For a dimension A (e.g. X and Y)

A-size (e.g. Width or Height) of background image is BS

A-size of window/viewport is VS

Player has A-position PP, A-coordinate PC

Object has A-position OP, A-coordinate OC

Have an A-coordinate a s.t. 0 <= a < VS and you want the player to always be drawn at that coordinate (except when at the edges of the background)

If BS <= VS Then

PC = PP + (VS – BS) / 2

OC = OP + (VS – BS) / 2

Else

If PP >= BS – VS + a Then

PC = PP – BS + VS

OC = OP – BS + VS

ElseIf PP <= a Then

PC = PP

OC = OP

Else

PC = a

OC = OP – PP + PC

EndIf

End If

GameObject:

public void UpdateCoordinates(Vector2 playerPosition, Vector2 playerCoordinates)

{

int xLine = 610;

int yLine = 420;

int viewWidth = 1280;

int viewHeight = 720;

int bgWidth = 1300;

int bgHeight = 1000;

//x

if (bgWidth <= viewWidth)

coordinates.X = position.X + (viewWidth - bgWidth) / 2;

else

{

if (playerPosition.X >= bgWidth - viewWidth + xLine)

coordinates.X = position.X - bgWidth + viewWidth;

else if (playerPosition.X <= xLine)

coordinates.X = position.X;

else

coordinates.X = position.X - playerPosition.X + playerCoordinates.X;

}

//y

if (bgHeight <= viewHeight)

coordinates.Y = position.Y + (viewHeight - bgHeight) / 2;

else

{

if (playerPosition.Y >= bgHeight - viewHeight + yLine)

coordinates.Y = position.Y - bgHeight + viewHeight;

else if (playerPosition.Y <= yLine)

coordinates.Y = position.Y;

else

coordinates.Y = position.Y - playerPosition.Y + playerCoordinates.Y;

}

}

Player:

public void updateCoordinates()

{

int xLine = 610;

int yLine = 420;

int viewWidth = 1280;

int viewHeight = 720;

int bgWidth = 1300;

int bgHeight = 1000;

//x

if (bgWidth <= viewWidth)

coordinates.X = position.X + (viewWidth - bgWidth) / 2;

else

{

if (position.X >= bgWidth - viewWidth + xLine)

coordinates.X = position.X - bgWidth + viewWidth;

else if (position.X <= xLine)

coordinates.X = position.X;

else

coordinates.X = xLine;

}

//y

if (bgHeight <= viewHeight)

coordinates.Y = position.Y + (viewHeight - bgHeight) / 2;

else

{

if (position.Y >= bgHeight - viewHeight + yLine)

coordinates.Y = position.Y - bgHeight + viewHeight;

else if (position.Y <= yLine)

coordinates.Y = position.Y;

else

coordinates.Y = yLine;

}

}