НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ УКРАЇНИ

«КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ»

ФАКУЛЬТЕТ ІНФОРМАТИКИ І ОБЧИСЛЮВАЛЬНОЇ ТЕХНІКИ

КАФЕДРА ОБЧИСЛЮВАЛЬНОЇ ТЕХНІКИ

**Лабораторна робота №3**

*з дисципліни* ***«****Архітектура комп’ютерів 2****»***

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**Репозиторій:** <https://github.com/Born2drum/AK2_Lab3>

**Лістинг програми:**

**main.cpp**

|  |
| --- |
| #include <stdio.h> |
| #include <stdlib.h> |
| #include <getopt.h> |
|  |
|  |
| int main (int argc, char \*argv[]){ |
|  |
| const char\* short\_options = "V:L:hv"; |
|  |
| const struct option long\_options[] = { |
| {"Value", required\_argument, NULL,'V'}, |
| {"List", required\_argument, NULL,'L'}, |
| {"help", no\_argument, NULL,'h'}, |
| {"version", no\_argument, NULL,'v'}, |
| {NULL, 0, NULL, 0} |
| }; |
|  |
| int parse, option\_index = -1; |
|  |
| bool counter[4] = {false, false, false, false}; |
|  |
| while ((parse=getopt\_long(argc, argv, |
| short\_options, |
| long\_options, |
| &option\_index))!=-1){ |
| switch(parse){ |
| case 'V': { |
| if (!counter[0]){ |
|  |
| printf("Value = %s\n",optarg); |
| counter[0] = true; |
| } |
| break; |
| } |
| case 'L': { |
| if (!counter[1]){ |
|  |
| printf("List = %s\n",optarg); |
| counter[1] = true; |
| } |
| break; |
| } |
| case 'h': { |
| if (!counter[2]){ |
|  |
| printf("Help.\n"); |
| counter[2] = true; |
| } |
| break; |
| } |
| case 'v': { |
| if (!counter[3]){ |
|  |
| printf("Program version is 1.0.\n"); |
| counter[3] = true; |
| } |
| break; |
| } |
| case '?': default: { |
| printf("Unknown option.\n"); |
| break; |
| } |
| } |
| option\_index = -1; |
| } |
| return 0; |
| } |

**Makefile**

|  |
| --- |
| # CMAKE generated file: DO NOT EDIT! |
| # Generated by "Unix Makefiles" Generator, CMake Version 3.16 |
|  |
| # Default target executed when no arguments are given to make. |
| default\_target: all |
|  |
| .PHONY : default\_target |
|  |
| # Allow only one "make -f Makefile2" at a time, but pass parallelism. |
| .NOTPARALLEL: |
|  |
|  |
| #============================================================================= |
| # Special targets provided by cmake. |
|  |
| # Disable implicit rules so canonical targets will work. |
| .SUFFIXES: |
|  |
|  |
| # Remove some rules from gmake that .SUFFIXES does not remove. |
| SUFFIXES = |
|  |
| .SUFFIXES: .hpux\_make\_needs\_suffix\_list |
|  |
|  |
| # Suppress display of executed commands. |
| $(VERBOSE).SILENT: |
|  |
|  |
| # A target that is always out of date. |
| cmake\_force: |
|  |
| .PHONY : cmake\_force |
|  |
| #============================================================================= |
| # Set environment variables for the build. |
|  |
| # The shell in which to execute make rules. |
| SHELL = /bin/sh |
|  |
| # The CMake executable. |
| CMAKE\_COMMAND = /usr/bin/cmake |
|  |
| # The command to remove a file. |
| RM = /usr/bin/cmake -E remove -f |
|  |
| # Escaping for special characters. |
| EQUALS = = |
|  |
| # The top-level source directory on which CMake was run. |
| CMAKE\_SOURCE\_DIR = /home/illya/AK\_Labs/Lab3\_v18 |
|  |
| # The top-level build directory on which CMake was run. |
| CMAKE\_BINARY\_DIR = /home/illya/AK\_Labs/Lab3\_v18 |
|  |
| #============================================================================= |
| # Targets provided globally by CMake. |
|  |
| # Special rule for the target rebuild\_cache |
| rebuild\_cache: |
| @$(CMAKE\_COMMAND) -E cmake\_echo\_color --switch=$(COLOR) --cyan "Running CMake to regenerate build system..." |
| /usr/bin/cmake -S$(CMAKE\_SOURCE\_DIR) -B$(CMAKE\_BINARY\_DIR) |
| .PHONY : rebuild\_cache |
|  |
| # Special rule for the target rebuild\_cache |
| rebuild\_cache/fast: rebuild\_cache |
|  |
| .PHONY : rebuild\_cache/fast |
|  |
| # Special rule for the target edit\_cache |
| edit\_cache: |
| @$(CMAKE\_COMMAND) -E cmake\_echo\_color --switch=$(COLOR) --cyan "No interactive CMake dialog available..." |
| /usr/bin/cmake -E echo No\ interactive\ CMake\ dialog\ available. |
| .PHONY : edit\_cache |
|  |
| # Special rule for the target edit\_cache |
| edit\_cache/fast: edit\_cache |
|  |
| .PHONY : edit\_cache/fast |
|  |
| # The main all target |
| all: cmake\_check\_build\_system |
| $(CMAKE\_COMMAND) -E cmake\_progress\_start /home/illya/AK\_Labs/Lab3\_v18/CMakeFiles /home/illya/AK\_Labs/Lab3\_v18/CMakeFiles/progress.marks |
| $(MAKE) -f CMakeFiles/Makefile2 all |
| $(CMAKE\_COMMAND) -E cmake\_progress\_start /home/illya/AK\_Labs/Lab3\_v18/CMakeFiles 0 |
| .PHONY : all |
|  |
| # The main clean target |
| clean: |
| $(MAKE) -f CMakeFiles/Makefile2 clean |
| .PHONY : clean |
|  |
| # The main clean target |
| clean/fast: clean |
|  |
| .PHONY : clean/fast |
|  |
| # Prepare targets for installation. |
| preinstall: all |
| $(MAKE) -f CMakeFiles/Makefile2 preinstall |
| .PHONY : preinstall |
|  |
| # Prepare targets for installation. |
| preinstall/fast: |
| $(MAKE) -f CMakeFiles/Makefile2 preinstall |
| .PHONY : preinstall/fast |
|  |
| # clear depends |
| depend: |
| $(CMAKE\_COMMAND) -S$(CMAKE\_SOURCE\_DIR) -B$(CMAKE\_BINARY\_DIR) --check-build-system CMakeFiles/Makefile.cmake 1 |
| .PHONY : depend |
|  |
| #============================================================================= |
| # Target rules for targets named lab3 |
|  |
| # Build rule for target. |
| lab3: cmake\_check\_build\_system |
| $(MAKE) -f CMakeFiles/Makefile2 lab3 |
| .PHONY : lab3 |
|  |
| # fast build rule for target. |
| lab3/fast: |
| $(MAKE) -f CMakeFiles/lab3.dir/build.make CMakeFiles/lab3.dir/build |
| .PHONY : lab3/fast |
|  |
| main.o: main.cpp.o |
|  |
| .PHONY : main.o |
|  |
| # target to build an object file |
| main.cpp.o: |
| $(MAKE) -f CMakeFiles/lab3.dir/build.make CMakeFiles/lab3.dir/main.cpp.o |
| .PHONY : main.cpp.o |
|  |
| main.i: main.cpp.i |
|  |
| .PHONY : main.i |
|  |
| # target to preprocess a source file |
| main.cpp.i: |
| $(MAKE) -f CMakeFiles/lab3.dir/build.make CMakeFiles/lab3.dir/main.cpp.i |
| .PHONY : main.cpp.i |
|  |
| main.s: main.cpp.s |
|  |
| .PHONY : main.s |
|  |
| # target to generate assembly for a file |
| main.cpp.s: |
| $(MAKE) -f CMakeFiles/lab3.dir/build.make CMakeFiles/lab3.dir/main.cpp.s |
| .PHONY : main.cpp.s |
|  |
| # Help Target |
| help: |
| @echo "The following are some of the valid targets for this Makefile:" |
| @echo "... all (the default if no target is provided)" |
| @echo "... clean" |
| @echo "... depend" |
| @echo "... rebuild\_cache" |
| @echo "... edit\_cache" |
| @echo "... lab3" |
| @echo "... main.o" |
| @echo "... main.i" |
| @echo "... main.s" |
| .PHONY : help |
|  |
|  |
|  |
| #============================================================================= |
| # Special targets to cleanup operation of make. |
|  |
| # Special rule to run CMake to check the build system integrity. |
| # No rule that depends on this can have commands that come from listfiles |
| # because they might be regenerated. |
| cmake\_check\_build\_system: |
| $(CMAKE\_COMMAND) -S$(CMAKE\_SOURCE\_DIR) -B$(CMAKE\_BINARY\_DIR) --check-build-system CMakeFiles/Makefile.cmake 0 |
| .PHONY : cmake\_check\_build\_system |

**У README.md описано які ключі та їх параметри підтримує програма**

