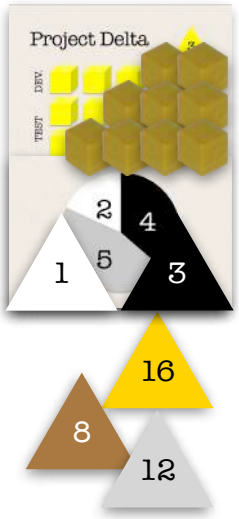
Internal

Have you closed 1 project more than there are project managers? Alternatively, have all the steering group spaces been filled? Then continue until the program manager has completed the 1st of his or her 2 turns and then end the program. (You may place a steering group disc on a seat already occupied by one other disc if there is no other option.)

Evaluate any remaining projects from which achievement cubes have been taken but ignore the steering group multiplier. Then count your total evaluation points. Add 1 evaluation point per steering group disc. In case of a tie, count your total cubes.

Do you have the most? Congratulations, you have won the project manager of the year award!

Example: Red player is to the right of the program manager and completes the 5th project in a 4 player game. The program manager gets 1 more turn, after which the game ends. Red has earned 36 EP and has 2 quality achievement cubes on a project that never closed (risk 3). The project is evaluated and has 6 bug-free boxes. Since the quality budget is 5, she earns another 1+1=2 EP per achievement cube and scores 40 EP in total.



Internal

Do you want additional challenges? Then set up the program goal cards with the corresponding evaluation chits on them. To complete a goal, you must have achievement cubes from all the highlighted projects and the number of them must equal or exceed the number on the card.

When you report status, take any evaluation chits for completed goals (if available).

Example: Red player has 6 cubes from each of the 3 top projects. She reports status and takes the 3 EP chit from the goal card.

GLOSSARY

Term	Project concept	Game concept
Budget	Estimated time and cost for project	Target levels for time, cost and quality
Bug	Flaw in component causing failure	Negative factor at project scoring
Development	Design and build of software component	Task accomplished by assigned member
Go/Nogo	Decision whether project fulfils goal	Vote whether to score a project or not
Project	Undertaking to achieve particular goal	Card with cubes representing tasks
Project Management Triangle	Projects are constrained by time, cost and quality	Tasks add one constrainment to project and award another to member
Quality	Degree of requirement fulfilment	Quality budget minus bugs
Risk	Probability of failure (linked to complexity and criticality)	Probability of bugs
Steering Group	Experts overseeing project and taking strategic decisions	Card with priority levels for time, cost and quality
Status	Report of current project situation	Reset phase giving seat at steering group
Test	Assessment of quality of software component	Task accomplished by assigned member

Credits

Game design: Nicholas Hjelmberg
Production: The Game Crafter
Game testers: Juan Garcia, Hans Larsson, Eva Nordström, Lotta Östergren, colleagues at SQS Sweden
Special thanks: My wife Su-San Oh for her patience, my SQS colleague Hans Larsson for inspiration in the test area

Game Components

- 90 large project and project member cards
- 64 small budget and bug cards
- 135 development and test cubes; 15 blue, 15 red, 15 yellow, 15 green, 15 brown, 15 orange, 15 pink, 15 purple, 15 tan
- 36 steering group discs; 6 black, 6 blue, 6 green, 6 red, 6 white, 6 yellow
- 135 triangular chits; 48 budget, 15 risk, 72 evaluation points