Expected results for the test cases:

The original pa3d.c:

There are two kinds of possible output:

car 4 enter first:

W---------1E Car 1 enters at 10 at 40 mph
W--------1-E Car 1 moves from 10 to 9
W-------1--E Car 1 moves from 9 to 8
W------1---E Car 1 moves from 8 to 7
W-----1----E Car 1 moves from 7 to 6
W----1-----E Car 1 moves from 6 to 5
W---1------E Car 1 moves from 5 to 4
W--1-------E Car 1 moves from 4 to 3
W-1--------E Car 1 moves from 3 to 2
W1---------E Car 1 moves from 2 to 1
W----------E Car 1 exits road
W4---------E Car 4 enters at 1 at 30 mph
W-4--------E Car 4 moves from 1 to 2
W--4-------E Car 4 moves from 2 to 3
W---4------E Car 4 moves from 3 to 4
W----4-----E Car 4 moves from 4 to 5
W-----4----E Car 4 moves from 5 to 6
W------4---E Car 4 moves from 6 to 7
W-------4--E Car 4 moves from 7 to 8
W--------4-E Car 4 moves from 8 to 9
W---------4E Car 4 moves from 9 to 10
W----------E Car 4 exits road
W---------3E Car 3 enters at 10 at 50 mph
W--------3-E Car 3 moves from 10 to 9
W-------3--E Car 3 moves from 9 to 8
W------3---E Car 3 moves from 8 to 7
W-----3----E Car 3 moves from 7 to 6
W----3-----E Car 3 moves from 6 to 5
W---3------E Car 3 moves from 5 to 4
W--3-------E Car 3 moves from 4 to 3
W-3--------E Car 3 moves from 3 to 2
W3---------E Car 3 moves from 2 to 1
W----------E Car 3 exits road
W2---------E Car 2 enters at 1 at 60 mph
W-2--------E Car 2 moves from 1 to 2
W--2-------E Car 2 moves from 2 to 3
W---2------E Car 2 moves from 3 to 4

W----2-----E Car 2 moves from 4 to 5
W-----2----E Car 2 moves from 5 to 6
W------2---E Car 2 moves from 6 to 7
W-------2--E Car 2 moves from 7 to 8
W--------2-E Car 2 moves from 8 to 9
W---------2E Car 2 moves from 9 to 10
W----------E Car 2 exits road

Car 3 enters first:

W---------1E Car 1 enters at 10 at 40 mph
W--------1-E Car 1 moves from 10 to 9
W-------1--E Car 1 moves from 9 to 8
W------1---E Car 1 moves from 8 to 7
W-----1----E Car 1 moves from 7 to 6
W----1-----E Car 1 moves from 6 to 5
W---1------E Car 1 moves from 5 to 4
W--1-------E Car 1 moves from 4 to 3
W-1--------E Car 1 moves from 3 to 2
W1---------E Car 1 moves from 2 to 1
W1--------3E Car 3 enters at 10 at 50 mph
W---------3E Car 1 exits road
W--------3-E Car 3 moves from 10 to 9
W-------3--E Car 3 moves from 9 to 8
W------3---E Car 3 moves from 8 to 7
W-----3----E Car 3 moves from 7 to 6
W----3-----E Car 3 moves from 6 to 5
W---3------E Car 3 moves from 5 to 4
W--3-------E Car 3 moves from 4 to 3
W-3--------E Car 3 moves from 3 to 2
W3---------E Car 3 moves from 2 to 1
W----------E Car 3 exits road
W2---------E Car 2 enters at 1 at 60 mph
W-2--------E Car 2 moves from 1 to 2
W42--------E Car 4 enters at 1 at 30 mph
W4-2-------E Car 2 moves from 2 to 3
W-42-------E Car 4 moves from 1 to 2
W-4-2------E Car 2 moves from 3 to 4
W-4--2-----E Car 2 moves from 4 to 5
W--4-2-----E Car 4 moves from 2 to 3
W--4--2----E Car 2 moves from 5 to 6
W--4---2---E Car 2 moves from 6 to 7
W---4--2---E Car 4 moves from 3 to 4
W---4---2--E Car 2 moves from 7 to 8
W---4----2-E Car 2 moves from 8 to 9
W----4---2-E Car 4 moves from 4 to 5

W----4----2E Car 2 moves from 9 to 10
W----4-----E Car 2 exits road
W-----4----E Car 4 moves from 5 to 6
W------4---E Car 4 moves from 6 to 7
W-------4--E Car 4 moves from 7 to 8
W--------4-E Car 4 moves from 8 to 9
W---------4E Car 4 moves from 9 to 10
W----------E Car 4 exits road

Notice:

In the scenario that car 3 enters first, the sequence of car 4 and car 2 doesn't matter. The alternation between the two sides is what matters. And this also applies to other test cases below. In another word, the output below is also right:

W---------1E W--------1-E Car 1 moves from 10 to 9
W-------1--E Car 1 moves from 9 to 8
W------1---E Car 1 moves from 8 to 7
W-----1----E Car 1 moves from 7 to 6
W----1-----E Car 1 moves from 6 to 5
W---1------E Car 1 moves from 5 to 4
W--1-------E Car 1 moves from 4 to 3
W-1--------E Car 1 moves from 3 to 2
W1---------E Car 1 moves from 2 to 1
W1--------3E W---------3E Car 1 exits road
W--------3-E Car 3 moves from 10 to 9
W-------3--E Car 3 moves from 9 to 8
W------3---E Car 3 moves from 8 to 7
W-----3----E Car 3 moves from 7 to 6
W----3-----E Car 3 moves from 6 to 5
W---3------E Car 3 moves from 5 to 4
W--3-------E Car 3 moves from 4 to 3
W-3--------E Car 3 moves from 3 to 2
W3---------E Car 3 moves from 2 to 1
W----------E Car 3 exits road
W4---------E W-4--------E Car 4 moves from 1 to 2
W24--------E W2-4-------E Car 4 moves from 2 to 3
W-24-------E Car 2 moves from 1 to 2
W-2-4------E Car 4 moves from 3 to 4
W--24------E Car 2 moves from 2 to 3
W--2-4-----E Car 4 moves from 4 to 5
W---24-----E Car 2 moves from 3 to 4
W---2-4----E Car 4 moves from 5 to 6
W----24----E Car 2 moves from 4 to 5
W----2-4---E Car 4 moves from 6 to 7
W-----24---E Car 2 moves from 5 to 6

W-----2-4--E Car 4 moves from 7 to 8
W------24--E Car 2 moves from 6 to 7
W------2-4-E Car 4 moves from 8 to 9
W-------24-E Car 2 moves from 7 to 8
W-------2-4E Car 4 moves from 9 to 10
W--------24E Car 2 moves from 8 to 9
W--------2-E Car 4 exits road
W---------2E Car 2 moves from 9 to 10
W----------E Car 2 exits road

Test case 0:

```
void Main ()
{
  InitRoad ();

  if (Fork () == 0) {
    Delay (0);
    driveRoad (EAST, 10);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 80);
    Exit ();
  }

  driveRoad (WEST, 5);

  Exit ();
}
```

Expected Result:

Car 2 will enter the road before car3. Even if Car 3 arrives before car2, since car is still at the first spot, it has to wait. And this makes car 2 always enters first.

W1---------E W-1--------E Car 1 moves from 1 to 2
W--1-------E Car 1 moves from 2 to 3
W---1------E Car 1 moves from 3 to 4
W----1-----E Car 1 moves from 4 to 5
W-----1----E Car 1 moves from 5 to 6
W------1---E Car 1 moves from 6 to 7
W-------1--E Car 1 moves from 7 to 8
W--------1-E Car 1 moves from 8 to 9

W---------1E Car 1 moves from 9 to 10
W----------E Car 1 exits road
W---------2E W--------2-E Car 2 moves from 10 to 9
W-------2--E Car 2 moves from 9 to 8
W------2---E Car 2 moves from 8 to 7
W-----2----E Car 2 moves from 7 to 6
W----2-----E Car 2 moves from 6 to 5
W---2------E Car 2 moves from 5 to 4
W--2-------E Car 2 moves from 4 to 3
W-2--------E Car 2 moves from 3 to 2
W2---------E Car 2 moves from 2 to 1
W----------E Car 2 exits road
W3---------E W-3--------E Car 3 moves from 1 to 2
W--3-------E Car 3 moves from 2 to 3
W---3------E Car 3 moves from 3 to 4
W----3-----E Car 3 moves from 4 to 5
W-----3----E Car 3 moves from 5 to 6
W------3---E Car 3 moves from 6 to 7
W-------3--E Car 3 moves from 7 to 8
W--------3-E Car 3 moves from 8 to 9
W---------3E Car 3 moves from 9 to 10
W----------E Car 3 exits road

Test case 1:

```
void Main ()
{
  InitRoad ();

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 10);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 20);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 30);
    Exit ();
  }
```

```
  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 40);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 50);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 60);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 70);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 80);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 90);
    Exit ();
  }

  driveRoad (WEST, 5);

  Exit ();
}
```

Expected result:

The cars will run on road together without running into each other.
For example,

W1---------E W-1--------E Car 1 moves from 1 to 2
W21--------E W2-1-------E Car 1 moves from 2 to 3
W-21-------E Car 2 moves from 1 to 2

W321-------E W32-1------E Car 1 moves from 3 to 4
W3-21------E Car 2 moves from 2 to 3
W-321------E Car 3 moves from 1 to 2
W4321------E W432-1-----E Car 1 moves from 4 to 5
W43-21-----E Car 2 moves from 3 to 4
W4-321-----E Car 3 moves from 2 to 3
W-4321-----E Car 4 moves from 1 to 2
W54321-----E W5432-1----E Car 1 moves from 5 to 6
W543-21----E Car 2 moves from 4 to 5
W54-321----E Car 3 moves from 3 to 4
W5-4321----E Car 4 moves from 2 to 3
W-54321----E Car 5 moves from 1 to 2
W654321----E W65432-1---E Car 1 moves from 6 to 7
W6543-21---E Car 2 moves from 5 to 6
W654-321---E Car 3 moves from 4 to 5
W65-4321---E Car 4 moves from 3 to 4
W6-54321---E Car 5 moves from 2 to 3
W-654321---E Car 6 moves from 1 to 2
W7654321---E W765432-1--E Car 1 moves from 7 to 8
W76543-21--E Car 2 moves from 6 to 7
W7654-321--E Car 3 moves from 5 to 6
W765-4321--E Car 4 moves from 4 to 5
W76-54321--E Car 5 moves from 3 to 4
W7-654321--E Car 6 moves from 2 to 3
W-7654321--E Car 7 moves from 1 to 2
W87654321--E W8765432-1-E Car 1 moves from 8 to 9
W876543-21-E Car 2 moves from 7 to 8
W87654-321-E Car 3 moves from 6 to 7
W8765-4321-E Car 4 moves from 5 to 6
W876-54321-E Car 5 moves from 4 to 5
W87-654321-E Car 6 moves from 3 to 4
W8-7654321-E Car 7 moves from 2 to 3
W-87654321-E Car 8 moves from 1 to 2
W987654321-E W98765432-1E Car 1 moves from 9 to 10
W9876543-21E Car 2 moves from 8 to 9
W987654-321E Car 3 moves from 7 to 8
W98765-4321E Car 4 moves from 6 to 7
W9876-54321E Car 5 moves from 5 to 6
W987-654321E Car 6 moves from 4 to 5
W98-7654321E Car 7 moves from 3 to 4
W9-87654321E Car 8 moves from 2 to 3
W-987654321E Car 9 moves from 1 to 2
W10987654321E W1098765432-E Car 1 exits road
W109876543-2E Car 2 moves from 9 to 10
W10987654-32E Car 3 moves from 8 to 9
W1098765-432E Car 4 moves from 7 to 8

W109876-5432E Car 5 moves from 6 to 7
W10987-65432E Car 6 moves from 5 to 6
W1098-765432E Car 7 moves from 4 to 5
W109-8765432E Car 8 moves from 3 to 4
W10-98765432E Car 9 moves from 2 to 3
W-1098765432E Car 10 moves from 1 to 2
W-109876543-E Car 2 exits road
W-10987654-3E Car 3 moves from 9 to 10
W-1098765-43E Car 4 moves from 8 to 9
W-109876-543E Car 5 moves from 7 to 8
W-10987-6543E Car 6 moves from 6 to 7
W-1098-76543E Car 7 moves from 5 to 6
W-109-876543E Car 8 moves from 4 to 5
W-10-9876543E Car 9 moves from 3 to 4
W--109876543E Car 10 moves from 2 to 3
W--10987654-E Car 3 exits road
W--1098765-4E Car 4 moves from 9 to 10
W--109876-54E Car 5 moves from 8 to 9
W--10987-654E Car 6 moves from 7 to 8
W--1098-7654E Car 7 moves from 6 to 7
W--109-87654E Car 8 moves from 5 to 6
W--10-987654E Car 9 moves from 4 to 5
W---10987654E Car 10 moves from 3 to 4
W---1098765-E Car 4 exits road
W---109876-5E Car 5 moves from 9 to 10
W---10987-65E Car 6 moves from 8 to 9
W---1098-765E Car 7 moves from 7 to 8
W---109-8765E Car 8 moves from 6 to 7
W---10-98765E Car 9 moves from 5 to 6
W----1098765E Car 10 moves from 4 to 5
W----109876-E Car 5 exits road
W----10987-6E Car 6 moves from 9 to 10
W----1098-76E Car 7 moves from 8 to 9
W----109-876E Car 8 moves from 7 to 8
W----10-9876E Car 9 moves from 6 to 7
W-----109876E Car 10 moves from 5 to 6
W-----10987-E Car 6 exits road
W-----1098-7E Car 7 moves from 9 to 10
W-----109-87E Car 8 moves from 8 to 9
W-----10-987E Car 9 moves from 7 to 8
W------10987E Car 10 moves from 6 to 7
W------1098-E Car 7 exits road
W------109-8E Car 8 moves from 9 to 10
W------10-98E Car 9 moves from 8 to 9
W-------1098E Car 10 moves from 7 to 8
W-------109-E Car 8 exits road

W-------10-9E Car 9 moves from 9 to 10
W--------109E Car 10 moves from 8 to 9
W--------10-E Car 9 exits road
W---------10E Car 10 moves from 9 to 10
W----------E Car 10 exits road

Test case 2:

```
void Main ()
{
  InitRoad ();

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 10);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 20);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 30);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 40);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (EAST, 50);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (EAST, 60);
    Exit ();
  }

  if (Fork () == 0) {
```

```
    Delay (0);
    driveRoad (EAST, 70);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (EAST, 80);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (0);
    driveRoad (EAST, 90);
    Exit ();
  }

  driveRoad (WEST, 5);

  Exit ();
}
```

Expected Result:

After Car 1 exits, one car from the east side will enter. Then all the other cars will take turns to drive on the road.

For example:

W1---------E W-1--------E Car 1 moves from 1 to 2
W--1-------E Car 1 moves from 2 to 3
W---1------E Car 1 moves from 3 to 4
W----1-----E Car 1 moves from 4 to 5
W-----1----E Car 1 moves from 5 to 6
W------1---E Car 1 moves from 6 to 7
W-------1--E Car 1 moves from 7 to 8
W--------1-E Car 1 moves from 8 to 9
W---------1E Car 1 moves from 9 to 10
W----------E Car 1 exits road
W---------6E W--------6-E Car 6 moves from 10 to 9
W-------6--E Car 6 moves from 9 to 8
W------6---E Car 6 moves from 8 to 7
W-----6----E Car 6 moves from 7 to 6
W----6-----E Car 6 moves from 6 to 5
W---6------E Car 6 moves from 5 to 4
W--6-------E Car 6 moves from 4 to 3
W-6--------E Car 6 moves from 3 to 2

W6---------E Car 6 moves from 2 to 1
W----------E Car 6 exits road
W2---------E W-2--------E Car 2 moves from 1 to 2
W--2-------E Car 2 moves from 2 to 3
W---2------E Car 2 moves from 3 to 4
W----2-----E Car 2 moves from 4 to 5
W-----2----E Car 2 moves from 5 to 6
W------2---E Car 2 moves from 6 to 7
W-------2--E Car 2 moves from 7 to 8
W--------2-E Car 2 moves from 8 to 9
W---------2E Car 2 moves from 9 to 10
W----------E Car 2 exits road
W---------7E W--------7-E Car 7 moves from 10 to 9
W-------7--E Car 7 moves from 9 to 8
W------7---E Car 7 moves from 8 to 7
W-----7----E Car 7 moves from 7 to 6
W----7-----E Car 7 moves from 6 to 5
W---7------E Car 7 moves from 5 to 4
W--7-------E Car 7 moves from 4 to 3
W-7--------E Car 7 moves from 3 to 2
W7---------E Car 7 moves from 2 to 1
W----------E Car 7 exits road
W3---------E W-3--------E Car 3 moves from 1 to 2
W--3-------E Car 3 moves from 2 to 3
W---3------E Car 3 moves from 3 to 4
W----3-----E Car 3 moves from 4 to 5
W-----3----E Car 3 moves from 5 to 6
W------3---E Car 3 moves from 6 to 7
W-------3--E Car 3 moves from 7 to 8
W--------3-E Car 3 moves from 8 to 9
W---------3E Car 3 moves from 9 to 10
W----------E Car 3 exits road
W---------8E W--------8-E Car 8 moves from 10 to 9
W-------8--E Car 8 moves from 9 to 8
W------8---E Car 8 moves from 8 to 7
W-----8----E Car 8 moves from 7 to 6
W----8-----E Car 8 moves from 6 to 5
W---8------E Car 8 moves from 5 to 4
W--8-------E Car 8 moves from 4 to 3
W-8--------E Car 8 moves from 3 to 2
W8---------E Car 8 moves from 2 to 1
W----------E Car 8 exits road
W4---------E W-4--------E Car 4 moves from 1 to 2
W--4-------E Car 4 moves from 2 to 3
W---4------E Car 4 moves from 3 to 4
W----4-----E Car 4 moves from 4 to 5

W-----4----E Car 4 moves from 5 to 6
W------4---E Car 4 moves from 6 to 7
W-------4--E Car 4 moves from 7 to 8
W--------4-E Car 4 moves from 8 to 9
W---------4E Car 4 moves from 9 to 10
W----------E Car 4 exits road
W---------9E W--------9-E Car 9 moves from 10 to 9
W-------9--E Car 9 moves from 9 to 8
W------9---E Car 9 moves from 8 to 7
W-----9----E Car 9 moves from 7 to 6
W----9-----E Car 9 moves from 6 to 5
W---9------E Car 9 moves from 5 to 4
W--9-------E Car 9 moves from 4 to 3
W-9--------E Car 9 moves from 3 to 2
W9---------E Car 9 moves from 2 to 1
W----------E Car 9 exits road
W5---------E W-5--------E Car 5 moves from 1 to 2
W--5-------E Car 5 moves from 2 to 3
W---5------E Car 5 moves from 3 to 4
W----5-----E Car 5 moves from 4 to 5
W-----5----E Car 5 moves from 5 to 6
W------5---E Car 5 moves from 6 to 7
W-------5--E Car 5 moves from 7 to 8
W--------5-E Car 5 moves from 8 to 9
W---------5E Car 5 moves from 9 to 10
W----------E Car 5 exits road
W---------10E W--------10-E Car 10 moves from 10 to 9
W-------10--E Car 10 moves from 9 to 8
W------10---E Car 10 moves from 8 to 7
W-----10----E Car 10 moves from 7 to 6
W----10-----E Car 10 moves from 6 to 5
W---10------E Car 10 moves from 5 to 4
W--10-------E Car 10 moves from 4 to 3
W-10--------E Car 10 moves from 3 to 2
W10---------E Car 10 moves from 2 to 1
W----------E Car 10 exits road

Test case 3:

```
void Main ()
{
  InitRoad ();

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 20);
```

```
    Exit ();
  }

  if (Fork () == 0) {
    Delay (1000);
    driveRoad (WEST, 20);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (1020);
    driveRoad (WEST, 20);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (1040);
    driveRoad (WEST, 20);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (1000);
    driveRoad (EAST, 20);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (1020);
    driveRoad (EAST, 20);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (1040);
    driveRoad (EAST, 20);
    Exit ();
  }

  driveRoad (WEST, 20);

  Exit ();
}
```

Expected result:

Car 1 and Car 2 will run on the road together. Whether the third car will enter the road from east or west is random. After the first car from east enters the road, the other cars will take turns to enter the road.

Below are two possible outputs. And there ARE other possible right outputs as well

Output 1:
W2---------E W-2--------E Car 2 moves from 1 to 2
W12--------E W1-2-------E Car 2 moves from 2 to 3
W-12-------E Car 1 moves from 1 to 2
W-1-2------E Car 2 moves from 3 to 4
W--12------E Car 1 moves from 2 to 3
W--1-2-----E Car 2 moves from 4 to 5
W---12-----E Car 1 moves from 3 to 4
W---1-2----E Car 2 moves from 5 to 6
W----12----E Car 1 moves from 4 to 5
W----1-2---E Car 2 moves from 6 to 7
W3---1-2---E W3----12---E Car 1 moves from 5 to 6
W3----1-2--E Car 2 moves from 7 to 8
W-3---1-2--E Car 3 moves from 1 to 2
W-3----12--E Car 1 moves from 6 to 7
W-3----1-2-E Car 2 moves from 8 to 9
W--3---1-2-E Car 3 moves from 2 to 3
W--3----12-E Car 1 moves from 7 to 8
W--3----1-2E Car 2 moves from 9 to 10
W---3---1-2E Car 3 moves from 3 to 4
W---3----12E Car 1 moves from 8 to 9
W---3----1-E Car 2 exits road
W----3---1-E Car 3 moves from 4 to 5
W----3----1E Car 1 moves from 9 to 10
W-----3---1E Car 3 moves from 5 to 6
W-----3----E Car 1 exits road
W------3---E Car 3 moves from 6 to 7
W-------3--E Car 3 moves from 7 to 8
W--------3-E Car 3 moves from 8 to 9
W---------3E Car 3 moves from 9 to 10
W----------E Car 3 exits road
W---------6E W--------6-E Car 6 moves from 10 to 9
W-------6--E Car 6 moves from 9 to 8
W------6---E Car 6 moves from 8 to 7
W-----6----E Car 6 moves from 7 to 6
W----6-----E Car 6 moves from 6 to 5
W---6------E Car 6 moves from 5 to 4
W--6-------E Car 6 moves from 4 to 3
W-6--------E Car 6 moves from 3 to 2
W6---------E Car 6 moves from 2 to 1
W----------E Car 6 exits road
W4---------E W-4--------E Car 4 moves from 1 to 2
W--4-------E Car 4 moves from 2 to 3

W---4------E Car 4 moves from 3 to 4
W----4-----E Car 4 moves from 4 to 5
W-----4----E Car 4 moves from 5 to 6
W------4---E Car 4 moves from 6 to 7
W-------4--E Car 4 moves from 7 to 8
W--------4-E Car 4 moves from 8 to 9
W---------4E Car 4 moves from 9 to 10
W----------E Car 4 exits road
W---------7E W--------7-E Car 7 moves from 10 to 9
W-------7--E Car 7 moves from 9 to 8
W------7---E Car 7 moves from 8 to 7
W-----7----E Car 7 moves from 7 to 6
W----7-----E Car 7 moves from 6 to 5
W---7------E Car 7 moves from 5 to 4
W--7-------E Car 7 moves from 4 to 3
W-7--------E Car 7 moves from 3 to 2
W7---------E Car 7 moves from 2 to 1
W----------E Car 7 exits road
W5---------E W-5--------E Car 5 moves from 1 to 2
W--5-------E Car 5 moves from 2 to 3
W---5------E Car 5 moves from 3 to 4
W----5-----E Car 5 moves from 4 to 5
W-----5----E Car 5 moves from 5 to 6
W------5---E Car 5 moves from 6 to 7
W-------5--E Car 5 moves from 7 to 8
W--------5-E Car 5 moves from 8 to 9
W---------5E Car 5 moves from 9 to 10
W----------E Car 5 exits road
W---------8E W--------8-E Car 8 moves from 10 to 9
W-------8--E Car 8 moves from 9 to 8
W------8---E Car 8 moves from 8 to 7
W-----8----E Car 8 moves from 7 to 6
W----8-----E Car 8 moves from 6 to 5
W---8------E Car 8 moves from 5 to 4
W--8-------E Car 8 moves from 4 to 3
W-8--------E Car 8 moves from 3 to 2
W8---------E Car 8 moves from 2 to 1
W----------E Car 8 exits road

Output 2:

W1---------E W-1--------E Car 1 moves from 1 to 2
W21--------E W2-1-------E Car 1 moves from 2 to 3
W-21-------E Car 2 moves from 1 to 2
W-2-1------E Car 1 moves from 3 to 4
W--21------E Car 2 moves from 2 to 3

W--2-1-----E Car 1 moves from 4 to 5
W---21-----E Car 2 moves from 3 to 4
W---2-1----E Car 1 moves from 5 to 6
W----21----E Car 2 moves from 4 to 5
W----2-1---E Car 1 moves from 6 to 7
W-----21---E Car 2 moves from 5 to 6
W-----2-1--E Car 1 moves from 7 to 8
W------21--E Car 2 moves from 6 to 7
W------2-1-E Car 1 moves from 8 to 9
W-------21-E Car 2 moves from 7 to 8
W-------2-1E Car 1 moves from 9 to 10
W--------21E Car 2 moves from 8 to 9
W--------2-E Car 1 exits road
W---------2E Car 2 moves from 9 to 10
W----------E Car 2 exits road
W---------6E W--------6-E Car 6 moves from 10 to 9
W-------6--E Car 6 moves from 9 to 8
W------6---E Car 6 moves from 8 to 7
W-----6----E Car 6 moves from 7 to 6
W----6-----E Car 6 moves from 6 to 5
W---6------E Car 6 moves from 5 to 4
W--6-------E Car 6 moves from 4 to 3
W-6--------E Car 6 moves from 3 to 2
W6---------E Car 6 moves from 2 to 1
W----------E Car 6 exits road
W4---------E W-4--------E Car 4 moves from 1 to 2
W--4-------E Car 4 moves from 2 to 3
W---4------E Car 4 moves from 3 to 4
W----4-----E Car 4 moves from 4 to 5
W-----4----E Car 4 moves from 5 to 6
W------4---E Car 4 moves from 6 to 7
W-------4--E Car 4 moves from 7 to 8
W--------4-E Car 4 moves from 8 to 9
W---------4E Car 4 moves from 9 to 10
W----------E Car 4 exits road
W---------7E W--------7-E Car 7 moves from 10 to 9
W-------7--E Car 7 moves from 9 to 8
W------7---E Car 7 moves from 8 to 7
W-----7----E Car 7 moves from 7 to 6
W----7-----E Car 7 moves from 6 to 5
W---7------E Car 7 moves from 5 to 4
W--7-------E Car 7 moves from 4 to 3
W-7--------E Car 7 moves from 3 to 2
W7---------E Car 7 moves from 2 to 1
W----------E Car 7 exits road
W3---------E W-3--------E Car 3 moves from 1 to 2

W--3-------E Car 3 moves from 2 to 3
W---3------E Car 3 moves from 3 to 4
W----3-----E Car 3 moves from 4 to 5
W-----3----E Car 3 moves from 5 to 6
W------3---E Car 3 moves from 6 to 7
W-------3--E Car 3 moves from 7 to 8
W--------3-E Car 3 moves from 8 to 9
W---------3E Car 3 moves from 9 to 10
W----------E Car 3 exits road
W---------8E W--------8-E Car 8 moves from 10 to 9
W-------8--E Car 8 moves from 9 to 8
W------8---E Car 8 moves from 8 to 7
W-----8----E Car 8 moves from 7 to 6
W----8-----E Car 8 moves from 6 to 5
W---8------E Car 8 moves from 5 to 4
W--8-------E Car 8 moves from 4 to 3
W-8--------E Car 8 moves from 3 to 2
W8---------E Car 8 moves from 2 to 1
W----------E Car 8 exits road
W5---------E W-5--------E Car 5 moves from 1 to 2
W--5-------E Car 5 moves from 2 to 3
W---5------E Car 5 moves from 3 to 4
W----5-----E Car 5 moves from 4 to 5
W-----5----E Car 5 moves from 5 to 6
W------5---E Car 5 moves from 6 to 7
W-------5--E Car 5 moves from 7 to 8
W--------5-E Car 5 moves from 8 to 9
W---------5E Car 5 moves from 9 to 10
W----------E Car 5 exits road

Test case 4:

```
void Main ()
{
  InitRoad ();

  if (Fork () == 0) {
    Delay (0);
    driveRoad (WEST, 50);
    Exit ();
  }

  if (Fork () == 0) {
    Delay (100);
    driveRoad (EAST, 20);
    Exit ();
  }
```

```
  if (Fork () == 0) {
    Delay (100);
    driveRoad (EAST, 20);
    Exit ();
  }

  driveRoad (WEST, 1);

  Exit ();
}
```

Expected result:
Car 2 won't enter until a car from east exits. Since when car 2 arrives, car 1 is still at the first position. So it has to wait.
Below is one possible output.

W1---------E W-1--------E Car 1 moves from 1 to 2
W--1-------E Car 1 moves from 2 to 3
W---1------E Car 1 moves from 3 to 4
W----1-----E Car 1 moves from 4 to 5
W-----1----E Car 1 moves from 5 to 6
W------1---E Car 1 moves from 6 to 7
W-------1--E Car 1 moves from 7 to 8
W--------1-E Car 1 moves from 8 to 9
W---------1E Car 1 moves from 9 to 10
W----------E Car 1 exits road
W---------4E W--------4-E Car 4 moves from 10 to 9
W-------4--E Car 4 moves from 9 to 8
W------4---E Car 4 moves from 8 to 7
W-----4----E Car 4 moves from 7 to 6
W----4-----E Car 4 moves from 6 to 5
W---4------E Car 4 moves from 5 to 4
W--4-------E Car 4 moves from 4 to 3
W-4--------E Car 4 moves from 3 to 2
W4---------E Car 4 moves from 2 to 1
W----------E Car 4 exits road
W2---------E W-2--------E Car 2 moves from 1 to 2
W--2-------E Car 2 moves from 2 to 3
W---2------E Car 2 moves from 3 to 4
W----2-----E Car 2 moves from 4 to 5
W-----2----E Car 2 moves from 5 to 6
W------2---E Car 2 moves from 6 to 7
W-------2--E Car 2 moves from 7 to 8
W--------2-E Car 2 moves from 8 to 9
W---------2E Car 2 moves from 9 to 10
W----------E Car 2 exits road

W---------3E W--------3-E Car 3 moves from 10 to 9
W-------3--E Car 3 moves from 9 to 8
W------3---E Car 3 moves from 8 to 7
W-----3----E Car 3 moves from 7 to 6
W----3-----E Car 3 moves from 6 to 5
W---3------E Car 3 moves from 5 to 4
W--3-------E Car 3 moves from 4 to 3
W-3--------E Car 3 moves from 3 to 2
W3---------E Car 3 moves from 2 to 1
W----------E Car 3 exits road

Test case 5:

```
void Main ()
{
  int i;

  InitRoad ();

  driveRoad (WEST, 50);

  for (i=0; i<5; i++) {

    if (Fork () == 0) {
      Delay (0);
      driveRoad (WEST, 50);
      Exit ();
    }

    if (Fork () == 0) {
      Delay (0);
      driveRoad (WEST, 50);
      Exit ();
    }

    if (Fork () == 0) {
      Delay (0);
      driveRoad (WEST, 50);
      Exit ();
    }

    if (Fork () == 0) {
      Delay (0);
      driveRoad (EAST, 50);
      Exit ();
    }

    if (Fork () == 0) {
```

```
      Delay (0);
      driveRoad (EAST, 50);
      Exit ();
    }

    if (Fork () == 0) {
      Delay (0);
      driveRoad (EAST, 50);
      Exit ();
    }

    Delay(4000);
  }

  Exit ();
}
```

Expect result:

After car 1 exits, car 2 will enter the road, and all the cars from each sides will take turns to run.