```
procedure Partition(S         : in out Sequence;
                    F, L      : in Coordinate;
                    Middle    : out Coordinate;
                    Middle_OK : out Boolean) is
  First : Coordinate := F;
  Last  : Coordinate := L;
begin
  loop
    loop
      if First = Last then
        Middle := First;
        Middle_OK := Test(S, First);
        return;
      end if;
      exit when not Test(S, First);
      First := Next(First);
    end loop;
    loop
      exit when Test(S, Last);
      Last := Prev(Last);
      if First = Last then
        Middle := First;
        Middle_OK := False;
        return;
      end if;
    end loop;
    Swap(S, First, Last);
    First := Next(First);
    if First = Last then
      Middle := First;
      Middle_OK := False;
      return;
    end if;
    Last := Prev(Last);
  end loop;
end Partition;
```

Figure 1: Body of Partition Algorithm