Lesson 8 Lab

Task 1: define a function to swap 2 integers and to return the bigger value, with inputs as two pointers to integer

int swap (int\* x, int\* y);

Usage :

int main(void) {

int m = 22, n = 11;

printf("%d", swap (&m, &n)); /\*should print 22\*/

printf("%d", m); /\*should print 11\*/

}

|  |
| --- |
| int swap(int \*m, int \*n)  {  int tmp = \*m;  \*m = \*n;  \*n = tmp;  return \*m > \*n ? \*m : \*n;  } |

Task 2: define a function to find and bring back both min and max through input points

void max\_min( int x, int y, int\* pmin, int\* pmax);

|  |
| --- |
| void max\_min(int x, int y, int\* pmin, int\* pmax)  {      if (x > y)      {          \*pmax = x;          \*pmin = y;          return;      }      \*pmax = y;      \*pmin = x;  } |

Exercise (not for marks): Create an appropriate declaration for each of the following variables:

1. digits is an array of 10 integers.

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| int digits[10]; |

1. mat is an array of three arrays of five integers.

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| --- |
| int mat[3][5]; |

1. psa is an array of 10 pointers to char.

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| --- |
| char \*psa[10]; |

1. pstr is a pointer to an array of 10 chars.

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| --- |
| char (\*pstr)[10]; |

Task 3: To identify what are the listed declarations

1. float \*(\*p) [4];

|  |
| --- |
| P is a pointer to an array of 4 pointers to floats |

1. double \*p[4][4];

|  |
| --- |
| P is an array of 4 pointer to floats of 4 floats |

1. int \*(\*p[4]) [4];

|  |
| --- |
| P is an array of 4 pointers to arrays of 4 pointers to int |

1. void \*(p[4]) [4];

|  |
| --- |
| P is an array of 4 pointers to arrays of 4 pointers to void |

Task 4: to identify what are the listed declarations

1. double (\*p) (int, double\*) ;

|  |
| --- |
| P is a pointer to a function that takes an int and a pointer to double |

1. double \*(\*p) (int, double\*);

|  |
| --- |
| P is a pointer a function that takes an int and a pointer to double and returns a pointer to double |

1. double (\*(\*p)[3]) (int, double\*);

|  |
| --- |
| P is a pointer to an array of 3 pointers to a function that takes an int and pointer to double |

1. double (\*p[3]) (int, double\*);

|  |
| --- |
| P is an array of 3 pointers to a function that takes an int and a pointer to double |

Task 5: What’s the output for each question

|  |  |
| --- | --- |
| Calendar  Description automatically generated with medium confidence | Your answer:  25 25 |

|  |  |
| --- | --- |
| A picture containing text  Description automatically generated | Your answer:  23 21 |