PROBLEM 2.2

Write a program to recieve Cartesian Coordinates (x,y) of a point and convert them into polar coordinates (r,phi) **Hint: r = sqrt(x^2+y2), phi = tan^-1(y/x)**

ALGORITHM

1. Start
2. Declare float variables x,y,r,phi
3. Take x and y as input
4. Calculate r using the formula r = sqrt(x^2+y2)
5. Calculate phi using the formula phi = tan^-1(y/x)
6. Display the input variables and results
7. Stop

PSEUDOCODE

```
DECLARE FLOAT x,y,r,phi
INPUT x,y
ASSIGN r to SQUARE ROOT (x square + y square)
ASSIGN phi to INVERSE TANGENT(y/x)
DISPLAY "Cartesian Co-ordinates: "
DISPLAY x and y
DISPLAY "Polar Coordinates: "
DISPLAY r and phi
```

FLOWCHART

```
flowchart TD
A([Start]) --> B[[Declare variables x,y,r,phi]]
B --> C[/INPUT x and y/]
C --> D[[Calculate r]]
D --> E[[Calculate phi]]
E --> F[/Display Input variables and results/]
F --> G([Stop])
```