CS 237: Concepts of Programming Languages

Project Part 1: Pascal

1- describe Pascal grammar and compare it with C grammar .

2- give a general program skeleton in Pascal .

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| grammar | In C | In Pascal |
| Variable Declaration | type variable\_list;  for example :  int i, j, k; | var  variable\_list : type;  for example :  var  age, weekdays : integer; |
| Decision Making | if(boolean\_expression)  statement;  else  statement;  for example :  if( a < 20 )  printf("a is less than 20\n" );  else  printf("a is not less than 20\n"); | if condition then  statement 1  else  statement 2;  for example :  if( a < 20 ) then  writeln('a is less than 20' )  else  writeln('a is not less than 20'); |
| Loops | while(condition) {  statement(s);  }  For example :  int main () {  int a = 10;  while( a < 20 ) {  printf("value of a: %d\n", a);  a++; } return 0; } | while (condition) do  statement;  For example :  while number>0 do  begin  sum := sum + number;  number := number - 2;  end; |
| Defining a Function | function name(argument(s):type1; argument(s): type2; ...): function\_type;  local declarations;  begin  < statements >  name:= expression;  end;  for example :  function max(num1, num2: integer): integer;  var  result: integer;  begin  if (num1 > num2) then  result := num1  else  result := num2;  max := result;  end; | return\_type function\_name( parameter list ) {  body of the function  }  For example :  int max(int num1, int num2) {  int result;  if (num1 > num2)  result = num1;  else  result = num2;    return result;  } |

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| grammar | In C | In Pascal |
| Declaring Arrays | type arrayName [ arraySize ] ;  for example :  double balance[10]; | var  array-name: array[index-type] of element-type ;  for example :  var  n: array [1..10] of integer; |

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