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| OSP | 2013 |

1. No 26

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| Bila diberi masukan bilangan 77, maka program akan memberikan keluaran …? |
| var N,hasil: integer;  procedure solve(X:integer);  begin if (X>1) then  begin  hasil:=hasil+1;  solve(X div 2 + X mod 2);  end;  end;  begin  readln(N);  hasil:=0;  solve(N);  writeln(hasil);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var N,hasil: integer;  procedure solve(X:integer);  begin  if (x>1) then  begin  hasil:=hasil+1;  writeln(x:5,(x div 2):5,(x mod 2):6,((x div 2) + (x mod 2)):6,hasil:7);  solve(X div 2 + X mod 2);  end;  end;  begin  N:=77;  writeln('x':5,'div':6,'mod':6,'div+mod':8,'hasil':6);  solve(N);  writeln('Hasilnya adalah : ',hasil);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| x div mod div+mod hasil  77 38 1 39 1  39 19 1 20 2  20 10 0 10 3  10 5 0 5 4  5 2 1 3 5  3 1 1 2 6  2 1 0 1 7  Hasilnya adalah : 7 |

1. No 27.

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| Jika program di atas diberi masukan ‘s4yA-BuK4N+oRanG aLaY!?’, maka keluarannya adalah …? |
| base := ‘QWERTYUIOPLKJHGFDSAZXCVBNM’;  kata := ‘’;  readln(kalimat);  for i:= length(kalimat) downto 1 do  begin  if pos(kalimat[i], base) > 0 then  kata:= kata & kalimat[i];  end;  writeln(kata); |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var  kalimat,kata,base : String;  i : integer;  begin  base := 'QWERTYUIOPLKJHGFDSAZXCVBNM';  kata := '';  kalimat :='s4yA-BuK4N+oRanG aLaY!?';  for i:= length(kalimat) downto 1 do  begin  if pos (kalimat[i], base) > 0 then  kata:= kata + kalimat[i];  writeln(kata);  end;  writeln(‘Hasilnya adalah : ’,kata);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| Y  Y  YL  YL  YL  YLG  YLG  YLG  YLGR  YLGR  YLGR  YLGRN  YLGRN  YLGRNK  YLGRNK  YLGRNKB  YLGRNKB  YLGRNKBA  YLGRNKBA  YLGRNKBA  YLGRNKBA  Hasilnya adalah : YLGRNKBA |

1. No 28.

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| Berapa kalikah kibo(3) dipanggil saat pemanggilan kibo(7) ? {tuliskan angkanya} |
| function kibo(n: integer):integer;  begin  if (n = 2) or (n = 1) or (n = 0) then kibo := n  else kibo := kibo(n-1) + kibo(n-3);  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses crt;  var  P: integer;  function kibo(n:integer):integer;  begin  writeln((n=2):0,(n-1):15,(n=0):15);  if (n = 2) or (n = 1) or (n = 0) then  kibo := n  else  kibo := kibo(n-1) + kibo(n-3);  end;  begin  p:=7;  writeln('Kibo n=2 ':0,'Kibo n=1 ':15,'Kibo n=0 ':15);  P:=kibo(P);  writeln(‘HASIL : ’,P);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| Kibo n=2 Kibo n=1 Kibo n=0  FALSE 6 FALSE  FALSE 5 FALSE  FALSE 4 FALSE  FALSE 3 FALSE  FALSE 2 FALSE  TRUE 1 FALSE  FALSE -1 TRUE  FALSE 0 FALSE  TRUE 1 FALSE  FALSE 2 FALSE  TRUE 1 FALSE  FALSE -1 TRUE  FALSE 3 FALSE  FALSE 2 FALSE  TRUE 1 FALSE  FALSE -1 TRUE  FALSE 0 FALSE  HASIL : 10 |

1. No 29.

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| Apakah keluaran dari program tersebut? |
| var  we: longint;  Z: array[1..15] of longint = (64, 19, 56, 67, 66, 82,  31, 20, 67, 10, 94, 100, 57, 14, 86);  function f(x: longint; y: longint): longint;  var  a, b: longint;  begin  if (x = y) then  f := Z[y]  else begin  a := f(x, (x+y) div 2);  b := f((x+y) div 2+1, y);  if (a < b) then f := a  else f := b  end  end;  begin  we := f(3,11);  writeln(we);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var  we: longint;  Z: array[1..15] of longint;  function f(x: longint; y: longint): longint;  var  a, b: longint;  begin  Z[1]:=64;  Z[2]:=19;  Z[3]:=56;  Z[4]:=67;  Z[5]:=66;  Z[6]:=82;  Z[7]:=31;  Z[8]:=20;  Z[9]:=67;  Z[10]:=10;  Z[11]:=94;  Z[12]:=100;  Z[13]:=57;  Z[14]:=14;  Z[15]:=86;  writeln('X ',(x):1,'Y ':15,((x+y) div 2):1,'X ':15,((x+y) div 2+(1)):1,'Y ':15,(y):1);  if (x = y) then  f := Z[y]  else begin  a := f(x, (x+y) div 2);  b := f((x+y) div 2+1, y);  writeln(' A : ':10,a:2,'B : ':30,b:2);  if (a < b) then f := a  else f := b  end  end;  begin  writeln('(x)':2,'((x+y) div 2)':20,'((x+y) div 2+(1))':20,'(y)':8);  we := f(3,11);  writeln('Hasilnya adalah : ',we);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| (x) ((x+y) div 2) ((x+y) div 2+(1)) (y)  X 3 Y 7 X 8 Y 11  X 3 Y 5 X 6 Y 7  X 3 Y 4 X 5 Y 5  X 3 Y 3 X 4 Y 4  X 3 Y 3 X 4 Y 3  X 4 Y 4 X 5 Y 4  A : 56 B : 67  X 5 Y 5 X 6 Y 5  A : 56 B : 66  X 6 Y 6 X 7 Y 7  X 6 Y 6 X 7 Y 6  X 7 Y 7 X 8 Y 7  A : 82 B : 31  A : 56 B : 31  X 8 Y 9 X 10 Y 11  X 8 Y 8 X 9 Y 9  X 8 Y 8 X 9 Y 8  X 9 Y 9 X 10 Y 9  A : 20 B : 67  X 10 Y 10 X 11 Y 11  X 10 Y 10 X 11 Y 10  X 11 Y 11 X 12 Y 11  A : 10 B : 94  A : 20 B : 10  A : 31 B : 10  Hasilnya adalah : 10 |

1. No 30

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| Apakah yang akan tercetak dari hasil pemanggilan perintah writeln(cl,',',cr)? |
| Var  s:string;  cl,cr:integer;  procedure right(l, r : integer);  forward;  procedure swap(l, r : integer);  var  c : char;  begin  if (l>=1) and (r<=length(s)) then  begin  c:=s[l];  s[l]:=s[r];  s[r]:=c;  end;  end;  procedure left(l, r : integer);  begin  inc(cl);  swap(l,r);  if (r<length(s)) then  procedure left(l, r : integer);  begin  inc(cl);  swap(l,r);  if (r<length(s)) then  right(l,r+1);  end;  procedure right(l, r : integer);  begin  inc(cr);  swap(l,r);  if (l>1) then  left(l-1,r);  end;  begin  s:='gogetgold';  left(9,1);  writeln(s);  writeln(cl,',',cr);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var  s:string;  cl,cr:integer;  procedure right(l, r : integer);  forward;  procedure swap(l, r : integer);  var  c : char;  begin  if (l>=1) and (r<=length(s)) then  begin  c:=s[l];  s[l]:=s[r];  s[r]:=c;  writeln(s);  end;  end;  procedure left(l, r : integer);  begin  inc(cl);  swap(l,r);  if (r<length(s)) then  right(l,r+1);  end;  procedure right(l, r : integer);  begin  inc(cr);  swap(l,r);  if (l>1) then  left(l-1,r);  end;  begin  s:='gogetgold';  left(9,1);  writeln(s);  writeln(cl,',',cr);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| Output Program.  dogetgolg  dggetgolo  dlgetgogo  dlgetgogo  dloetgggo  dlogtgego  dlogtgego  dloggtego  dloggtego  dlogtgego  dlogtgego  dloetgggo  dlgetgogo  dlgetgogo  dggetgolo  dogetgolg  gogetgold  gogetgold  9,8 |

1. No 31

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| Jika perintah left(9,1) diganti dengan left(5,5), apakah yang akan tercetak dari hasil pemanggilan perintah writeln(s)? |
| Var  s:string;  cl,cr:integer;  procedure right(l, r : integer);  forward;  procedure swap(l, r : integer);  var  c : char;  begin  if (l>=1) and (r<=length(s)) then  begin  c:=s[l];  s[l]:=s[r];  s[r]:=c;  end;  end;  procedure left(l, r : integer);  begin  inc(cl);  swap(l,r);  if (r<length(s)) then  procedure left(l, r : integer);  begin  inc(cl);  swap(l,r);  if (r<length(s)) then  right(l,r+1);  end;  procedure right(l, r : integer);  begin  inc(cr);  swap(l,r);  if (l>1) then  left(l-1,r);  end;  begin  s:='gogetgold';  left(9,1);  writeln(s);  writeln(cl,',',cr);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var  s:string;  cl,cr:integer;  procedure right(l, r : integer);  forward;  procedure swap(l, r : integer);  var  c : char;  begin  if (l>=1) and (r<=length(s)) then  begin  c:=s[l];  s[l]:=s[r];  s[r]:=c;  writeln(s);  end;  end;  procedure left(l, r : integer);  begin  inc(cl);  swap(l,r);  if (r<length(s)) then  right(l,r+1);  end;  procedure right(l, r : integer);  begin  inc(cr);  swap(l,r);  if (l>1) then  left(l-1,r);  end;  begin  s:='gogetgold';  left(5,5);  writeln(s);  writeln(cl,',',cr);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| left(5.5)  prosesnya sama seperti no.30. dan hasil dari left (5.5) adalah  (s) : 'tdlogegog'  cl : 5  cr : 4  Output Program.  gogetgold  gogegtold  gogtgeold  gogogetld  gotogegld  gologegtd  gtlogegod  gdlogegot  tdlogegog  tdlogegog  5,4 |

1. No 32.

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| Bila kita memanggil prosedur tulis(30,30), berapakah jumlah ‘\*’ yang tertulis? { |
| procedure tulis(n,m:integer);  var  i,j,k:integer;  begin  for i:=1 to n do  begin  for j:=1 to (n div m) do  for k:=1 to m do  writeln('\*');  for j:=1 to (n mod m) do  writeln('-');  end;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| Uses wincrt;  procedure tulis(n,m:integer);  var  i,j,k:integer;  begin  for i:=1 to n do  begin  for j:=1 to (n div m) do  for k:=1 to m do  writeln('i = ':10,i:1,' \*','j = ':10,j:1,' \*','k = ':10,k:1,' \*');  for j:=1 to (n mod m) do  writeln('-');  end;  end;  var  P,L: integer;  begin  P:=30;  L:=30;  tulis(P,L);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| I J K  i = 1 \* j = 1 \* k = 1 \*  i = 1 \* j = 1 \* k = 2 \*  i = 1 \* j = 1 \* k = 3 \*  i = 1 \* j = 1 \* k = 4 \*  i = 1 \* j = 1 \* k = 5 \*  i = 1 \* j = 1 \* k = 6 \*  i = 1 \* j = 1 \* k = 7 \*  i = 1 \* j = 1 \* k = 8 \*  i = 1 \* j = 1 \* k = 9 \*  i = 1 \* j = 1 \* k = 10 \*  i = 1 \* j = 1 \* k = 11 \*  i = 1 \* j = 1 \* k = 12 \*  i = 1 \* j = 1 \* k = 13 \*  i = 1 \* j = 1 \* k = 14 \*  i = 1 \* j = 1 \* k = 15 \*  i = 1 \* j = 1 \* k = 16 \*  i = 1 \* j = 1 \* k = 17 \*  i = 1 \* j = 1 \* k = 18 \*  i = 1 \* j = 1 \* k = 19 \*  i = 1 \* j = 1 \* k = 20 \*  i = 1 \* j = 1 \* k = 21 \*  i = 1 \* j = 1 \* k = 22 \*  i = 1 \* j = 1 \* k = 23 \*  i = 1 \* j = 1 \* k = 24 \*  i = 1 \* j = 1 \* k = 25 \*  i = 1 \* j = 1 \* k = 26 \*  i = 1 \* j = 1 \* k = 27 \*  i = 1 \* j = 1 \* k = 28 \*  i = 1 \* j = 1 \* k = 29 \*  i = 1 \* j = 1 \* k = 30 \*  i = 2 \* j = 1 \* k = 1 \*  i = 2 \* j = 1 \* k = 2 \*  i = 2 \* j = 1 \* k = 3 \*  i = 2 \* j = 1 \* k = 4 \*  i = 2 \* j = 1 \* k = 5 \*  i = 2 \* j = 1 \* k = 6 \*  i = 2 \* j = 1 \* k = 7 \*  i = 2 \* j = 1 \* k = 8 \*  i = 2 \* j = 1 \* k = 9 \*  i = 2 \* j = 1 \* k = 10 \*  i = 2 \* j = 1 \* k = 11 \*  i = 2 \* j = 1 \* k = 12 \*  i = 2 \* j = 1 \* k = 13 \*  i = 2 \* j = 1 \* k = 14 \*  i = 2 \* j = 1 \* k = 15 \*  i = 2 \* j = 1 \* k = 16 \*  i = 2 \* j = 1 \* k = 17 \*  i = 2 \* j = 1 \* k = 18 \*  i = 2 \* j = 1 \* k = 19 \*  i = 2 \* j = 1 \* k = 20 \*  i = 2 \* j = 1 \* k = 21 \*  i = 2 \* j = 1 \* k = 22 \*  i = 2 \* j = 1 \* k = 23 \*  i = 2 \* j = 1 \* k = 24 \*  i = 2 \* j = 1 \* k = 25 \*  i = 2 \* j = 1 \* k = 26 \*  i = 2 \* j = 1 \* k = 27 \*  i = 2 \* j = 1 \* k = 28 \*  i = 2 \* j = 1 \* k = 29 \*  i = 2 \* j = 1 \* k = 30 \*  i = 3 \* j = 1 \* k = 1 \*  i = 3 \* j = 1 \* k = 2 \*  i = 3 \* j = 1 \* k = 3 \*  i = 3 \* j = 1 \* k = 4 \*  i = 3 \* j = 1 \* k = 5 \*  i = 3 \* j = 1 \* k = 6 \*  i = 3 \* j = 1 \* k = 7 \*  i = 3 \* j = 1 \* k = 8 \*  i = 3 \* j = 1 \* k = 9 \*  i = 3 \* j = 1 \* k = 10 \*  i = 3 \* j = 1 \* k = 11 \*  i = 3 \* j = 1 \* k = 12 \*  i = 3 \* j = 1 \* k = 13 \*  i = 3 \* j = 1 \* k = 14 \*  i = 3 \* j = 1 \* k = 15 \*  i = 3 \* j = 1 \* k = 16 \*  i = 3 \* j = 1 \* k = 17 \*  i = 3 \* j = 1 \* k = 18 \*  i = 3 \* j = 1 \* k = 19 \*  i = 3 \* j = 1 \* k = 20 \*  i = 3 \* j = 1 \* k = 21 \*  i = 3 \* j = 1 \* k = 22 \*  i = 3 \* j = 1 \* k = 23 \*  i = 3 \* j = 1 \* k = 24 \*  i = 3 \* j = 1 \* k = 25 \*  i = 3 \* j = 1 \* k = 26 \*  i = 3 \* j = 1 \* k = 27 \*  i = 3 \* j = 1 \* k = 28 \*  i = 3 \* j = 1 \* k = 29 \*  i = 3 \* j = 1 \* k = 30 \*  i = 4 \* j = 1 \* k = 1 \*  i = 4 \* j = 1 \* k = 2 \*  i = 4 \* j = 1 \* k = 3 \*  i = 4 \* j = 1 \* k = 4 \*  i = 4 \* j = 1 \* k = 5 \*  i = 4 \* j = 1 \* k = 6 \*  i = 4 \* j = 1 \* k = 7 \*  i = 4 \* j = 1 \* k = 8 \*  i = 4 \* j = 1 \* k = 9 \*  i = 4 \* j = 1 \* k = 10 \*  i = 4 \* j = 1 \* k = 11 \*  i = 4 \* j = 1 \* k = 12 \*  i = 4 \* j = 1 \* k = 13 \*  i = 4 \* j = 1 \* k = 14 \*  i = 4 \* j = 1 \* k = 15 \*  i = 4 \* j = 1 \* k = 16 \*  i = 4 \* j = 1 \* k = 17 \*  i = 4 \* j = 1 \* k = 18 \*  i = 4 \* j = 1 \* k = 19 \*  i = 4 \* j = 1 \* k = 20 \*  i = 4 \* j = 1 \* k = 21 \*  i = 4 \* j = 1 \* k = 22 \*  i = 4 \* j = 1 \* k = 23 \*  i = 4 \* j = 1 \* k = 24 \*  i = 4 \* j = 1 \* k = 25 \*  i = 4 \* j = 1 \* k = 26 \*  i = 4 \* j = 1 \* k = 27 \*  i = 4 \* j = 1 \* k = 28 \*  i = 4 \* j = 1 \* k = 29 \*  i = 4 \* j = 1 \* k = 30 \*  i = 5 \* j = 1 \* k = 1 \*  i = 5 \* j = 1 \* k = 2 \*  i = 5 \* j = 1 \* k = 3 \*  i = 5 \* j = 1 \* k = 4 \*  i = 5 \* j = 1 \* k = 5 \*  i = 5 \* j = 1 \* k = 6 \*  i = 5 \* j = 1 \* k = 7 \*  i = 5 \* j = 1 \* k = 8 \*  i = 5 \* j = 1 \* k = 9 \*  i = 5 \* j = 1 \* k = 10 \*  i = 5 \* j = 1 \* k = 11 \*  i = 5 \* j = 1 \* k = 12 \*  i = 5 \* j = 1 \* k = 13 \*  i = 5 \* j = 1 \* k = 14 \*  i = 5 \* j = 1 \* k = 15 \*  i = 5 \* j = 1 \* k = 16 \*  i = 5 \* j = 1 \* k = 17 \*  i = 5 \* j = 1 \* k = 18 \*  i = 5 \* j = 1 \* k = 19 \*  i = 5 \* j = 1 \* k = 20 \*  i = 5 \* j = 1 \* k = 21 \*  i = 5 \* j = 1 \* k = 22 \*  i = 5 \* j = 1 \* k = 23 \*  i = 5 \* j = 1 \* k = 24 \*  i = 5 \* j = 1 \* k = 25 \*  i = 5 \* j = 1 \* k = 26 \*  i = 5 \* j = 1 \* k = 27 \*  i = 5 \* j = 1 \* k = 28 \*  i = 5 \* j = 1 \* k = 29 \*  i = 5 \* j = 1 \* k = 30 \*  i = 6 \* j = 1 \* k = 1 \*  i = 6 \* j = 1 \* k = 2 \*  i = 6 \* j = 1 \* k = 3 \*  i = 6 \* j = 1 \* k = 4 \*  i = 6 \* j = 1 \* k = 5 \*  i = 6 \* j = 1 \* k = 6 \*  i = 6 \* j = 1 \* k = 7 \*  i = 6 \* j = 1 \* k = 8 \*  i = 6 \* j = 1 \* k = 9 \*  i = 6 \* j = 1 \* k = 10 \*  i = 6 \* j = 1 \* k = 11 \*  i = 6 \* j = 1 \* k = 12 \*  i = 6 \* j = 1 \* k = 13 \*  i = 6 \* j = 1 \* k = 14 \*  i = 6 \* j = 1 \* k = 15 \*  i = 6 \* j = 1 \* k = 16 \*  i = 6 \* j = 1 \* k = 17 \*  i = 6 \* j = 1 \* k = 18 \*  i = 6 \* j = 1 \* k = 19 \*  i = 6 \* j = 1 \* k = 20 \*  i = 6 \* j = 1 \* k = 21 \*  i = 6 \* j = 1 \* k = 22 \*  i = 6 \* j = 1 \* k = 23 \*  i = 6 \* j = 1 \* k = 24 \*  i = 6 \* j = 1 \* k = 25 \*  i = 6 \* j = 1 \* k = 26 \*  i = 6 \* j = 1 \* k = 27 \*  i = 6 \* j = 1 \* k = 28 \*  i = 6 \* j = 1 \* k = 29 \*  i = 6 \* j = 1 \* k = 30 \*  i = 7 \* j = 1 \* k = 1 \*  i = 7 \* j = 1 \* k = 2 \*  i = 7 \* j = 1 \* k = 3 \*  i = 7 \* j = 1 \* k = 4 \*  i = 7 \* j = 1 \* k = 5 \*  i = 7 \* j = 1 \* k = 6 \*  i = 7 \* j = 1 \* k = 7 \*  i = 7 \* j = 1 \* k = 8 \*  i = 7 \* j = 1 \* k = 9 \*  i = 7 \* j = 1 \* k = 10 \*  i = 7 \* j = 1 \* k = 11 \*  i = 7 \* j = 1 \* k = 12 \*  i = 7 \* j = 1 \* k = 13 \*  i = 7 \* j = 1 \* k = 14 \*  i = 7 \* j = 1 \* k = 15 \*  i = 7 \* j = 1 \* k = 16 \*  i = 7 \* j = 1 \* k = 17 \*  i = 7 \* j = 1 \* k = 18 \*  i = 7 \* j = 1 \* k = 19 \*  i = 7 \* j = 1 \* k = 20 \*  i = 7 \* j = 1 \* k = 21 \*  i = 7 \* j = 1 \* k = 22 \*  i = 7 \* j = 1 \* k = 23 \*  i = 7 \* j = 1 \* k = 24 \*  i = 7 \* j = 1 \* k = 25 \*  i = 7 \* j = 1 \* k = 26 \*  i = 7 \* j = 1 \* k = 27 \*  i = 7 \* j = 1 \* k = 28 \*  i = 7 \* j = 1 \* k = 29 \*  i = 7 \* j = 1 \* k = 30 \*  i = 8 \* j = 1 \* k = 1 \*  i = 8 \* j = 1 \* k = 2 \*  i = 8 \* j = 1 \* k = 3 \*  i = 8 \* j = 1 \* k = 4 \*  i = 8 \* j = 1 \* k = 5 \*  i = 8 \* j = 1 \* k = 6 \*  i = 8 \* j = 1 \* k = 7 \*  i = 8 \* j = 1 \* k = 8 \*  i = 8 \* j = 1 \* k = 9 \*  i = 8 \* j = 1 \* k = 10 \*  i = 8 \* j = 1 \* k = 11 \*  i = 8 \* j = 1 \* k = 12 \*  i = 8 \* j = 1 \* k = 13 \*  i = 8 \* j = 1 \* k = 14 \*  i = 8 \* j = 1 \* k = 15 \*  i = 8 \* j = 1 \* k = 16 \*  i = 8 \* j = 1 \* k = 17 \*  i = 8 \* j = 1 \* k = 18 \*  i = 8 \* j = 1 \* k = 19 \*  i = 8 \* j = 1 \* k = 20 \*  i = 8 \* j = 1 \* k = 21 \*  i = 8 \* j = 1 \* k = 22 \*  i = 8 \* j = 1 \* k = 23 \*  i = 8 \* j = 1 \* k = 24 \*  i = 8 \* j = 1 \* k = 25 \*  i = 8 \* j = 1 \* k = 26 \*  i = 8 \* j = 1 \* k = 27 \*  i = 8 \* j = 1 \* k = 28 \*  i = 8 \* j = 1 \* k = 29 \*  i = 8 \* j = 1 \* k = 30 \*  i = 9 \* j = 1 \* k = 1 \*  i = 9 \* j = 1 \* k = 2 \*  i = 9 \* j = 1 \* k = 3 \*  i = 9 \* j = 1 \* k = 4 \*  i = 9 \* j = 1 \* k = 5 \*  i = 9 \* j = 1 \* k = 6 \*  i = 9 \* j = 1 \* k = 7 \*  i = 9 \* j = 1 \* k = 8 \*  i = 9 \* j = 1 \* k = 9 \*  i = 9 \* j = 1 \* k = 10 \*  i = 9 \* j = 1 \* k = 11 \*  i = 9 \* j = 1 \* k = 12 \*  i = 9 \* j = 1 \* k = 13 \*  i = 9 \* j = 1 \* k = 14 \*  i = 9 \* j = 1 \* k = 15 \*  i = 9 \* j = 1 \* k = 16 \*  i = 9 \* j = 1 \* k = 17 \*  i = 9 \* j = 1 \* k = 18 \*  i = 9 \* j = 1 \* k = 19 \*  i = 9 \* j = 1 \* k = 20 \*  i = 9 \* j = 1 \* k = 21 \*  i = 9 \* j = 1 \* k = 22 \*  i = 9 \* j = 1 \* k = 23 \*  i = 9 \* j = 1 \* k = 24 \*  i = 9 \* j = 1 \* k = 25 \*  i = 9 \* j = 1 \* k = 26 \*  i = 9 \* j = 1 \* k = 27 \*  i = 9 \* j = 1 \* k = 28 \*  i = 9 \* j = 1 \* k = 29 \*  i = 9 \* j = 1 \* k = 30 \*  i = 10 \* j = 1 \* k = 1 \*  i = 10 \* j = 1 \* k = 2 \*  i = 10 \* j = 1 \* k = 3 \*  i = 10 \* j = 1 \* k = 4 \*  i = 10 \* j = 1 \* k = 5 \*  i = 10 \* j = 1 \* k = 6 \*  i = 10 \* j = 1 \* k = 7 \*  i = 10 \* j = 1 \* k = 8 \*  i = 10 \* j = 1 \* k = 9 \*  i = 10 \* j = 1 \* k = 10 \*  i = 10 \* j = 1 \* k = 11 \*  i = 10 \* j = 1 \* k = 12 \*  i = 10 \* j = 1 \* k = 13 \*  i = 10 \* j = 1 \* k = 14 \*  i = 10 \* j = 1 \* k = 15 \*  i = 10 \* j = 1 \* k = 16 \*  i = 10 \* j = 1 \* k = 17 \*  i = 10 \* j = 1 \* k = 18 \*  i = 10 \* j = 1 \* k = 19 \*  i = 10 \* j = 1 \* k = 20 \*  i = 10 \* j = 1 \* k = 21 \*  i = 10 \* j = 1 \* k = 22 \*  i = 10 \* j = 1 \* k = 23 \*  i = 10 \* j = 1 \* k = 24 \*  i = 10 \* j = 1 \* k = 25 \*  i = 10 \* j = 1 \* k = 26 \*  i = 10 \* j = 1 \* k = 27 \*  i = 10 \* j = 1 \* k = 28 \*  i = 10 \* j = 1 \* k = 29 \*  i = 10 \* j = 1 \* k = 30 \*  i = 11 \* j = 1 \* k = 1 \*  i = 11 \* j = 1 \* k = 2 \*  i = 11 \* j = 1 \* k = 3 \*  i = 11 \* j = 1 \* k = 4 \*  i = 11 \* j = 1 \* k = 5 \*  i = 11 \* j = 1 \* k = 6 \*  i = 11 \* j = 1 \* k = 7 \*  i = 11 \* j = 1 \* k = 8 \*  i = 11 \* j = 1 \* k = 9 \*  i = 11 \* j = 1 \* k = 10 \*  i = 11 \* j = 1 \* k = 11 \*  i = 11 \* j = 1 \* k = 12 \*  i 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1 \* k = 4 \*  i = 27 \* j = 1 \* k = 5 \*  i = 27 \* j = 1 \* k = 6 \*  i = 27 \* j = 1 \* k = 7 \*  i = 27 \* j = 1 \* k = 8 \*  i = 27 \* j = 1 \* k = 9 \*  i = 27 \* j = 1 \* k = 10 \*  i = 27 \* j = 1 \* k = 11 \*  i = 27 \* j = 1 \* k = 12 \*  i = 27 \* j = 1 \* k = 13 \*  i = 27 \* j = 1 \* k = 14 \*  i = 27 \* j = 1 \* k = 15 \*  i = 27 \* j = 1 \* k = 16 \*  i = 27 \* j = 1 \* k = 17 \*  i = 27 \* j = 1 \* k = 18 \*  i = 27 \* j = 1 \* k = 19 \*  i = 27 \* j = 1 \* k = 20 \*  i = 27 \* j = 1 \* k = 21 \*  i = 27 \* j = 1 \* k = 22 \*  i = 27 \* j = 1 \* k = 23 \*  i = 27 \* j = 1 \* k = 24 \*  i = 27 \* j = 1 \* k = 25 \*  i = 27 \* j = 1 \* k = 26 \*  i = 27 \* j = 1 \* k = 27 \*  i = 27 \* j = 1 \* k = 28 \*  i = 27 \* j = 1 \* k = 29 \*  i = 27 \* j = 1 \* k = 30 \*  i = 28 \* j = 1 \* k = 1 \*  i = 28 \* j = 1 \* k = 2 \*  i = 28 \* j = 1 \* k = 3 \*  i = 28 \* j = 1 \* k = 4 \*  i = 28 \* j = 1 \* k = 5 \*  i = 28 \* j = 1 \* k = 6 \*  i = 28 \* j = 1 \* k = 7 \*  i = 28 \* j = 1 \* k = 8 \*  i = 28 \* j = 1 \* k = 9 \*  i = 28 \* j = 1 \* k = 10 \*  i = 28 \* j = 1 \* k = 11 \*  i = 28 \* j = 1 \* k = 12 \*  i = 28 \* j = 1 \* k = 13 \*  i = 28 \* j = 1 \* k = 14 \*  i = 28 \* j = 1 \* k = 15 \*  i = 28 \* j = 1 \* k = 16 \*  i = 28 \* j = 1 \* k = 17 \*  i = 28 \* j = 1 \* k = 18 \*  i = 28 \* j = 1 \* k = 19 \*  i = 28 \* j = 1 \* k = 20 \*  i = 28 \* j = 1 \* k = 21 \*  i = 28 \* j = 1 \* k = 22 \*  i = 28 \* j = 1 \* k = 23 \*  i = 28 \* j = 1 \* k = 24 \*  i = 28 \* j = 1 \* k = 25 \*  i = 28 \* j = 1 \* k = 26 \*  i = 28 \* j = 1 \* k = 27 \*  i = 28 \* j = 1 \* k = 28 \*  i = 28 \* j = 1 \* k = 29 \*  i = 28 \* j = 1 \* k = 30 \*  i = 29 \* j = 1 \* k = 1 \*  i = 29 \* j = 1 \* k = 2 \*  i = 29 \* j = 1 \* k = 3 \*  i = 29 \* j = 1 \* k = 4 \*  i = 29 \* j = 1 \* k = 5 \*  i = 29 \* j = 1 \* k = 6 \*  i = 29 \* j = 1 \* k = 7 \*  i = 29 \* j = 1 \* k = 8 \*  i = 29 \* j = 1 \* k = 9 \*  i = 29 \* j = 1 \* k = 10 \*  i = 29 \* j = 1 \* k = 11 \*  i = 29 \* j = 1 \* k = 12 \*  i = 29 \* j = 1 \* k = 13 \*  i = 29 \* j = 1 \* k = 14 \*  i = 29 \* j = 1 \* k = 15 \*  i = 29 \* j = 1 \* k = 16 \*  i = 29 \* j = 1 \* k = 17 \*  i = 29 \* j = 1 \* k = 18 \*  i = 29 \* j = 1 \* k = 19 \*  i = 29 \* j = 1 \* k = 20 \*  i = 29 \* j = 1 \* k = 21 \*  i = 29 \* j = 1 \* k = 22 \*  i = 29 \* j = 1 \* k = 23 \*  i = 29 \* j = 1 \* k = 24 \*  i = 29 \* j = 1 \* k = 25 \*  i = 29 \* j = 1 \* k = 26 \*  i = 29 \* j = 1 \* k = 27 \*  i = 29 \* j = 1 \* k = 28 \*  i = 29 \* j = 1 \* k = 29 \*  i = 29 \* j = 1 \* k = 30 \*  i = 30 \* j = 1 \* k = 1 \*  i = 30 \* j = 1 \* k = 2 \*  i = 30 \* j = 1 \* k = 3 \*  i = 30 \* j = 1 \* k = 4 \*  i = 30 \* j = 1 \* k = 5 \*  i = 30 \* j = 1 \* k = 6 \*  i = 30 \* j = 1 \* k = 7 \*  i = 30 \* j = 1 \* k = 8 \*  i = 30 \* j = 1 \* k = 9 \*  i = 30 \* j = 1 \* k = 10 \*  i = 30 \* j = 1 \* k = 11 \*  i = 30 \* j = 1 \* k = 12 \*  i = 30 \* j = 1 \* k = 13 \*  i = 30 \* j = 1 \* k = 14 \*  i = 30 \* j = 1 \* k = 15 \*  i = 30 \* j = 1 \* k = 16 \*  i = 30 \* j = 1 \* k = 17 \*  i = 30 \* j = 1 \* k = 18 \*  i = 30 \* j = 1 \* k = 19 \*  i = 30 \* j = 1 \* k = 20 \*  i = 30 \* j = 1 \* k = 21 \*  i = 30 \* j = 1 \* k = 22 \*  i = 30 \* j = 1 \* k = 23 \*  i = 30 \* j = 1 \* k = 24 \*  i = 30 \* j = 1 \* k = 25 \*  i = 30 \* j = 1 \* k = 26 \*  i = 30 \* j = 1 \* k = 27 \*  i = 30 \* j = 1 \* k = 28 \*  i = 30 \* j = 1 \* k = 29 \*  i = 30 \* j = 1 \* k = 30 \* |

1. No 33.

|  |
| --- |
| Bila kita memanggil prosedur tulis(30,30), berapakah jumlah ‘\*’ yang tertulis? |
| procedure tulis(n,m:integer);  var  i,j,k:integer;  begin  for i:=1 to n do  begin  for j:=1 to (n div m) do  for k:=1 to m do  writeln('\*');  for j:=1 to (n mod m) do  writeln('-');  end;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| procedure tulis(n,m:integer);  var  i,j,k:integer;  begin  for i:=1 to n do  begin  for j:=1 to (n div m) do  for k:=1 to m do  writeln('\*');  for j:=1 to (n mod m) do  writeln(i,'-');  end;  end;  var  P,L: integer;  begin  readln(P);  readln(L);  tulis(P,L);  readln;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| n div m n div m = \left \lfloor \frac{n}{m} \right \rfloor  Banyak pencetakan simbol-simbol: n(\left \lfloor \frac{n}{m} \right \rfloor m + (n\;mod\;m))    Perhatikan bahwa  \left \lfloor \frac{n}{m} \right \rfloor = \frac{n - (n\;mod\;m)}{m}  Maka didapat:  n(\frac{n - (n\;mod\;m)}{m}m + n\;mod\;m))  n((n - (n\;mod\;m)) + n\;mod\;m))  n(n)  n^{2} |

1. No 34.

|  |
| --- |
| Berapakah output dari program di atas? |
| var  T:array[1..13] of integer = (32, 6, 12, 64, 68, 100,  214, 120, 30, 80, 24, 22, 88);  function q(c,d:integer):integer;  var  e:integer;  begin  if (d=0) then q:=c else  begin  e:=c mod d;  q:=q(d,e);  end;  end;  function p(a,b:integer):integer;  var  i:integer;  begin  p:=T[a];  for i:=a to b do  begin  p:=q(p,T[i]);  end  end;  begin  writeln(p(1,13));  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var  T:array[1..13] of integer;  function q(c,d:integer):integer;  var  e:integer;  begin  T[1]:=32;  T[2]:=6;  T[3]:=12;  T[4]:=64;  T[5]:=68;  T[6]:=100;  T[7]:=214;  T[8]:=120;  T[9]:=30;  T[10]:=80;  T[11]:=24;  T[12]:=22;  T[13]:=88;  if (d=0) then q:=c else  begin  e:=c mod d;  q:=q(d,e);  end;  end;  function p(a,b:integer):integer;  var  i:integer;  begin  p:=T[a];  for i:=a to b do  begin  p:=q(p,T[i]);  end  end;  begin  writeln(p(1,13));  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| 2 |

1. No 35.

|  |
| --- |
| Jika a[] adalah array berindex 0..9 dengan isi {1,-1,-2,-1,-1,1,-1,2,-1,3}, maka berapakah nilai tot di akhir program? |
| var  T:array[1..13] of integer = (32, 6, 12, 64, 68, 100,  214, 120, 30, 80, 24, 22, 88);  function q(c,d:integer):integer;  var  e:integer;  begin  if (d=0) then q:=c else  begin  e:=c mod d;  q:=q(d,e);  end;  end;  function p(a,b:integer):integer;  var  i:integer;  begin  p:=T[a];  for i:=a to b do  begin  p:=q(p,T[i]);  end  end;  begin  writeln(p(1,13));  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses crt;  var  T:array[0..9] of integer ;  function q(c,d:integer):integer;  var  e:integer;  begin  T[0]:=1;  T[1]:=-1;  T[2]:=-2;  T[3]:=-1;  T[4]:=-1;  T[5]:=1;  T[6]:=-1;  T[7]:=2;  T[8]:=-1;  T[9]:=3;  if (d=0) then q:=c  else  begin  e:=c mod d;  q:=q(d,e);  end;  end;  function p(a,b:integer):integer;  var  i:integer;  begin  p:=T[a];  for i:=a to b do  begin  p:=q(p,T[i]);  end  end;  begin  writeln(p(1,13));  readln;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| -1 |

1. No 36.

|  |
| --- |
| Apakah output dari pemanggilan writeln(hop(18, 3, 1993)) ? |
| function hap(x,t: integer): integer;  begin  if t = 1 then  hap := x mod 5  else  hap := 5\*x;  end;  function hip(x,y: integer): integer;  begin  if x < y then  hip := hip(y,x)  else  hip := hap(x,1) + hap(y,2);  end;  function hop(x,y,z: integer): integer;  begin  if y > z then  hop := hop(x,z,y)  else if x > y then  hop := hop(y,x,z)  else  hop := hip(x,y) + z;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| function hap(x,t: integer): integer;  begin  if t = 1 then  hap := x mod 5  else  hap := 5\*x;  end;  function hip(x,y: integer): integer;  begin  if x < y then  hip := hip(y,x)  else  hip := hap(x,1) + hap(y,2);  end;  function hop(x,y,z: integer): integer;  begin  if y > z then  hop := hop(x,z,y)  else if x > y then  hop := hop(y,x,z)  else  hop := hip(x,y) + z;  writeln(x,' ',y,' ',z);  end;  var  a,b,c : integer;  begin  a:=18;  b:=3;  c:=1993;  writeln('X = ',a);  writeln('Y = ',b);  writeln('Z = ',c);  writeln(hop(a,b,c));  readln;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| X = 18  Y = 3  Z = 1993  3 18 1993  18 3 1993  2011 |

1. No 37.

|  |
| --- |
| Apakah output dari pemanggilan writeln(hip(hop(201,320,12), hop(20,1120,10)) + hap(21,30)) ? |
| function hap(x,t: integer): integer;  begin  if t = 1 then  hap := x mod 5  else  hap := 5\*x;  end;  function hip(x,y: integer): integer;  begin  if x < y then  hip := hip(y,x)  else  hip := hap(x,1) + hap(y,2);  end;  function hop(x,y,z: integer): integer;  begin  if y > z then  hop := hop(x,z,y)  else if x > y then  hop := hop(y,x,z)  else  hop := hip(x,y) + z;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| function hap(x,t: integer): integer;  begin  if t = 1 then  hap := x mod 5  else  hap := 5\*x;  writeln('hap = ',hap);  writeln('Hasilnya hap = ', hap);  end;  function hip(x,y: integer): integer;  begin  if x < y then  hip := hip(y,x)  else  hip := hap(x,1) + hap(y,2);  writeln('hip = ',hip);  writeln('Hasilnya hip = ', hip);  end;  function hop(x,y,z: integer): integer;  begin  if y > z then  hop := hop(x,z,y)  else if x > y then  hop := hop(y,x,z)  else  hop := hip(x,y) + z;  writeln('hop = ',hop);  writeln('Hasilnya hop = ', hop);  end;  begin  writeln(hip(hop(201,320,12), hop(20,1120,10)) + hap(21,30));  readln;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| hap = 0  Hasilnya hap = 0  hap = 50  Hasilnya hap = 50  hip = 50  Hasilnya hip = 50  hip = 50  Hasilnya hip = 50  hop = 1170  Hasilnya hop = 1170  hop = 1170  Hasilnya hop = 1170  hop = 1170  Hasilnya hop = 1170  hap = 1  Hasilnya hap = 1  hap = 60  Hasilnya hap = 60  hip = 61  Hasilnya hip = 61  hip = 61  Hasilnya hip = 61  hop = 381  Hasilnya hop = 381  hop = 381  Hasilnya hop = 381  hop = 381  Hasilnya hop = 381  hap = 0  Hasilnya hap = 0  hap = 1905  Hasilnya hap = 1905  hip = 1905  Hasilnya hip = 1905  hip = 1905  Hasilnya hip = 1905  hap = 105  Hasilnya hap = 105  2010 |

1. No 39.

|  |
| --- |
| Apabila diberi masukan n=7, maka berapakah banyaknya ‘\*’ yang dicetak pada layar? |
| for i:=1 to n do  begin  for k:=i to n-1 do write(' ');  for j:=1 to (2\*i-1) do  if (i=n) or (i mod 2=1) then write('\*')  else if j mod 2=1 then write('\*')  else write('0');  writeln;  end;  for l:=n downto 2 do  begin  for m:=l to n do write(' ');  for o:=(2\*l-1) downto 3 do  if o mod 2=1 then write('\*')  else write('0');  writeln;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var  n,i,k,j,m,l,o : integer;  begin  n:=7;  for i:=1 to n do  begin  for k:=i to n-1 do write(' ');  for j:=1 to (2\*i-1) do  if (i=n) or (i mod 2=1) then write('\*')  else if j mod 2=1 then write('\*')  else write('0');  writeln('\*');  end;  for l:=n downto 2 do  begin  for m:=l to n do write(' ');  for o:=(2\*l-1) downto 3 do  if o mod 2=1 then write('\*')  else write('0');  writeln;  end;  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| \*\*  \*0\*\*  \*\*\*\*\*\*  \*0\*0\*0\*\*  \*\*\*\*\*\*\*\*\*\*  \*0\*0\*0\*0\*0\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*0\*0\*0\*0\*0\*  \*0\*0\*0\*0\*  \*0\*0\*0\*  \*0\*0\*  \*0\*  \* |

1. No 40.

|  |
| --- |
| Berapakah nilai yang dihasilkan dari pemanggilan mencari(50)? |
| function mencari(N:integer):integer;  var i,j,z:integer;  begin  mencari:=0;  for i:=1 to N do  begin  j:=1;  z:=0;  while (j <= i) do  begin  if (i mod j = 0) then inc(z);  inc(j);  end;  if (z mod 2 <> 0) then  mencari:=mencari+1;  end;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  function mencari(N:integer):integer;  var i,j,z:integer;  begin  mencari:=0;  for i:=1 to N do  begin  j:=1;  z:=0;  while (j <= i) do  begin  if (i mod j = 0) then inc(z);  inc(j);  end;  if (z mod 2 <> 0) then  mencari:=mencari+1;  writeln('i ','j ','z');  writeln(i,' ',j,' ',z);  end;  end;  var  M : integer;  begin  M:=50;  writeln('Mencari : ',M);  write(mencari(M));  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| Mencari : 50  i j z  1 2 1  i j z  2 3 2  i j z  3 4 2  i j z  4 5 3  i j z  5 6 2  i j z  6 7 4  i j z  7 8 2  i j z  8 9 4  i j z  9 10 3  i j z  10 11 4  i j z  11 12 2  i j z  12 13 6  i j z  13 14 2  i j z  14 15 4  i j z  15 16 4  i j z  16 17 5  i j z  17 18 2  i j z  18 19 6  i j z  19 20 2  i j z  20 21 6  i j z  21 22 4  i j z  22 23 4  i j z  23 24 2  i j z  24 25 8  i j z  25 26 3  i j z  26 27 4  i j z  27 28 4  i j z  28 29 6  i j z  29 30 2  i j z  30 31 8  i j z  31 32 2  i j z  32 33 6  i j z  33 34 4  i j z  34 35 4  i j z  35 36 4  i j z  36 37 9  i j z  37 38 2  i j z  38 39 4  i j z  39 40 4  i j z  40 41 8  i j z  41 42 2  i j z  42 43 8  i j z  43 44 2  i j z  44 45 6  i j z  45 46 6  i j z  46 47 4  i j z  47 48 2  i j z  48 49 10  i j z  49 50 3  i j z  50 51 6  7  Hasilnya : 7; |

1. No 41.

|  |
| --- |
| Berapakah nilai yang dihasilkan dari pemanggilan mencari(50)? |
| function mencari(N:integer):integer;  var i,j,z:integer;  begin  mencari:=0;  for i:=1 to N do  begin  j:=1;  z:=0;  while (j <= i) do  begin  if (i mod j = 0) then inc(z);  inc(j);  end;  if (z mod 2 <> 0) then  mencari:=mencari+1;  end;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  function mencari(N:integer):integer;  var i,j,z:integer;  begin  mencari:=0;  for i:=1 to N do  begin  j:=1;  z:=0;  while (j <= i) do  begin  if (i mod j = 0) then inc(z);  inc(j);  end;  if (z mod 2 <> 0) then  mencari:=mencari+1;  writeln('i ','j ','z');  writeln(i,' ',j,' ',z);  end;  end;  var  M : integer;  begin  M:=9000;  writeln('Mencari : ',M);  write(mencari(M));  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| i j z  8989 8990 4  i j z  8990 8991 16  i j z  8991 8992 12  i j z  8992 8993 12  i j z  8993 8994 6  i j z  8994 8995 8  i j z  8995 8996 8  i j z  8996 8997 12  i j z  8997 8998 4  i j z  8998 8999 8  i j z  8999 9000 2  i j z  9000 9001 48  94 |

1. No 42.

|  |
| --- |
| Keluaran dari program di atas adalah .... |
| var  data1 : array[1..10] of integer =  (3,9,2,2,1,5,7,5,5,8);  data2,data3 : array[1..10] of integer;  i : integer;  begin  for i:= 1 to 10 do  data2[i] := 0;  for i:= 1 to 10 do  inc(data2[data1[i]]);  for i:= 2 to 10 do  data2[i] := data2[i] + data2[i-1];  for i:= 10 downto 1 do  begin  data3[data2[data1[i]]] := data1[i];  dec(data2[data1[i]]);  end;  for i:= 1 to 10 do  write(data3[i]);  end |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| var  data1 : array[1..10] of integer;  data2,data3 : array[1..10] of integer;  i : integer;  begin  data1[1]:=3;  data1[2]:=9;  data1[3]:=2;  data1[4]:=2;  data1[5]:=1;  data1[6]:=5;  data1[7]:=7;  data1[8]:=5;  data1[9]:=5;  data1[10]:=8;  for i:= 1 to 10 do  data2[i] := 0;  for i:= 1 to 10 do  inc(data2[data1[i]]);  for i:= 2 to 10 do  data2[i] := data2[i] + data2[i-1];  for i:= 10 downto 1 do  begin  data3[data2[data1[i]]] := data1[i];  dec(data2[data1[i]]);  end;  for i:= 1 to 10 do  write(data3[i]);  readln;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| 1223555789 |

1. No 43.

|  |
| --- |
| Apakah keluaran dari program di atas? |
| var i,j,x: integer;  begin  x := 0;  for i:=1 to 5 do begin  for j:= 5 downto 1 do begin  x := x + i + j;  end;  end;  writeln(x);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var i,j,x: integer;  begin  x := 0;  for i:=1 to 5 do begin  for j:= 5 downto 1 do begin  x := x + i + j;  writeln('i':5,'j':5,'x':5);  writeln(i:5,j:5,x:5);  end;  end;  writeln(‘Hasil : ’,x);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| i j x  1 5 6  i j x  1 4 11  i j x  1 3 15  i j x  1 2 18  i j x  1 1 20  i j x  2 5 27  i j x  2 4 33  i j x  2 3 38  i j x  2 2 42  i j x  2 1 45  i j x  3 5 53  i j x  3 4 60  i j x  3 3 66  i j x  3 2 71  i j x  3 1 75  i j x  4 5 84  i j x  4 4 92  i j x  4 3 99  i j x  4 2 105  i j x  4 1 110  i j x  5 5 120  i j x  5 4 129  i j x  5 3 137  i j x  5 2 144  i j x  5 1 150  Hasil : 150 |
|  |

1. No 44.

|  |
| --- |
| Apa keluaran yang dihasilkan dari program tersebut? |
| var x,y:integer;  procedure abc(a:integer;var b:integer);  var c:integer;  begin  if not((a=0)or(b=0)) then  if (a>b) then  begin  a:=a mod b;  abc(b,a);  end  else  begin  b:=b mod a;  abc(a,b);  end;  write(a,' ');  end;  begin  x:=219; y:=168;  abc (x,y);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var x,y:integer;  procedure abc(a:integer;var b:integer);  var c:integer;  begin  if not((a=0)or(b=0)) then  if (a>b) then  begin  writeln(a,' A mod B ',b);  a:=a mod b;  abc(b,a);  writeln('Hasilnya adalah : ',a);  end  else  begin  b:=b mod a;  abc(a,b);  end;  end;  begin  x:=219; y:=168;  abc(x,y);  readkey;;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| 219 A mod B 168  168 A mod B 51  51 A mod B 15  15 A mod B 6  6 A mod B 3  Hasilnya adalah : 0  Hasilnya adalah : 3  Hasilnya adalah : 6  Hasilnya adalah : 15  Hasilnya adalah : 51 |

1. No 45.

|  |
| --- |
| Apa keluaran yang dihasilkan dari program tersebut? |
| var x,y:integer;  procedure abc(a:integer;var b:integer);  var c:integer;  begin  if not((a=0)or(b=0)) then  if (a>b) then  begin  a:=a mod b;  abc(b,a);  end  else  begin  b:=b mod a;  abc(a,b);  end;  write(a,' ');  end;  begin  x:=219; y:=168;  abc (x,y);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  var x,y:integer;  procedure abc(a:integer;var b:integer);  var c:integer;  begin  if not((a=0)or(b=0)) then  if (a>b) then  begin  a:=a mod b;  abc(b,a);  end  else  begin  b:=b mod a;  abc(a,b);  end;  writeln('Hasilnya adalah : ',b);  end;  begin  x:=219; y:=168;  abc(x,y);  readkey;;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| Hasilnya adalah : 0  Hasilnya adalah : 3  Hasilnya adalah : 6  Hasilnya adalah : 15  Hasilnya adalah : 51  Hasilnya adalah : 168 |

1. No 46.

|  |
| --- |
| Jika potongan program dijalankan dengan masukan n = 2013, maka program akan menuliskan keluaran … |
| var sum, i, j, n, c : integer;  begin  readln(n);  sum := 0;  for i := 2 to n do  begin  c := 0;  j := i;  while (j > 0) do  begin  if (j mod 2 = 1) then c := c + 1;  j := j div 2;  end;  if (c = 1) then sum := sum + 1;  end;  writeln(sum);  end. |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| var sum, i, j, n, c : integer;  begin  n:=2013;  sum := 0;  for i := 2 to n do  begin  c := 0;  j := i;  while (j > 0) do  begin  if (j mod 2 = 1) then c := c + 1;  writeln(j);  j := j div 2;  end;  if (c = 1) then sum := sum + 1;  end;  write(sum);  writeln('Karena loopingnya panjang saya ambil yang paling bawah saja');  readln;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| 2013  1006  503  251  125  62  31  15  7  3  1  10  Hasilnya 10. |

1. No 47.

|  |
| --- |
| Berapakah bilangan yang tercetak dilayar jika dilakukan pemanggilan f(15,97,0)? |
| procedure f(x: longint; y: longint; z: longint);  begin  if (y = 0) then  writeln(z)  else  begin  if (y mod 2 = 1) then  z := z + x;  f(2\*x, y div 2, z)  end;  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  procedure f(x: longint; y: longint; z: longint);  begin  if (y = 0) then  writeln(z)  else  begin  if (y mod 2 = 1) then  z := z + x;  f(2\*x, y div 2, z)  end;  writeln(' x',' y ',' z');  writeln(x,' ',y,' ',z);  end;  var  a,b,c : longint;  begin  a:=15;  b:=97;  c:=0;  write('a : ');  write('b : ');  write('c = ');  f(a,b,c);  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| a : b : c = 1455  x y z  1920 0 1455  x y z  960 1 1455  x y z  480 3 495  x y z  240 6 15  x y z  120 12 15  x y z  60 24 15  x y z  30 48 15  x y z  15 97 15 |

1. No 48.

|  |
| --- |
| Berapakah nilai yang dihasilkan dari pemanggilan fungsi flip(4,7)? |
| function flop(a,b:longint):longint;  forward;  function flip(a,b:longint):longint;  begin  if (a = 0) then  flip:=0  else  flip:=a+flop(a-1,b);  end;  function flop(a,b:longint):longint;  begin  if (b = 0) then  flop:=0  else  flop:=b+flip(a,b-1);  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  function flop(a,b:longint):longint;  forward;  function flip(a,b:longint):longint;  begin  if (a = 0) then  flip:=0  else  flip:=a+flop(a-1,b);  writeln(a,' \* ',b,' + ',a);  end;  function flop(a,b:longint):longint;  begin  if (b = 0) then  flop:=0  else  flop:=b+flip(a,b-1);  end;  var  c,d : longint;  begin  c:=4;  d:=7;  writeln(flip(c,d));  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| 0 \* 3 + 0  1 \* 4 + 1  2 \* 5 + 2  3 \* 6 + 3  4 \* 7 + 4  32 |

1. No 49.

|  |
| --- |
| Berapakah nilai yang dihasilkan dari pemanggilan fungsi flop(100,200)? |
| function flop(a,b:longint):longint;  forward;  function flip(a,b:longint):longint;  begin  if (a = 0) then  flip:=0  else  flip:=a+flop(a-1,b);  end;  function flop(a,b:longint):longint;  begin  if (b = 0) then  flop:=0  else  flop:=b+flip(a,b-1);  end; |
| Kode Program Dimodifikasi : *(Hasil Modifikasi Diwarnai)* |
| uses wincrt;  function flop(a,b:longint):longint;  forward;  function flip(a,b:longint):longint;  begin  if (a = 0) then  flip:=0  else  flip:=a+flop(a-1,b);  end;  function flop(a,b:longint):longint;  begin  if (b = 0) then  flop:=0  else  flop:=b+flip(a,b-1);  writeln(a,' \* ',b,' + ',a);  end;  var  c,d : longint;  begin  c:=100;  d:=200;  writeln(flop(c,d));  readkey;  end. |
| Output Dari Kode Program Yang Dimodifikasi : |
| 0 \* 100 + 0  1 \* 101 + 1  2 \* 102 + 2  3 \* 103 + 3  4 \* 104 + 4  5 \* 105 + 5  6 \* 106 + 6  7 \* 107 + 7  8 \* 108 + 8  9 \* 109 + 9  10 \* 110 + 10  11 \* 111 + 11  12 \* 112 + 12  13 \* 113 + 13  14 \* 114 + 14  15 \* 115 + 15  16 \* 116 + 16  17 \* 117 + 17  18 \* 118 + 18  19 \* 119 + 19  20 \* 120 + 20  21 \* 121 + 21  22 \* 122 + 22  23 \* 123 + 23  24 \* 124 + 24  25 \* 125 + 25  26 \* 126 + 26  27 \* 127 + 27  28 \* 128 + 28  29 \* 129 + 29  30 \* 130 + 30  31 \* 131 + 31  32 \* 132 + 32  33 \* 133 + 33  34 \* 134 + 34  35 \* 135 + 35  36 \* 136 + 36  37 \* 137 + 37  38 \* 138 + 38  39 \* 139 + 39  40 \* 140 + 40  41 \* 141 + 41  42 \* 142 + 42  43 \* 143 + 43  44 \* 144 + 44  45 \* 145 + 45  46 \* 146 + 46  47 \* 147 + 47  48 \* 148 + 48  49 \* 149 + 49  50 \* 150 + 50  51 \* 151 + 51  52 \* 152 + 52  53 \* 153 + 53  54 \* 154 + 54  55 \* 155 + 55  56 \* 156 + 56  57 \* 157 + 57  58 \* 158 + 58  59 \* 159 + 59  60 \* 160 + 60  61 \* 161 + 61  62 \* 162 + 62  63 \* 163 + 63  64 \* 164 + 64  65 \* 165 + 65  66 \* 166 + 66  67 \* 167 + 67  68 \* 168 + 68  69 \* 169 + 69  70 \* 170 + 70  71 \* 171 + 71  72 \* 172 + 72  73 \* 173 + 73  74 \* 174 + 74  75 \* 175 + 75  76 \* 176 + 76  77 \* 177 + 77  78 \* 178 + 78  79 \* 179 + 79  80 \* 180 + 80  81 \* 181 + 81  82 \* 182 + 82  83 \* 183 + 83  84 \* 184 + 84  85 \* 185 + 85  86 \* 186 + 86  87 \* 187 + 87  88 \* 188 + 88  89 \* 189 + 89  90 \* 190 + 90  91 \* 191 + 91  92 \* 192 + 92  93 \* 193 + 93  94 \* 194 + 94  95 \* 195 + 95  96 \* 196 + 96  97 \* 197 + 97  98 \* 198 + 98  99 \* 199 + 99  100 \* 200 + 100  20200 |