|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OPEN LIST**  **PQ** | **COST** | **PARENT** |  | **CLOSED LIST** |
| 1  (POP) | 0 | NULL | 1 |
| 2  (POP) | 75 | 1 | 2 |
| 4  (POP) | 140 | 1 | 4 |
| 3 | 71+75 = 146 | 2 | 3 |
| 3 | 151+140 = 291 | 4 | 5 |
| 5 | 80+140 = 220 | 4 | 7 |
| 7 | 99+140 = 239 | 4 | 6 |
| 6 | 97 + 220 = 317 | 5 | 8 |
| 8 | 239+211 = 450 | 7 |  |
| 8 | 101 + 317 = 418 | 6 |  |
|  |  |  |  |

**ALGORITHM: Uniform Cost**

**SOLUTION: 1 -> 4 -> 5 -> 6 -> 8**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OPEN LIST**  **PQ** | **COST** | **PARENT** |  | **CLOSED LIST** |
| 1  (POP) | 366 | NULL | 1 |
| 2 | 374 | 1 | 4 |
| 4  (POP) | 244 | 1 | 7 |
| 3 | 380 | 4 |  |
| 5 | 213 | 4 |  |
| 7  (POP) | 176 | 4 |  |
| 8  (END) | 0 | 7 |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**ALGORITHM: Best First**

**SOLUTION: 1 -> 4 -> 7 ->8**

**ALGORITHM: A\***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OPEN LIST** | **ACTUAL + ESTIMATED COST** | **PARENT** |  | **CLOSED LIST** |
|  |  |  |  |
| 1 | ACTUAL = 0  TOTAL = ACTUAL + ESTIMATED =  366+0 = 366 | NULL | 1 |
| 2 | A = 75  EST = 375  T = 449 | 1 | 4 |
| 4 | A = 140  EST = 244  T = 384 | 1 | 7 |
| 3 | A = 151 + 140 = 291  EST = 291 + 380  T = 671 | 4 | 5 |
| 5 | A = 80 + 140 = 220  EST = 220 + 213  T = 433 | 4 | 6 |
| 7 | A = 99 + 140 = 239  EST = 176 + 239  T = 415 | 4 |  |
| 8 | A = 211 + 239 = 450  EST = 450 + 0  T = 450 | 7 |  |
| 6 | A = 97 + 220 = 317  EST = 317 +100  T = 417 | 5 |  |
| 8 | A = 317 + 101 = 418  EST = 418 + 0  T = 418 | 6 |  |
|  |  |  |  |
|  |  |  |  |

**SOLUTION: 1->4->5->6->8**