

Results table and execution log - Chantal van Duin s1004516 & Nayeong Kim s1006313

Domain Movie :

Table of results :

Movie - Task 1

	Blind	Hadd	Hff	Hmax
1	0,020	0,012	0,020	0,23
2	0,020	0,014	0,016	0,20
3	0,017	0,013	0,018	0,20
4	0,018	0,013	0,015	0,21
5	0,018	0,013	0,018	0,21
6	0,018	0,018	0,021	0,23
7	0,018	0,013	0,020	0,24
8	0,029	0,013	0,014	0,28
9	0,018	0,017	0,015	0,27
10	0,018	0,019	0,019	0,26

Movie - Task 15

	Blind	Hadd	Hff	Hmax
1	0,057	0,12	0,13	1,7
2	0,059	0,12	0,10	1,8
3	0,059	0,19	0,10	1,8
4	0,060	0,096	0,11	1,8
5	0,072	0,097	0,15	1,8
6	0,057	0,13	0,15	1,9
7	0,068	0,13	0,11	2,1
8	0,057	0,11	0,10	1,8
9	0,066	0,10	0,15	1,7
10	0,091	0,098	0,11	1,7

Movie - Task 30

	Blind	Hadd	Hff	Hmax
1	0,10	0,27	0,32	4,9
2	0,11	0,29	0,28	5,1
3	0,14	0,31	0,33	5,1
4	0,16	0,31	0,30	5,4
5	0,10	0,32	0,35	5,0
6	0,14	0,36	0,28	5,0
7	0,11	0,29	0,38	4,8
8	0,11	0,28	0,41	5,0
9	0,14	0,28	0,30	5,4
10	0,13	0,37	0,33	5,0

Execution Log :

Task 1 :

- Blind heuristic :
 - entered code line = `src/pyperplan.py -H blind -s astar benchmarks/movie/domain.pddl benchmarks/movie/task01.pddl`
 - output first trail =

```
2018-10-12 16:53:09,849 INFO    using search: astar_search
2018-10-12 16:53:09,849 INFO    using heuristic: BlindHeuristic
2018-10-12 16:53:09,849 INFO    Parsing Domain /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 16:53:09,854 INFO    Parsing Problem /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/task01.pddl
2018-10-12 16:53:09,857 INFO    14 Predicates parsed
2018-10-12 16:53:09,857 INFO    8 Actions parsed
2018-10-12 16:53:09,858 INFO    25 Objects parsed
2018-10-12 16:53:09,858 INFO    0 Constants parsed
2018-10-12 16:53:09,858 INFO    Grounding start: strips-movie-x-1
2018-10-12 16:53:09,875 INFO    Relevance analysis removed 0 facts
2018-10-12 16:53:09,875 INFO    Grounding end: strips-movie-x-1
2018-10-12 16:53:09,875 INFO    7 Variables created
2018-10-12 16:53:09,875 INFO    27 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 16:53:09,876 INFO    Search start: strips-movie-x-1
2018-10-12 16:53:09,876 INFO    Initial h value: 1.000000
2018-10-12 16:53:09,896 INFO    Goal reached. Start extraction of solution.
2018-10-12 16:53:09,896 INFO    122 Nodes expanded
2018-10-12 16:53:09,896 INFO    Search end: strips-movie-x-1
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 16:53:09,896 INFO    Wall-clock search time: 0.02
2018-10-12 16:53:09,896 INFO    Plan length: 7
2018-10-12 16:53:09,903 INFO    validate could not be fo
```
- Hadd :
 - entered code line = `src/pyperplan.py -H hadd -s astar benchmarks/movie/domain.pddl benchmarks/movie/task01.pddl`
 - output first trail =

```
2018-10-12 16:55:47,869 INFO    using search: astar_search
2018-10-12 16:55:47,869 INFO    using heuristic: hAddHeuristic
2018-10-12 16:55:47,869 INFO    Parsing Domain /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 16:55:47,875 INFO    Parsing Problem /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/task01.pddl
2018-10-12 16:55:47,879 INFO    14 Predicates parsed
2018-10-12 16:55:47,880 INFO    8 Actions parsed
2018-10-12 16:55:47,880 INFO    25 Objects parsed
2018-10-12 16:55:47,880 INFO    0 Constants parsed
2018-10-12 16:55:47,880 INFO    Grounding start: strips-movie-x-1
2018-10-12 16:55:47,893 INFO    Relevance analysis removed 0 facts
2018-10-12 16:55:47,893 INFO    Grounding end: strips-movie-x-1
```

```

2018-10-12 16:55:47,893 INFO    7 Variables created
2018-10-12 16:55:47,893 INFO    27 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 16:55:47,894 INFO    Search start: strips-movie-x-1
2018-10-12 16:55:47,894 INFO    Initial h value: 7.000000
2018-10-12 16:55:47,907 INFO    Goal reached. Start extraction of solution.
2018-10-12 16:55:47,907 INFO    8 Nodes expanded
2018-10-12 16:55:47,907 INFO    Search end: strips-movie-x-1
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 16:55:47,907 INFO    Wall-clock search time: 0.013
2018-10-12 16:55:47,908 INFO    Plan length: 7
2018-10-12 16:55:47,913 INFO    validate could not be found on the PATH so the
plan can not be validated.

```

- Hff :

```

- entered code line = src/pyperplan.py -H hff -s astar benchmarks/movie/domain.pddl
benchmarks/movie/task01.pddl
- output first trail = 2018-10-12 16:57:29,899 INFO    using search: astar_search
2018-10-12 16:57:29,899 INFO    using heuristic: hFFHeuristic
2018-10-12 16:57:29,899 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 16:57:29,904 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task01.pddl
2018-10-12 16:57:29,908 INFO    14 Predicates parsed
2018-10-12 16:57:29,908 INFO    8 Actions parsed
2018-10-12 16:57:29,908 INFO    25 Objects parsed
2018-10-12 16:57:29,909 INFO    0 Constants parsed
2018-10-12 16:57:29,909 INFO    Grounding start: strips-movie-x-1
2018-10-12 16:57:29,922 INFO    Relevance analysis removed 0 facts
2018-10-12 16:57:29,922 INFO    Grounding end: strips-movie-x-1
2018-10-12 16:57:29,922 INFO    7 Variables created
2018-10-12 16:57:29,922 INFO    27 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 16:57:29,923 INFO    Search start: strips-movie-x-1
2018-10-12 16:57:29,923 INFO    Initial h value: 7.000000
2018-10-12 16:57:29,943 INFO    Goal reached. Start extraction of solution.
2018-10-12 16:57:29,943 INFO    8 Nodes expanded
2018-10-12 16:57:29,943 INFO    Search end: strips-movie-x-1
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 16:57:29,944 INFO    Wall-clock search time: 0.02
2018-10-12 16:57:29,944 INFO    Plan length: 7
2018-10-12 16:57:29,950 INFO    validate could not be found on the PATH so the
plan can not be validated.

```

- Hmax :

- entered code line = `src/pyperplan.py -H hmax -s astar benchmarks/movie/domain.pddl benchmarks/movie/task01.pddl`
- output first trail =
 - 2018-10-12 16:59:25,956 INFO using search: astar_search
 - 2018-10-12 16:59:25,956 INFO using heuristic: hMaxHeuristic
 - 2018-10-12 16:59:25,957 INFO Parsing Domain /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
 - 2018-10-12 16:59:25,959 INFO Parsing Problem /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/task01.pddl
 - 2018-10-12 16:59:25,961 INFO 14 Predicates parsed
 - 2018-10-12 16:59:25,961 INFO 8 Actions parsed
 - 2018-10-12 16:59:25,961 INFO 25 Objects parsed
 - 2018-10-12 16:59:25,961 INFO 0 Constants parsed
 - 2018-10-12 16:59:25,961 INFO Grounding start: strips-movie-x-1
 - 2018-10-12 16:59:25,974 INFO Relevance analysis removed 0 facts
 - 2018-10-12 16:59:25,974 INFO Grounding end: strips-movie-x-1
 - 2018-10-12 16:59:25,974 INFO 7 Variables created
 - 2018-10-12 16:59:25,974 INFO 27 Operators created
 - src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead
 - search_start_time = time.clock()
 - 2018-10-12 16:59:25,975 INFO Search start: strips-movie-x-1
 - 2018-10-12 16:59:25,975 INFO Initial h value: 1.000000
 - 2018-10-12 16:59:26,215 INFO Goal reached. Start extraction of solution.
 - 2018-10-12 16:59:26,215 INFO 122 Nodes expanded
 - 2018-10-12 16:59:26,215 INFO Search end: strips-movie-x-1
 - src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead
 - logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
 - 2018-10-12 16:59:26,215 INFO Wall-clock search time: 0.23
 - 2018-10-12 16:59:26,216 INFO Plan length: 7
 - 2018-10-12 16:59:26,221 INFO validate could not be found on the PATH so the plan can not be validated.

Task 15 :

- Blind heuristic :
 - entered code line = `src/pyperplan.py -H blind -s astar benchmarks/movie/domain.pddl benchmarks/movie/task15.pddl`
 - output first trail =
 - 2018-10-12 17:03:19,251 INFO using search: astar_search
 - 2018-10-12 17:03:19,251 INFO using heuristic: BlindHeuristic
 - 2018-10-12 17:03:19,251 INFO Parsing Domain /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
 - 2018-10-12 17:03:19,254 INFO Parsing Problem /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/movie/task15.pddl
 - 2018-10-12 17:03:19,260 INFO 14 Predicates parsed
 - 2018-10-12 17:03:19,260 INFO 8 Actions parsed
 - 2018-10-12 17:03:19,260 INFO 95 Objects parsed
 - 2018-10-12 17:03:19,261 INFO 0 Constants parsed
 - 2018-10-12 17:03:19,261 INFO Grounding start: strips-movie-x-15
 - 2018-10-12 17:03:19,325 INFO Relevance analysis removed 0 facts
 - 2018-10-12 17:03:19,325 INFO Grounding end: strips-movie-x-15
 - 2018-10-12 17:03:19,325 INFO 7 Variables created

```

2018-10-12 17:03:19,325 INFO    97 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 17:03:19,325 INFO    Search start: strips-movie-x-15
2018-10-12 17:03:19,326 INFO    Initial h value: 1.000000
2018-10-12 17:03:19,382 INFO    Goal reached. Start extraction of solution.
2018-10-12 17:03:19,382 INFO    122 Nodes expanded
2018-10-12 17:03:19,382 INFO    Search end: strips-movie-x-15
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info("Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:03:19,383 INFO    Wall-clock search time: 0.057
2018-10-12 17:03:19,383 INFO    Plan length: 7
2018-10-12 17:03:19,389 INFO    validate could not be found on the PATH so the
plan can not be validated.

```

- Hadd :

- entered code line = `src/pyperplan.py -H hadd -s astar benchmarks/movie/domain.pddl benchmarks/movie/task15.pddl`

- output first trail =

```

2018-10-12 17:05:14,907 INFO    using search: astar_search
2018-10-12 17:05:14,907 INFO    using heuristic: hAddHeuristic
2018-10-12 17:05:14,907 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 17:05:14,911 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task15.pddl
2018-10-12 17:05:14,914 INFO    14 Predicates parsed
2018-10-12 17:05:14,914 INFO    8 Actions parsed
2018-10-12 17:05:14,914 INFO    95 Objects parsed
2018-10-12 17:05:14,914 INFO    0 Constants parsed
2018-10-12 17:05:14,915 INFO    Grounding start: strips-movie-x-15
2018-10-12 17:05:14,976 INFO    Relevance analysis removed 0 facts
2018-10-12 17:05:14,976 INFO    Grounding end: strips-movie-x-15
2018-10-12 17:05:14,977 INFO    7 Variables created
2018-10-12 17:05:14,977 INFO    97 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 17:05:14,977 INFO    Search start: strips-movie-x-15
2018-10-12 17:05:14,978 INFO    Initial h value: 7.000000
2018-10-12 17:05:15,100 INFO    Goal reached. Start extraction of solution.
2018-10-12 17:05:15,100 INFO    8 Nodes expanded
2018-10-12 17:05:15,100 INFO    Search end: strips-movie-x-15
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info("Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:05:15,100 INFO    Wall-clock search time: 0.12
2018-10-12 17:05:15,100 INFO    Plan length: 7
2018-10-12 17:05:15,109 INFO    validate could not be found on the PATH so the
plan can not be validated.

```

- Hff :

- entered code line = `src/pyperplan.py -H hff -s astar benchmarks/movie/domain.pddl benchmarks/movie/task15.pddl`
- output first trail =


```

2018-10-12 17:10:21,142 INFO    using search: astar_search
2018-10-12 17:10:21,142 INFO    using heuristic: hFFHeuristic
2018-10-12 17:10:21,142 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 17:10:21,145 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task15.pddl
2018-10-12 17:10:21,148 INFO    14 Predicates parsed
2018-10-12 17:10:21,148 INFO    8 Actions parsed
2018-10-12 17:10:21,148 INFO    95 Objects parsed
2018-10-12 17:10:21,148 INFO    0 Constants parsed
2018-10-12 17:10:21,148 INFO    Grounding start: strips-movie-x-15
2018-10-12 17:10:21,211 INFO    Relevance analysis removed 0 facts
2018-10-12 17:10:21,211 INFO    Grounding end: strips-movie-x-15
2018-10-12 17:10:21,211 INFO    7 Variables created
2018-10-12 17:10:21,211 INFO    97 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
  search_start_time = time.clock()
2018-10-12 17:10:21,212 INFO    Search start: strips-movie-x-15
2018-10-12 17:10:21,213 INFO    Initial h value: 7.000000
2018-10-12 17:10:21,340 INFO    Goal reached. Start extraction of solution.
2018-10-12 17:10:21,340 INFO    8 Nodes expanded
2018-10-12 17:10:21,340 INFO    Search end: strips-movie-x-15
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
  logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:10:21,340 INFO    Wall-clock search time: 0.13
2018-10-12 17:10:21,341 INFO    Plan length: 7
2018-10-12 17:10:21,345 INFO    validate could not be found on the PATH so the
plan can not be validated.

```

- Hmax:

- entered code line = `src/pyperplan.py -H hmax -s astar benchmarks/movie/domain.pddl benchmarks/movie/task15.pddl`
- output first trail =


```

2018-10-12 17:11:54,950 INFO    using search: astar_search
2018-10-12 17:11:54,950 INFO    using heuristic: hMaxHeuristic
2018-10-12 17:11:54,950 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 17:11:54,953 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task15.pddl
2018-10-12 17:11:54,957 INFO    14 Predicates parsed
2018-10-12 17:11:54,957 INFO    8 Actions parsed
2018-10-12 17:11:54,957 INFO    95 Objects parsed
2018-10-12 17:11:54,957 INFO    0 Constants parsed
2018-10-12 17:11:54,957 INFO    Grounding start: strips-movie-x-15
2018-10-12 17:11:55,020 INFO    Relevance analysis removed 0 facts
2018-10-12 17:11:55,020 INFO    Grounding end: strips-movie-x-15
2018-10-12 17:11:55,020 INFO    7 Variables created
2018-10-12 17:11:55,020 INFO    97 Operators created

```



```

src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
  search_start_time = time.clock()
2018-10-12 17:11:55,021 INFO      Search start: strips-movie-x-15
2018-10-12 17:11:55,021 INFO      Initial h value: 1.000000
2018-10-12 17:11:56,739 INFO      Goal reached. Start extraction of solution.
2018-10-12 17:11:56,739 INFO      122 Nodes expanded
2018-10-12 17:11:56,740 INFO      Search end: strips-movie-x-15
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
  logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:11:56,740 INFO      Wall-clock search time: 1.7
2018-10-12 17:11:56,740 INFO      Plan length: 7
2018-10-12 17:11:56,746 INFO      validate could not be found on the PATH so the
plan can not be validated.

```

Task 30 :

- Blind heuristic :
 - entered code line = `src/pyperplan.py -H blind -s astar benchmarks/movie/domain.pddl benchmarks/movie/task30.pddl`
 - output first trail =


```

2018-10-12 17:15:06,092 INFO      using search: astar_search
2018-10-12 17:15:06,093 INFO      using heuristic: BlindHeuristic
2018-10-12 17:15:06,093 INFO      Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 17:15:06,097 INFO      Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task30.pddl
2018-10-12 17:15:06,105 INFO      14 Predicates parsed
2018-10-12 17:15:06,106 INFO      8 Actions parsed
2018-10-12 17:15:06,106 INFO      170 Objects parsed
2018-10-12 17:15:06,106 INFO      0 Constants parsed
2018-10-12 17:15:06,106 INFO      Grounding start: strips-movie-x-30
2018-10-12 17:15:06,252 INFO      Relevance analysis removed 0 facts
2018-10-12 17:15:06,252 INFO      Grounding end: strips-movie-x-30
2018-10-12 17:15:06,252 INFO      7 Variables created
2018-10-12 17:15:06,252 INFO      172 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
  search_start_time = time.clock()
2018-10-12 17:15:06,253 INFO      Search start: strips-movie-x-30
2018-10-12 17:15:06,253 INFO      Initial h value: 1.000000
2018-10-12 17:15:06,355 INFO      Goal reached. Start extraction of solution.
2018-10-12 17:15:06,355 INFO      122 Nodes expanded
2018-10-12 17:15:06,355 INFO      Search end: strips-movie-x-30
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
  logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:15:06,355 INFO      Wall-clock search time: 0.1
2018-10-12 17:15:06,355 INFO      Plan length: 7
2018-10-12 17:15:06,359 INFO      validate could not be found on the PATH so the
plan can not be validated.
          
```

- Hadd :

- entered code line = `src/pyperplan.py -H hadd -s astar benchmarks/movie/domain.pddl benchmarks/movie/task30.pddl`

- output first trail =

```
2018-10-12 17:17:48,767 INFO    using search: astar_search
2018-10-12 17:17:48,767 INFO    using heuristic: hAddHeuristic
2018-10-12 17:17:48,767 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 17:17:48,774 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task30.pddl
2018-10-12 17:17:48,783 INFO    14 Predicates parsed
2018-10-12 17:17:48,783 INFO    8 Actions parsed
2018-10-12 17:17:48,783 INFO    170 Objects parsed
2018-10-12 17:17:48,784 INFO    0 Constants parsed
2018-10-12 17:17:48,784 INFO    Grounding start: strips-movie-x-30
2018-10-12 17:17:48,920 INFO    Relevance analysis removed 0 facts
2018-10-12 17:17:48,921 INFO    Grounding end: strips-movie-x-30
2018-10-12 17:17:48,921 INFO    7 Variables created
2018-10-12 17:17:48,921 INFO    172 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 17:17:48,922 INFO    Search start: strips-movie-x-30
2018-10-12 17:17:48,922 INFO    Initial h value: 7.000000
2018-10-12 17:17:49,189 INFO    Goal reached. Start extraction of solution.
2018-10-12 17:17:49,189 INFO    8 Nodes expanded
2018-10-12 17:17:49,189 INFO    Search end: strips-movie-x-30
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:17:49,189 INFO    Wall-clock search time: 0.27
2018-10-12 17:17:49,189 INFO    Plan length: 7
2018-10-12 17:17:49,196 INFO    validate could not be found on the PATH so the
plan can not be validated.
```

- Hff :

- entered code line = `src/pyperplan.py -H hff -s astar benchmarks/movie/domain.pddl benchmarks/movie/task30.pddl`

- output first trail =

```
ip-145-116-167-138:malte-pyperplan-b014fe50dbbf Kimnayeong$ src/pyperplan.py -
H hff -s astar benchmarks/movie/domain.pddl benchmarks/movie/task30.pddl
2018-10-12 17:20:14,153 INFO    using search: astar_search
2018-10-12 17:20:14,153 INFO    using heuristic: hFFHeuristic
2018-10-12 17:20:14,153 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 17:20:14,156 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task30.pddl
2018-10-12 17:20:14,161 INFO    14 Predicates parsed
2018-10-12 17:20:14,161 INFO    8 Actions parsed
2018-10-12 17:20:14,161 INFO    170 Objects parsed
2018-10-12 17:20:14,161 INFO    0 Constants parsed
2018-10-12 17:20:14,161 INFO    Grounding start: strips-movie-x-30
2018-10-12 17:20:14,300 INFO    Relevance analysis removed 0 facts
2018-10-12 17:20:14,300 INFO    Grounding end: strips-movie-x-30
```



```

2018-10-12 17:20:14,300 INFO    7 Variables created
2018-10-12 17:20:14,300 INFO   172 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 17:20:14,301 INFO    Search start: strips-movie-x-30
2018-10-12 17:20:14,301 INFO    Initial h value: 7.000000
2018-10-12 17:20:14,574 INFO    Goal reached. Start extraction of solution.
2018-10-12 17:20:14,574 INFO    8 Nodes expanded
2018-10-12 17:20:14,574 INFO    Search end: strips-movie-x-30
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:20:14,574 INFO    Wall-clock search time: 0.27
2018-10-12 17:20:14,574 INFO    Plan length: 7
2018-10-12 17:20:14,578 INFO    validate could not be found on the PATH so the
plan can not be validated.

```

• Hmax :

- entered code line = `src/pyperplan.py -H hmax -s astar benchmarks/movie/domain.pddl benchmarks/movie/task30.pddl`
- using search: `astar_search` output first trail =

```

2018-10-12 17:21:29,384 INFO    using search: astar_search
2018-10-12 17:21:29,384 INFO    using heuristic: hMaxHeuristic
2018-10-12 17:21:29,384 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/domain.pddl
2018-10-12 17:21:29,387 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/movie/task30.pddl
2018-10-12 17:21:29,394 INFO    14 Predicates parsed
2018-10-12 17:21:29,394 INFO    8 Actions parsed
2018-10-12 17:21:29,394 INFO    170 Objects parsed
2018-10-12 17:21:29,394 INFO    0 Constants parsed
2018-10-12 17:21:29,394 INFO    Grounding start: strips-movie-x-30
2018-10-12 17:21:29,536 INFO    Relevance analysis removed 0 facts
2018-10-12 17:21:29,536 INFO    Grounding end: strips-movie-x-30
2018-10-12 17:21:29,536 INFO    7 Variables created
2018-10-12 17:21:29,536 INFO   172 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-12 17:21:29,537 INFO    Search start: strips-movie-x-30
2018-10-12 17:21:29,538 INFO    Initial h value: 1.000000
2018-10-12 17:21:34,469 INFO    Goal reached. Start extraction of solution.
2018-10-12 17:21:34,469 INFO   122 Nodes expanded
2018-10-12 17:21:34,470 INFO    Search end: strips-movie-x-30
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:21:34,470 INFO    Wall-clock search time: 4.9
2018-10-12 17:21:34,470 INFO    Plan length: 7
2018-10-12 17:21:34,474 INFO    validate could not be found on the PATH so the
plan can not be validated.

```

Domain Blocks :

*Table of results :***Blocks - Task 1**

	Blind	Hadd	Hff	Hmax
1	0,0021	0,0072	0,0035	0,014
2	0,0036	0,0072	0,0035	0,015
3	0,0024	0,0060	0,0069	0,013
4	0,0024	0,0059	0,0056	0,014
5	0,0020	0,0092	0,0076	0,017
6	0,0023	0,0092	0,0064	0,016
7	0,0021	0,0092	0,0035	0,015
8	0,0022	0,0093	0,0038	0,012
9	0,0023	0,0090	0,0073	0,014
10	0,0021	0,0090	0,0056	0,014

Blocks - Task 07

	Blind	Hadd	Hff	Hmax
1	0,089	0,22	0,019	0,34
2	0,078	0,17	0,015	0,34
3	0,078	0,21	0,018	0,36
4	0,067	0,20	0,017	0,34
5	0,076	0,22	0,018	0,33
6	0,076	0,22	0,014	0,33
7	0,084	0,21	0,021	0,36
8	0,075	0,19	0,018	0,35
9	0,070	0,23	0,020	0,35
10	0,073	0,21	0,018	0,34

Blocks - Task 12

	Blind	Hadd	Hff	Hmax
1	2,3	0,14	0,57	3,1E+01
2	2,3	0,14	0,53	3,1E+01
3	2,2	0,11	0,55	3,2E+01
4	2,2	0,16	0,55	3,0E+01
5	2,2	0,12	0,56	3,0E+01
6	2,2	0,13	0,56	3,1E+01
7	2,4	0,11	0,55	3,1E+01
8	2,4	0,10	0,56	3,0E+01
9	2,3	0,10	0,53	3,1E+01
10	2,1	0,15	0,55	3,0E+01

Task 1 :

- Blind heuristic :

- entered code line = `src/pyperplan.py -H blind -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task01.pddl`
- output first trail =

```
2018-10-12 17:25:41,194 INFO    using search: astar_search
2018-10-12 17:25:41,194 INFO    using heuristic: BlindHeuristic
2018-10-12 17:25:41,194 INFO    Parsing Domain /Users/chantal/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-12 17:25:41,195 INFO    Parsing Problem /Users/chantal/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/task01.pddl
2018-10-12 17:25:41,196 INFO    5 Predicates parsed
2018-10-12 17:25:41,196 INFO    4 Actions parsed
2018-10-12 17:25:41,196 INFO    4 Objects parsed
2018-10-12 17:25:41,196 INFO    0 Constants parsed
2018-10-12 17:25:41,196 INFO    Grounding start: blocks-4-0
2018-10-12 17:25:41,197 INFO    Relevance analysis removed 0 facts
2018-10-12 17:25:41,197 INFO    Grounding end: blocks-4-0
2018-10-12 17:25:41,197 INFO    29 Variables created
2018-10-12 17:25:41,197 INFO    40 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead
    search_start_time = time.clock()
2018-10-12 17:25:41,197 INFO    Search start: blocks-4-0
2018-10-12 17:25:41,197 INFO    Initial h value: 1.000000
2018-10-12 17:25:41,199 INFO    Goal reached. Start extraction of solution.
2018-10-12 17:25:41,199 INFO    82 Nodes expanded
2018-10-12 17:25:41,199 INFO    Search end: blocks-4-0
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead
    logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:25:41,199 INFO    Wall-clock search time: 0.0021
2018-10-12 17:25:41,200 INFO    Plan length: 6
```

- Hadd:

- entered code line = `src/pyperplan.py -H hadd -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task01.pddl`
- Output first trial =

```
2018-10-12 17:28:48,960 INFO    using search: astar_search
2018-10-12 17:28:48,960 INFO    using heuristic: hAddHeuristic
2018-10-12 17:28:48,960 INFO    Parsing Domain /Users/chantal/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-12 17:28:48,962 INFO    Parsing Problem /Users/chantal/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/task01.pddl
2018-10-12 17:28:48,963 INFO    5 Predicates parsed
2018-10-12 17:28:48,963 INFO    4 Actions parsed
2018-10-12 17:28:48,963 INFO    4 Objects parsed
2018-10-12 17:28:48,963 INFO    0 Constants parsed
2018-10-12 17:28:48,963 INFO    Grounding start: blocks-4-0
2018-10-12 17:28:48,964 INFO    Relevance analysis removed 0 facts
2018-10-12 17:28:48,964 INFO    Grounding end: blocks-4-0
2018-10-12 17:28:48,964 INFO    29 Variables created
2018-10-12 17:28:48,965 INFO    40 Operators created
```

src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
search_start_time = time.clock()
```

2018-10-12 17:28:48,965 INFO Search start: blocks-4-0

2018-10-12 17:28:48,966 INFO Initial h value: 6.000000

2018-10-12 17:28:48,972 INFO Goal reached. Start extraction of solution.

2018-10-12 17:28:48,972 INFO 12 Nodes expanded

2018-10-12 17:28:48,972 INFO Search end: blocks-4-0

src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
```

2018-10-12 17:28:48,972 INFO Wall-clock search time: 0.0072

2018-10-12 17:28:48,972 INFO Plan length: 6

2018-10-12 17:28:48,975 INFO validate could not be found on the PATH so the plan can not be validated.

- Hff:

- entered code line= src/pyperplan.py -H hff -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task01.pddl

- Output first trial =

2018-10-12 17:30:31,435 INFO using search: astar_search

2018-10-12 17:30:31,435 INFO using heuristic: hFFHeuristic

2018-10-12 17:30:31,435 INFO Parsing Domain /Users/chantal/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/domain.pddl

2018-10-12 17:30:31,437 INFO Parsing Problem /Users/chantal/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/task01.pddl

2018-10-12 17:30:31,437 INFO 5 Predicates parsed

2018-10-12 17:30:31,437 INFO 4 Actions parsed

2018-10-12 17:30:31,437 INFO 4 Objects parsed

2018-10-12 17:30:31,437 INFO 0 Constants parsed

2018-10-12 17:30:31,437 INFO Grounding start: blocks-4-0

2018-10-12 17:30:31,438 INFO Relevance analysis removed 0 facts

2018-10-12 17:30:31,438 INFO Grounding end: blocks-4-0

2018-10-12 17:30:31,438 INFO 29 Variables created

2018-10-12 17:30:31,439 INFO 40 Operators created

src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
search_start_time = time.clock()
```

2018-10-12 17:30:31,439 INFO Search start: blocks-4-0

2018-10-12 17:30:31,439 INFO Initial h value: 6.000000

2018-10-12 17:30:31,442 INFO Goal reached. Start extraction of solution.

2018-10-12 17:30:31,442 INFO 7 Nodes expanded

2018-10-12 17:30:31,442 INFO Search end: blocks-4-0

src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
```

2018-10-12 17:30:31,443 INFO Wall-clock search time: 0.0035

2018-10-12 17:30:31,443 INFO Plan length: 6

2018-10-12 17:30:31,445 INFO validate could not be found on the PATH so the plan can not be validated.

- Hmax:

- entered code line = src/pyperplan.py -H hmax -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task01.pddl

```

- output first trail =
  2018-10-12 17:27:22,287 INFO    using search: astar_search
  2018-10-12 17:27:22,287 INFO    using heuristic: hMaxHeuristic
  2018-10-12 17:27:22,287 INFO    Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
  2018-10-12 17:27:22,288 INFO    Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task01.pddl
  2018-10-12 17:27:22,289 INFO    5 Predicates parsed
  2018-10-12 17:27:22,289 INFO    4 Actions parsed
  2018-10-12 17:27:22,289 INFO    4 Objects parsed
  2018-10-12 17:27:22,289 INFO    0 Constants parsed
  2018-10-12 17:27:22,289 INFO    Grounding start: blocks-4-0
  2018-10-12 17:27:22,290 INFO    Relevance analysis removed 0 facts
  2018-10-12 17:27:22,290 INFO    Grounding end: blocks-4-0
  2018-10-12 17:27:22,290 INFO    29 Variables created
  2018-10-12 17:27:22,290 INFO    40 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in Python
3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time
instead
  search_start_time = time.clock()
  2018-10-12 17:27:22,290 INFO    Search start: blocks-4-0
  2018-10-12 17:27:22,291 INFO    Initial h value: 2.000000
  2018-10-12 17:27:22,305 INFO    Goal reached. Start extraction of solution.
  2018-10-12 17:27:22,305 INFO    25 Nodes expanded
  2018-10-12 17:27:22,305 INFO    Search end: blocks-4-0
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in Python
3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time
instead
  logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-12 17:27:22,305 INFO    Wall-clock search time: 0.014
  2018-10-12 17:27:22,305 INFO    Plan length: 6
  2018-10-12 17:27:22,309 INFO    validate could not be found on the PATH so the plan
can not be validated.

```

Task 7:

- Blind heuristic :
 - entered = src/pyperplan.py -H blind -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task07.pddl
 - Output first trail =


```

2018-10-16 16:07:43,540 INFO    using search: astar_search
2018-10-16 16:07:43,540 INFO    using heuristic: BlindHeuristic
2018-10-16 16:07:43,540 INFO    Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 16:07:43,541 INFO    Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task07.pddl
2018-10-16 16:07:43,542 INFO    5 Predicates parsed
2018-10-16 16:07:43,542 INFO    4 Actions parsed
2018-10-16 16:07:43,542 INFO    6 Objects parsed
2018-10-16 16:07:43,542 INFO    0 Constants parsed
2018-10-16 16:07:43,542 INFO    Grounding start: blocks-6-0
2018-10-16 16:07:43,544 INFO    Relevance analysis removed 0 facts
2018-10-16 16:07:43,544 INFO    Grounding end: blocks-6-0
2018-10-16 16:07:43,544 INFO    55 Variables created
2018-10-16 16:07:43,544 INFO    84 Operators created
2018-10-16 16:07:43,544 INFO    Search start: blocks-6-0
2018-10-16 16:07:43,544 INFO    Initial h value: 1.000000

```



```

2018-10-16 16:07:43,618 INFO    Goal reached. Start extraction of solution.
2018-10-16 16:07:43,618 INFO    2038 Nodes expanded
2018-10-16 16:07:43,619 INFO    Search end: blocks-6-0
2018-10-16 16:07:43,619 INFO    Wall-clock search time: 0.089
2018-10-16 16:07:43,619 INFO    Plan length: 12
2018-10-16 16:07:43,623 INFO    validate could not be found on the PATH so the plan
can not be validated.

```

- Hadd:

- entered code line = `src/pyperplan.py -H hadd -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task07.pddl`

- Output first trail =

```

2018-10-16 16:08:40,793 INFO    using search: astar_search
2018-10-16 16:08:40,793 INFO    using heuristic: hAddHeuristic
2018-10-16 16:08:40,793 INFO    Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 16:08:40,794 INFO    Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task07.pddl
2018-10-16 16:08:40,795 INFO    5 Predicates parsed
2018-10-16 16:08:40,795 INFO    4 Actions parsed
2018-10-16 16:08:40,795 INFO    6 Objects parsed
2018-10-16 16:08:40,795 INFO    0 Constants parsed
2018-10-16 16:08:40,795 INFO    Grounding start: blocks-6-0
2018-10-16 16:08:40,796 INFO    Relevance analysis removed 0 facts
2018-10-16 16:08:40,796 INFO    Grounding end: blocks-6-0
2018-10-16 16:08:40,796 INFO    55 Variables created
2018-10-16 16:08:40,796 INFO    84 Operators created
2018-10-16 16:08:40,797 INFO    Search start: blocks-6-0
2018-10-16 16:08:40,797 INFO    Initial h value: 20.000000
2018-10-16 16:08:41,018 INFO    Goal reached. Start extraction of solution.
2018-10-16 16:08:41,018 INFO    169 Nodes expanded
2018-10-16 16:08:41,019 INFO    Search end: blocks-6-0
2018-10-16 16:08:41,019 INFO    Wall-clock search time: 0.22
2018-10-16 16:08:41,019 INFO    Plan length: 18
2018-10-16 16:08:41,021 INFO    validate could not be found on the PATH so the plan
can not be validated.

```

- Hff:

- entered code line = `src/pyperplan.py -H hff -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task07.pddl`

- output first trial =

```

2018-10-16 16:09:29,158 INFO    using search: astar_search
2018-10-16 16:09:29,158 INFO    using heuristic: hFFHeuristic
2018-10-16 16:09:29,158 INFO    Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 16:09:29,159 INFO    Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task07.pddl
2018-10-16 16:09:29,160 INFO    5 Predicates parsed
2018-10-16 16:09:29,160 INFO    4 Actions parsed
2018-10-16 16:09:29,160 INFO    6 Objects parsed
2018-10-16 16:09:29,160 INFO    0 Constants parsed
2018-10-16 16:09:29,160 INFO    Grounding start: blocks-6-0
2018-10-16 16:09:29,161 INFO    Relevance analysis removed 0 facts
2018-10-16 16:09:29,161 INFO    Grounding end: blocks-6-0
2018-10-16 16:09:29,161 INFO    55 Variables created
2018-10-16 16:09:29,161 INFO    84 Operators created
2018-10-16 16:09:29,162 INFO    Search start: blocks-6-0
2018-10-16 16:09:29,162 INFO    Initial h value: 11.000000

```

```

2018-10-16 16:09:29,180 INFO    Goal reached. Start extraction of solution.
2018-10-16 16:09:29,180 INFO    21 Nodes expanded
2018-10-16 16:09:29,180 INFO    Search end: blocks-6-0
2018-10-16 16:09:29,180 INFO    Wall-clock search time: 0.019
2018-10-16 16:09:29,180 INFO    Plan length: 12
2018-10-16 16:09:29,182 INFO    validate could not be found on the PATH so the plan
can not be validated.

```

- Hmax :

- entered code line = `src/pyperplan.py -H hmax -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task07.pddl`
- output first trial =

```

2018-10-16 16:10:29,788 INFO    using search: astar_search
2018-10-16 16:10:29,788 INFO    using heuristic: hMaxHeuristic
2018-10-16 16:10:29,788 INFO    Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 16:10:29,790 INFO    Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task07.pddl
2018-10-16 16:10:29,790 INFO    5 Predicates parsed
2018-10-16 16:10:29,790 INFO    4 Actions parsed
2018-10-16 16:10:29,790 INFO    6 Objects parsed
2018-10-16 16:10:29,790 INFO    0 Constants parsed
2018-10-16 16:10:29,790 INFO    Grounding start: blocks-6-0
2018-10-16 16:10:29,792 INFO    Relevance analysis removed 0 facts
2018-10-16 16:10:29,792 INFO    Grounding end: blocks-6-0
2018-10-16 16:10:29,792 INFO    55 Variables created
2018-10-16 16:10:29,792 INFO    84 Operators created
2018-10-16 16:10:29,792 INFO    Search start: blocks-6-0
2018-10-16 16:10:29,793 INFO    Initial h value: 4.000000
2018-10-16 16:10:30,144 INFO    Goal reached. Start extraction of solution.
2018-10-16 16:10:30,144 INFO    274 Nodes expanded
2018-10-16 16:10:30,144 INFO    Search end: blocks-6-0
2018-10-16 16:10:30,144 INFO    Wall-clock search time: 0.34
2018-10-16 16:10:30,144 INFO    Plan length: 12

```

Task 12:

- Blind heuristic :

- entered codeline = `src/pyperplan.py -H blind -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task12.pddl`
- output first trail =

```

2018-10-16 15:57:55,381 INFO    using search: astar_search
2018-10-16 15:57:55,381 INFO    using heuristic: BlindHeuristic
2018-10-16 15:57:55,381 INFO    Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 15:57:55,383 INFO    Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task12.pddl
2018-10-16 15:57:55,383 INFO    5 Predicates parsed
2018-10-16 15:57:55,383 INFO    4 Actions parsed
2018-10-16 15:57:55,384 INFO    7 Objects parsed
2018-10-16 15:57:55,384 INFO    0 Constants parsed
2018-10-16 15:57:55,384 INFO    Grounding start: blocks-7-2
2018-10-16 15:57:55,385 INFO    Relevance analysis removed 0 facts
2018-10-16 15:57:55,386 INFO    Grounding end: blocks-7-2
2018-10-16 15:57:55,386 INFO    71 Variables created
2018-10-16 15:57:55,386 INFO    112 Operators created
2018-10-16 15:57:55,386 INFO    Search start: blocks-7-2

```

```

2018-10-16 15:57:55,386 INFO Initial h value: 1.000000
2018-10-16 15:57:57,543 INFO Goal reached. Start extraction of solution.
2018-10-16 15:57:57,543 INFO 55220 Nodes expanded
2018-10-16 15:57:57,557 INFO Search end: blocks-7-2
2018-10-16 15:57:57,557 INFO Wall-clock search time: 2.3
2018-10-16 15:57:57,557 INFO Plan length: 20
2018-10-16 15:57:57,560 INFO validate could not be found on the PATH so the plan
can not be validate

```

• Hadd :

- entered code line = `src/pyperplan.py -H hadd -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task12.pddl`

- output first trail =

```

2018-10-16 16:00:15,672 INFO using heuristic: hAddHeuristic
2018-10-16 16:00:15,672 INFO Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 16:00:15,673 INFO Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task12.pddl
2018-10-16 16:00:15,674 INFO 5 Predicates parsed
2018-10-16 16:00:15,674 INFO 4 Actions parsed
2018-10-16 16:00:15,674 INFO 7 Objects parsed
2018-10-16 16:00:15,674 INFO 0 Constants parsed
2018-10-16 16:00:15,674 INFO Grounding start: blocks-7-2
2018-10-16 16:00:15,676 INFO Relevance analysis removed 0 facts
2018-10-16 16:00:15,676 INFO Grounding end: blocks-7-2
2018-10-16 16:00:15,676 INFO 71 Variables created
2018-10-16 16:00:15,676 INFO 112 Operators created
2018-10-16 16:00:15,677 INFO Search start: blocks-7-2
2018-10-16 16:00:15,677 INFO Initial h value: 24.000000
2018-10-16 16:00:15,826 INFO Goal reached. Start extraction of solution.
2018-10-16 16:00:15,827 INFO 83 Nodes expanded
2018-10-16 16:00:15,827 INFO Search end: blocks-7-2
2018-10-16 16:00:15,827 INFO Wall-clock search time: 0.14
2018-10-16 16:00:15,827 INFO Plan length: 24
2018-10-16 16:00:15,829 INFO validate could not be found on the PATH so the plan
can not be validated.

```

• Hff :

- entered code line = `src/pyperplan.py -H hff -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task12.pddl`

- output first trail =

```

2018-10-16 16:01:35,480 INFO using search: astar_search
2018-10-16 16:01:35,480 INFO using heuristic: hFFHeuristic
2018-10-16 16:01:35,480 INFO Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 16:01:35,482 INFO Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task12.pddl
2018-10-16 16:01:35,482 INFO 5 Predicates parsed
2018-10-16 16:01:35,482 INFO 4 Actions parsed
2018-10-16 16:01:35,482 INFO 7 Objects parsed
2018-10-16 16:01:35,482 INFO 0 Constants parsed
2018-10-16 16:01:35,482 INFO Grounding start: blocks-7-2
2018-10-16 16:01:35,484 INFO Relevance analysis removed 0 facts
2018-10-16 16:01:35,484 INFO Grounding end: blocks-7-2
2018-10-16 16:01:35,484 INFO 71 Variables created
2018-10-16 16:01:35,485 INFO 112 Operators created
2018-10-16 16:01:35,485 INFO Search start: blocks-7-2
2018-10-16 16:01:35,485 INFO Initial h value: 12.000000

```

```

2018-10-16 16:01:36,036 INFO    Goal reached. Start extraction of solution.
2018-10-16 16:01:36,037 INFO    337 Nodes expanded
2018-10-16 16:01:36,037 INFO    Search end: blocks-7-2
2018-10-16 16:01:36,037 INFO    Wall-clock search time: 0.57
2018-10-16 16:01:36,037 INFO    Plan length: 20
2018-10-16 16:01:36,040 INFO    validate could not be found on the PATH so the plan
can not be validated.

```

• Hmax :

- entered code line = `src/pyperplan.py -H hmax -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task12.pddl`

- output first trial =

```

2018-10-16 16:02:48,846 INFO    using search: astar_search
2018-10-16 16:02:48,846 INFO    using heuristic: hMaxHeuristic
2018-10-16 16:02:48,847 INFO    Parsing Domain /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-16 16:02:48,848 INFO    Parsing Problem /Users/chantal/malte-pyperplan-
b014fe50dbbf/benchmarks/blocks/task12.pddl
2018-10-16 16:02:48,849 INFO    5 Predicates parsed
2018-10-16 16:02:48,849 INFO    4 Actions parsed
2018-10-16 16:02:48,849 INFO    7 Objects parsed
2018-10-16 16:02:48,849 INFO    0 Constants parsed
2018-10-16 16:02:48,849 INFO    Grounding start: blocks-7-2
2018-10-16 16:02:48,851 INFO    Relevance analysis removed 0 facts
2018-10-16 16:02:48,851 INFO    Grounding end: blocks-7-2
2018-10-16 16:02:48,851 INFO    71 Variables created
2018-10-16 16:02:48,852 INFO    112 Operators created
2018-10-16 16:02:48,852 INFO    Search start: blocks-7-2
2018-10-16 16:02:48,853 INFO    Initial h value: 6.000000
2018-10-16 16:03:19,876 INFO    Goal reached. Start extraction of solution.
2018-10-16 16:03:19,876 INFO    18296 Nodes expanded
2018-10-16 16:03:19,887 INFO    Search end: blocks-7-2
2018-10-16 16:03:19,887 INFO    Wall-clock search time: 3.1e+01
2018-10-16 16:03:19,887 INFO    Plan length: 20
2018-10-16 16:03:19,890 INFO    validate could not be found on the PATH so the plan
can not be validated.

```

Additional test result for H add for domain Blocks

• Task 6 :

- entered code line = `src/pyperplan.py -H hadd -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task06.pddl`

- output first trial =

```

2018-10-19 11:59:47,002 INFO    using search: astar_search
2018-10-19 11:59:47,002 INFO    using heuristic: hAddHeuristic
2018-10-19 11:59:47,002 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-19 11:59:47,009 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/blocks/task06.pddl
2018-10-19 11:59:47,013 INFO    5 Predicates parsed
2018-10-19 11:59:47,013 INFO    4 Actions parsed
2018-10-19 11:59:47,013 INFO    5 Objects parsed
2018-10-19 11:59:47,013 INFO    0 Constants parsed
2018-10-19 11:59:47,013 INFO    Grounding start: blocks-5-2
2018-10-19 11:59:47,015 INFO    Relevance analysis removed 0 facts
2018-10-19 11:59:47,016 INFO    Grounding end: blocks-5-2
2018-10-19 11:59:47,016 INFO    41 Variables created
2018-10-19 11:59:47,016 INFO    60 Operators created

```

src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
search_start_time = time.clock()
```

2018-10-19 11:59:47,017 INFO Search start: blocks-5-2

2018-10-19 11:59:47,017 INFO Initial h value: 25.000000

2018-10-19 11:59:47,058 INFO Goal reached. Start extraction of solution.

2018-10-19 11:59:47,059 INFO 33 Nodes expanded

2018-10-19 11:59:47,059 INFO Search end: blocks-5-2

src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
```

2018-10-19 11:59:47,059 INFO **Wall-clock search time: 0.042**

2018-10-19 11:59:47,059 INFO Plan length: 16

2018-10-19 11:59:47,071 INFO validate could not be found on the PATH so the plan can not be validated.

- Task 7 :

- entered code line = src/pyperplan.py -H hadd -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task07.pddl

- output first trial =

2018-10-19 12:00:28,531 INFO using search: astar_search

2018-10-19 12:00:28,532 INFO using heuristic: hAddHeuristic

2018-10-19 12:00:28,532 INFO Parsing Domain /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/domain.pddl

2018-10-19 12:00:28,538 INFO Parsing Problem /Users/Kimnayeong/malte-pyperplan-b014fe50dbbf/benchmarks/blocks/task07.pddl

2018-10-19 12:00:28,541 INFO 5 Predicates parsed

2018-10-19 12:00:28,541 INFO 4 Actions parsed

2018-10-19 12:00:28,541 INFO 6 Objects parsed

2018-10-19 12:00:28,541 INFO 0 Constants parsed

2018-10-19 12:00:28,541 INFO Grounding start: blocks-6-0

2018-10-19 12:00:28,544 INFO Relevance analysis removed 0 facts

2018-10-19 12:00:28,544 INFO Grounding end: blocks-6-0

2018-10-19 12:00:28,544 INFO 55 Variables created

2018-10-19 12:00:28,544 INFO 84 Operators created

src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
search_start_time = time.clock()
```

2018-10-19 12:00:28,545 INFO Search start: blocks-6-0

2018-10-19 12:00:28,546 INFO Initial h value: 20.000000

2018-10-19 12:00:28,966 INFO Goal reached. Start extraction of solution.

2018-10-19 12:00:28,966 INFO 151 Nodes expanded

2018-10-19 12:00:28,966 INFO Search end: blocks-6-0

src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in Python 3.3 and will be removed from Python 3.8: use time.perf_counter or time.process_time instead

```
logging.info('Wall-clock search time: {0:.2}'.format(time.clock()) -
```

2018-10-19 12:00:28,966 INFO **Wall-clock search time: 0.39**

2018-10-19 12:00:28,967 INFO Plan length: 18

2018-10-19 12:00:28,978 INFO validate could not be found on the PATH so the plan can not be validated.

- Task 8 :

- entered code line = src/pyperplan.py -H hadd -s astar benchmarks/blocks/domain.pddl benchmarks/blocks/task08.pddl

- output first trial =

```
2018-10-19 12:01:23,015 INFO    using search: astar_search
2018-10-19 12:01:23,015 INFO    using heuristic: hAddHeuristic
2018-10-19 12:01:23,015 INFO    Parsing Domain /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/blocks/domain.pddl
2018-10-19 12:01:23,024 INFO    Parsing Problem /Users/Kimnayeong/malte-
pyperplan-b014fe50dbbf/benchmarks/blocks/task08.pddl
2018-10-19 12:01:23,028 INFO    5 Predicates parsed
2018-10-19 12:01:23,028 INFO    4 Actions parsed
2018-10-19 12:01:23,029 INFO    6 Objects parsed
2018-10-19 12:01:23,029 INFO    0 Constants parsed
2018-10-19 12:01:23,029 INFO    Grounding start: blocks-6-1
2018-10-19 12:01:23,034 INFO    Relevance analysis removed 0 facts
2018-10-19 12:01:23,034 INFO    Grounding end: blocks-6-1
2018-10-19 12:01:23,034 INFO    55 Variables created
2018-10-19 12:01:23,035 INFO    84 Operators created
src/pyperplan.py:176: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    search_start_time = time.clock()
2018-10-19 12:01:23,041 INFO    Search start: blocks-6-1
2018-10-19 12:01:23,043 INFO    Initial h value: 12.000000
2018-10-19 12:01:23,115 INFO    Goal reached. Start extraction of solution.
2018-10-19 12:01:23,115 INFO    31 Nodes expanded
2018-10-19 12:01:23,115 INFO    Search end: blocks-6-1
src/pyperplan.py:181: DeprecationWarning: time.clock has been deprecated in
Python 3.3 and will be removed from Python 3.8: use time.perf_counter or
time.process_time instead
    logging.info("Wall-clock search time: {0:.2}'.format(time.clock()) -
2018-10-19 12:01:23,116 INFO    Wall-clock search time: 0.073
2018-10-19 12:01:23,116 INFO    Plan length: 10
2018-10-19 12:01:23,128 INFO    validate could not be found on the PATH so the
plan can not be validated.
```