In [1]:
```
import matplotlib.pyplot as plt
import pandas as pd
from math import pi
import seaborn as sns
import numpy as np
import warnings
```

In [2]:
```
warnings.filterwarnings('ignore')
```

Data was taken from Kaggle

In [3]:
```
games_data = pd.read_csv('vgsales.csv', index_col=0)
games_data.head()
```

Out[3]:

Rank	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Othe
1	Wii Sports	Wii	2006.0	Sports	Nintendo	41.49	29.02	3.77	
2	Super Mario Bros.	NES	1985.0	Platform	Nintendo	29.08	3.58	6.81	
3	Mario Kart Wii	Wii	2008.0	Racing	Nintendo	15.85	12.88	3.79	
4	Wii Sports Resort	Wii	2009.0	Sports	Nintendo	15.75	11.01	3.28	
5	Pokemon Red/Pokemon Blue	GB	1996.0	Role-Playing	Nintendo	11.27	8.89	10.22	

I decided to analyze the sales data of top four genres of games from 2007 to 2011. Since they exactly look good with radar chart.

In [4]:
```
middle_games_data = games_data.query('(Year >= 2007) & (Year <= 2010)')
middle_games_data.Year = middle_games_data.Year.astype('int')
middle_games_data.head()
```

Out[4]:

Rank	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Other_Sales
3	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	12.88	3.79	3.31
4	Wii Sports Resort	Wii	2009	Sports	Nintendo	15.75	11.01	3.28	2.96
9	New Super Mario Bros. Wii	Wii	2009	Platform	Nintendo	14.59	7.06	4.70	2.26
14	Wii Fit	Wii	2007	Sports	Nintendo	8.94	8.03	3.60	2.15
15	Wii Fit Plus	Wii	2009	Sports	Nintendo	9.09	8.59	2.53	1.79

In [5]:
```
genres_to_analise = middle_games_data.Genre.value_counts()[:7].index.value
mask = middle_games_data.Genre.isin(genres_to_analise)
top_genres_middle_games_data = middle_games_data[mask]
pivot_genres_sales_data = top_genres_middle_games_data.pivot_table(index=[
                                                                   values=
                                                                   aggfunc
time_sales = {year: pivot_genres_sales_data.loc[year] for year in range(20
pivot_genres_sales_data.head()
```

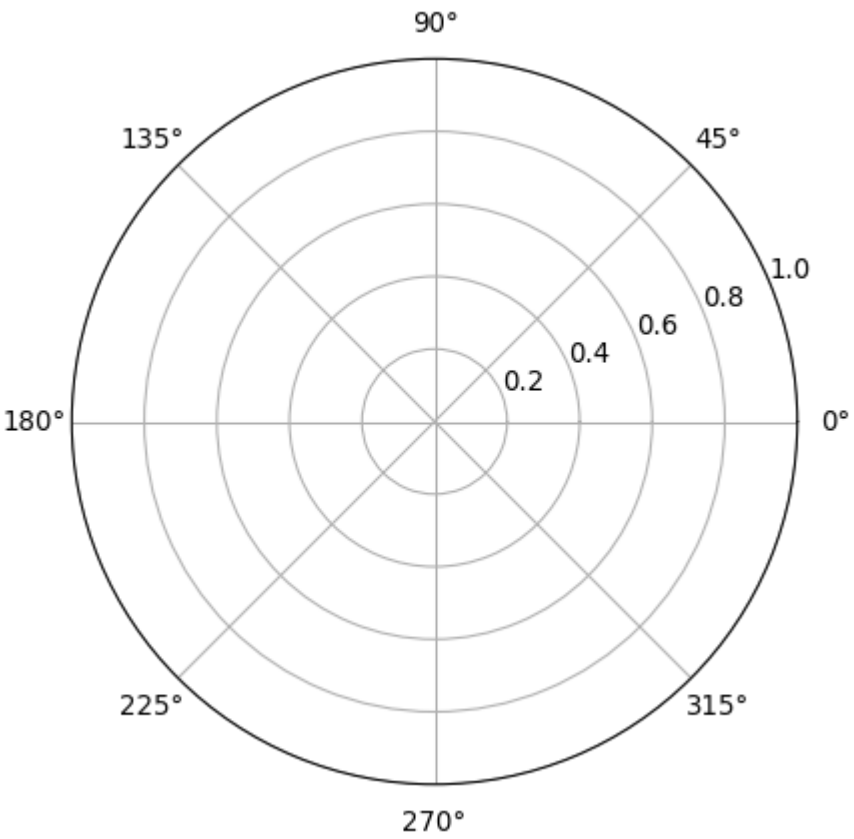
Out[5]:

		Global_Sales
Year	**Genre**	
2007	**Action**	106.50
	Adventure	24.47
	Misc	92.27
	Role-Playing	43.89
	Shooter	71.04

The way to ...

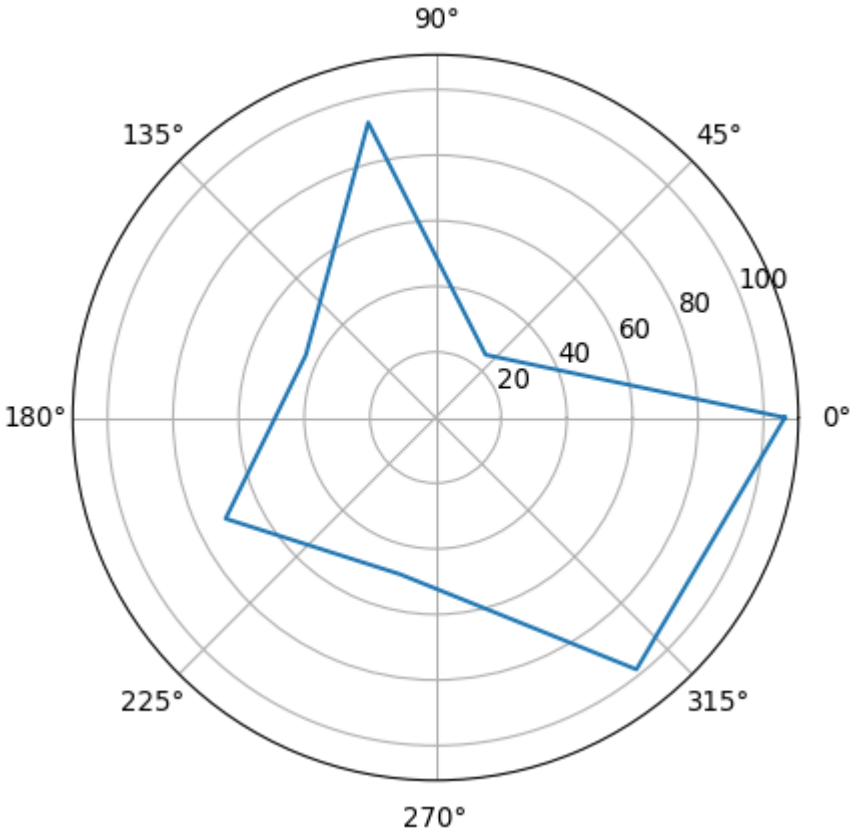
In [6]:
```
plt.rcParams['figure.dpi'] = 96
plt.rcParams['figure.figsize'] = (8, 5)
```

In [7]:
```
ax = plt.subplot(polar=True)
# or just plt.polar()
```



In [8]:
```
year = 2007
categories = genres_to_analise
N = len(categories)
angles = [i / N * 2 * pi for i in range(N)]
angles.append(angles[0])
```

In [9]:
```
ax = plt.subplot(polar=True)
values = np.append(time_sales[year],
                   time_sales[year].iloc[0])
ax.plot(angles, values)
plt.show()
```



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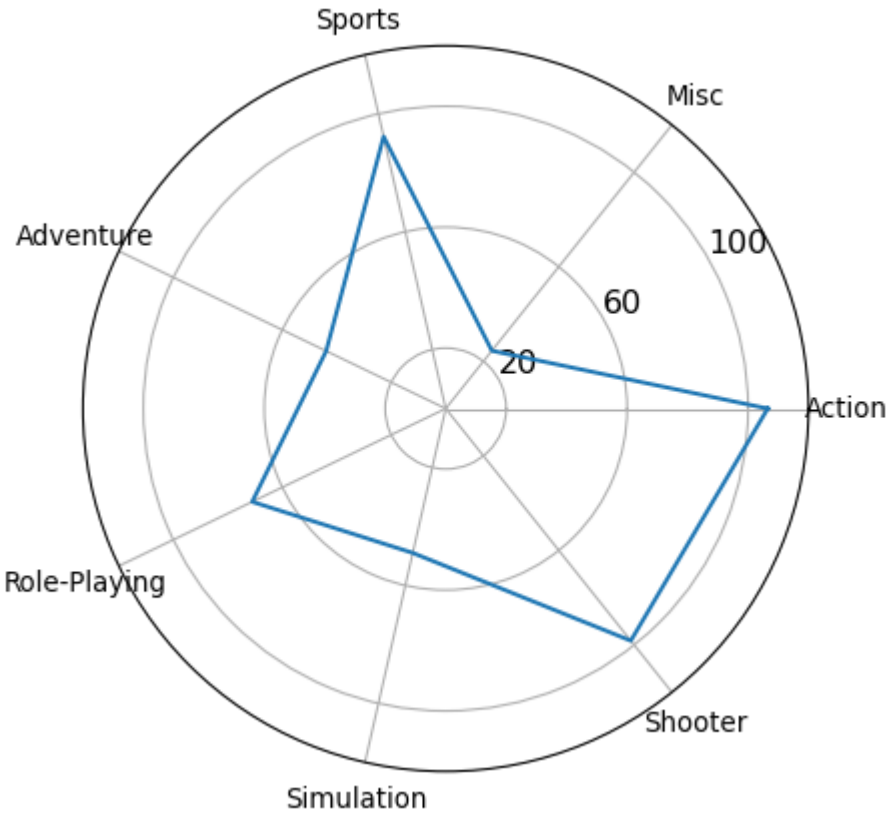
In [10]:
```
styles = ['grayscale', 'dark_background', 'classic', '_classic_test_patch'
```

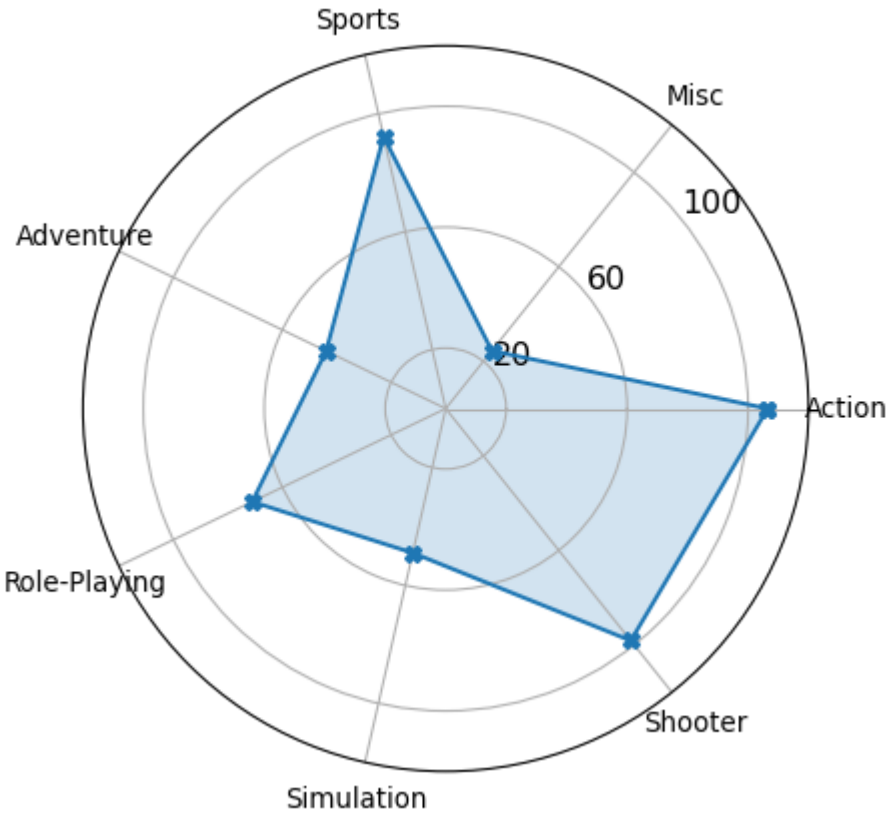
In [11]:
```
ax = plt.subplot(polar=True)
values = np.append(time_sales[year],
                   time_sales[year].iloc[0])
ax.plot(angles, values)
plt.xticks(angles[:-1], categories)
ax.set_rlabel_position(30)
plt.yticks([20, 60, 100], color='black', size=12)
plt.ylim(0, 120)

plt.show()
```



In [12]:
```
ax = plt.subplot(polar=True)
values = np.append(time_sales[year],
                   time_sales[year].iloc[0])
ax.plot(angles, values, marker='X')
ax.fill(angles, values, alpha=0.2)
plt.xticks(angles[:-1], categories)
ax.set_rlabel_position(39)
plt.yticks([20, 60, 100], color='black', size=12)
plt.ylim(0, 120)

plt.show()
```

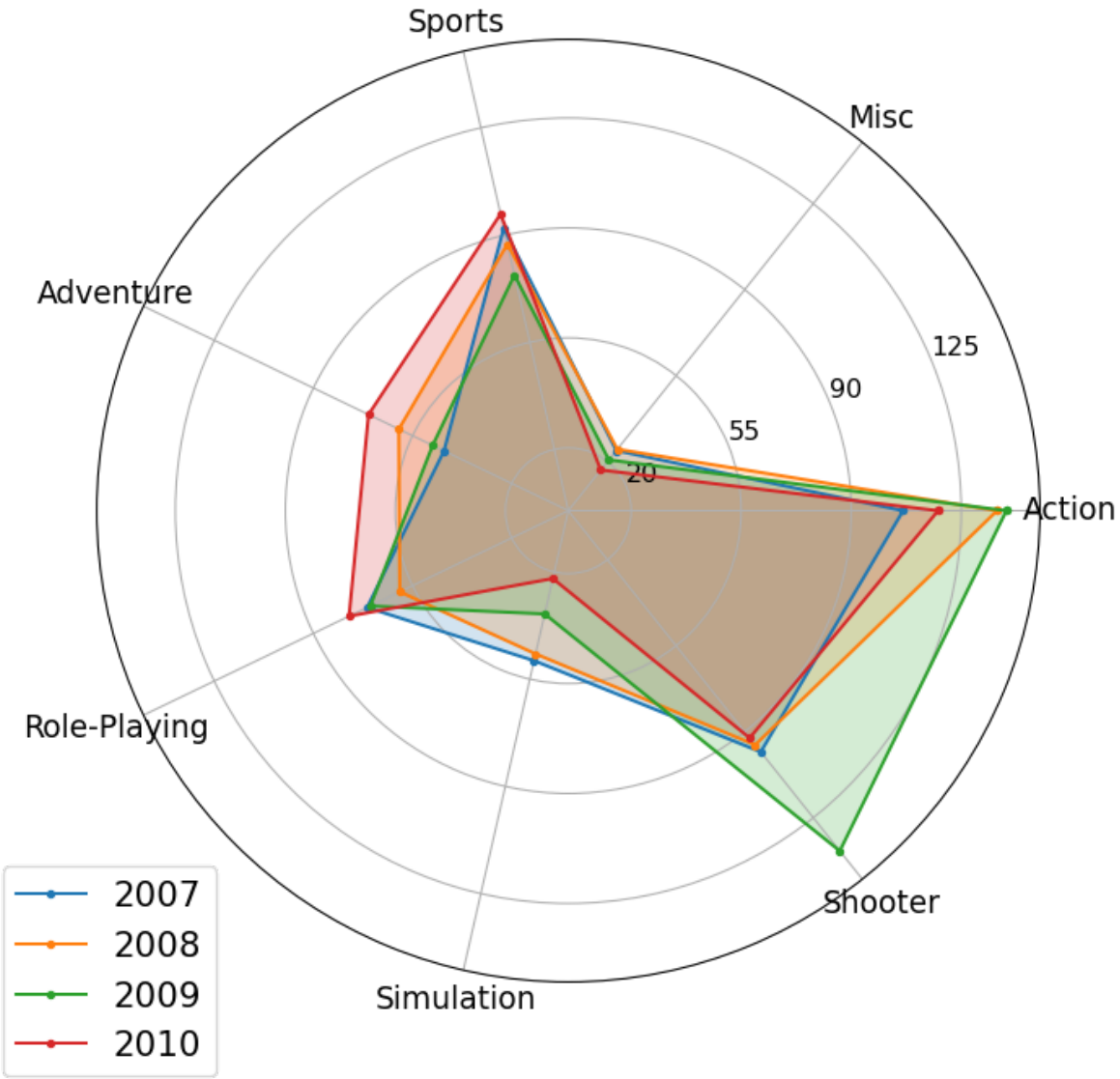


In [13]:

```
plt.figure(figsize=(10, 8), dpi=96)
#my_palette = plt.cm.get_cmap("Set2", len(range(2007, 2011)))
ax = plt.subplot(polar=True)
for i, year in enumerate(range(2007, 2011)):
    values = np.append(time_sales[year],
                       time_sales[year].iloc[0])
    ax.plot(angles, values, marker='.')
    ax.fill(angles, values, alpha=0.2)

plt.xticks(angles[:-1], categories, fontsize=14, color='black')
plt.legend([str(i) for i in range(2007, 2011)], prop={'size': 16}, loc=(-0
plt.yticks([20, 55, 90, 125], color='black', size=12)
plt.ylim(0, 150)


plt.show()
```



In [15]:
```
for i in games_data.Name.values:
    if 'S.T.A.L.K.E.R.' in i:
        print(i)
```

```
S.T.A.L.K.E.R.: Call of Pripyat
S.T.A.L.K.E.R.: Shadow of Chernobyl
S.T.A.L.K.E.R.: Clear Sky
```

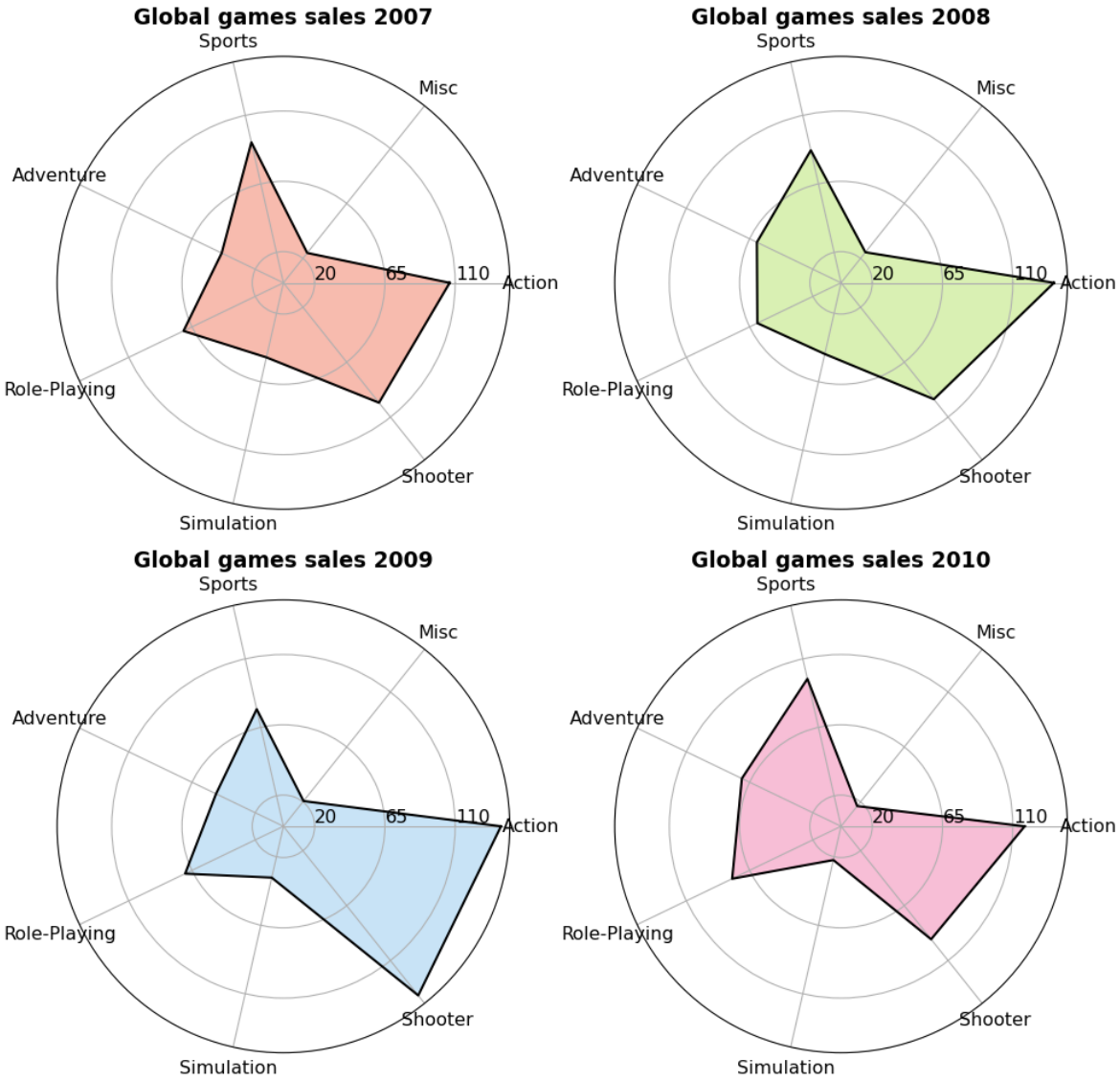
In [16]:
```
games_data[games_data.Name.str.startswith('S.T.A.L.K.E.R.:')]
```

Out[16]:

Rank	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Oth
12454	S.T.A.L.K.E.R.: Call of Pripyat	PC	2009.0	Shooter	Namco Bandai Games	0.00	0.05	0.0	
12624	S.T.A.L.K.E.R.: Shadow of Chernobyl	PC	2007.0	Shooter	THQ	0.01	0.04	0.0	
14023	S.T.A.L.K.E.R.: Clear Sky	PC	2008.0	Shooter	Deep Silver	0.00	0.03	0.0	

In [17]:
```
plt.figure(figsize=(12, 12), dpi=96)
colors = ['#F59E8C', '#CAEA93', '#B1D8F3', '#F5A3C5']

for i, year in enumerate(range(2007, 2011)):
    ax = plt.subplot(2, 2, i+1, polar=True)
    values = np.append(time_sales[year],
                       time_sales[year].iloc[0])
    ax.plot(angles, values, color='black')
    ax.fill(angles, values, alpha=0.7, color=colors[i])
    plt.xticks(angles[:-1], categories, fontsize=12, color='black')
    plt.yticks([20, 65, 110], color='black', size=12)
    plt.ylim(0, 145)
    ax.set_rlabel_position(0)
    plt.title(f'Global games sales {year}', fontweight='bold', fontsize=14
```



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