

Circle Program

Here is the sample code for the circle program that required you to:

- enter the radius and display on screen
- calculate the area and display it on the screen
- calculate the circumference and display it on the screen
- determine which is larger, the area or circumference and display the answer on the screen

```
int      radius;           //creates an integer variable named "radius"
float    area;            //creates a decimal variable named "area"
float    circumference;   //creates a decimal variable named "circumference"
PFont    font;           //creates a print font (PFont) for text output

void setup()
{
  size(500, 300);         //creates an output window of 500 x 500
  background(255);       //sets background colour to white
  radius = 0;            //sets initial value for radius of zero
  area = 0;              //sets initial value for area of zero
  circumference = 0;     //sets initial value for circumference of zero
  font=createFont("Arial",16,true); //creates text
  textFont(font,20);     //sets text size to 20
  fill(0);               //sets text colour to black
  text("Enter the radius of a circle", 10, 50); //displays text in initial window
}
//end of void setup()

void draw(){             //this loop is needed to refresh display window
}
//end of void draw()

void keyPressed()
{
  if( key >= '0' && key <= '9' ) //enters a keyboard digit between 0 and 9
  {
    radius *= 10;                //allows for more than a 1 digit number to be entered by
    radius += key - 48;          //converting ASCII numbers into regular numbers and
  }                               //then appending it to previous digits
  if( key == BACKSPACE || key == DELETE ) //allows you to backup if you made a mistake
  {
    radius /= 10;
  }
  if( key == ENTER || key == RETURN ) //sets the value of the radius
  {
  }
}
//end of void keyPressed()

background(255);          //redraws a white background in the loop
fill(0);                  //sets text colour to black within the loop, but note that
//this step is not necessary if text colour doesn't change

area = PI * sq(radius);   //calculates the area of a circle
circumference = 2 * PI * radius; //calculates the circumference of a circle
text("Enter the radius of a circle", 10, 50); //reprints text line within the loop otherwise it disappears
text(radius, 10, 80);     //prints the radius value
text("The area is", 10, 130);
text(nf(area,1,1), 115, 130); //prints the calculated area, the nf(#,1,1) rounds to 1 decimal
text("The circumference is", 10, 160);
text(nf(circumference,1,1), 200, 160); //prints the calculated circumference, the nf(#,1,1) rounds to 1 decimal

if(area > circumference) //start of if/then conditional statement that decides which
{                          //is bigger, the area or circumference, if area is bigger
  text("The area is larger", 10, 200); //then print the message that area is larger
}
else                       //if the area is not bigger than the circumference
{                          //then print the message that the circumference is larger
  text("The circumference is larger", 10, 200);
}
//end of if/then statement
}
//end of program
```