**Rubik’s Cube website contents:**

1. Short presentation of the project and purpose
2. Full operation video + pictures
3. [System Description](http://smlab.cs.tau.ac.il/projects/15/syntech/pcar/#description): [Requirements](http://smlab.cs.tau.ac.il/projects/15/syntech/pcar/#req) & [Assumptions](http://smlab.cs.tau.ac.il/projects/15/syntech/pcar/#asm)
4. Our work environment (Eclipse with Java, open source libraries?, algorithm code?, LEGO MINDSTORMS NXT ® and LeJOS NXJ -> refers to <http://smlab.cs.tau.ac.il/projects/13/legocmp/> )
5. [The NXT Robot](http://smlab.cs.tau.ac.il/projects/15/syntech/colorsort/#robot)
6. The general project structure - main modules and relations between them
7. The program:
   1. Explain the program (main.java) flow and attach the code
8. The Robot class:
   1. Robot actions (including some code examples and video samples)
   2. Robot color detection (including issues that Nerya delt with etc. + code examples + video of the color scanning phase)
9. The two-phase cube solving algorithm:
   1. Choosing the algorithm: present the considerations that led to the two-phase algorithm (Memory requirements, complexity, runtime, ease of testing and debugging etc.)
   2. Present the Herbert Kociemba two-phase algorithm + links
   3. Our modifications to the algorithm
   4. Connecting the algorithm to the project (main calls the algorithm’s function that calculates the 20 steps and returns the actions to perform on the cube…..)
   5. Some code examples + maybe a test example
10. The Cube class (including some code examples):
    1. Our Cube Representation
    2. Monitoring the orientation
    3. Calling robot actions on faces according to the algorithm’s steps
    4. Some more stuff?
11. UNIT TESTING
12. General Remarks

**The Rubik's Cube Solver Robot**

Required resources for the Website:

1. Images of the Robot (and cube) from different directions
2. Video: Full Cube Solving Demo
3. Video: Full color scanning phase video
4. Video: Robot Testing: Flips and Rotations, other actions?
5. Video: Robot Unit Tests
6. PC Screen video: Running the Robot in NXT mode with the special console and menu
7. PC Screen video: Running the Robot in PC mode with the eclipse printouts to screen
8. PC Screen video: Running the algorithm and printing results to screen
9. PC Screen video and images of Unit Tests running in eclipse with success
10. Interesting Code examples & explanations (text + images):

(For inspiration visit <http://smlab.cs.tau.ac.il/projects/15/syntech/colorsort/> )

* 1. From the algorithm:
     1. show code related to different paragraphs explained in the word summary
  2. From the Robot class:
     1. Code for rotating, flipping etc
     2. Code for scanning colors
     3. Code for deciding the right colors when the scanner is fucked up
  3. From the Cube:
     1. Cube Representation
     2. Orientations Matrix and Actions Array