# Development of Serious Game to Fight Childhood Obesity

## Master in Informatic Engeneering

**Fátima Gonçalves, Vítor Carvalho, Demétrio Matos**

1 – Instituto Politécnico do Cávado e do Ave (EST)
2 – Instituto Politécnico do Cávado e do Ave (EST)
3 – Instituto Politécnico do Cávado e do Ave (ESD)

2nd SYMPOSIUM OF APPLIED RESEARCH

## BACKGROUND

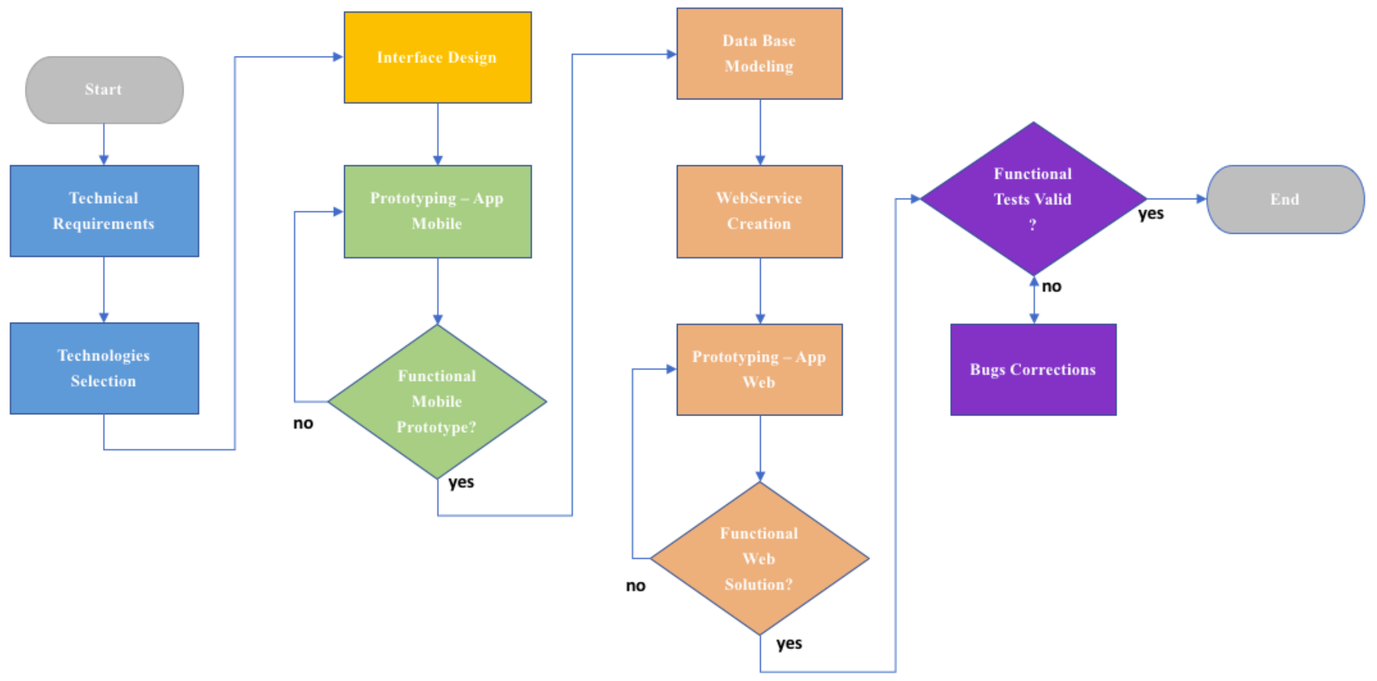
According to WHO, childhood obesity, classified as the epidemic of the 21st century, is reaching alarming values all over the world.
Mobile technologies, specially smartphones and tablets, are an important part of a children's life. Many studies believe that these technologies can be used in a healthy way, helping children to grow, so caregivers allow its use hoping to help in their kid's development. With educational games kids learn better and faster, because they feel motivated.

## OBJECTIVES

The aim of this project is to develop a system composed by a mobile application, that helps fighting childhood obesity, by monitoring and controlling kids. It should have a user-friendly layout, and to lead kids, in the age group of 6 to 9, to increase their movement. It's intended to develop a structure of control that allows caregivers to see app scores and follow their commitment. This information determines if the app is helpful to fight childhood obesity and help them become more active.

## METHODOLOGY

At first, a detailed problem analysis will be performed, followed by a mobile app interface definition. After this, the app will be developed and tests done to improve the proposed solution.
Then, a selected group of kids will play with the game and the results will be used to validate this project.




## RESULTS AND CONCLUSIONS

It's expected that the developed game can help fight this epidemic, and allow kids to improve their food habits and obtain a healthy lifestyle, specifically in the targeted group.

## BIBLIOGRAPHY

Adom, T., Puoane, T., De Villiers, A., Kengne, A. P., Onis, M. de, Blossner, M., … Koch, G. (2017). Prevalence of obesity and overweight in African learners: a protocol for systematic review and meta-analysis. *BMJ Open*, *7*(1), e013538. https://doi.org/10.1136/bmjopen-2016-013538

André, P., & Oliveira, S. (2015). *Mobile Exergames: Exploring Methods for Generating Challenges based on the Context of Physical Interaction*.

Baranowski, T. (2015). Might Video Games Help Remedy Childhood Obesity? *Childhood Obesity*, *11*(4), 331–334. https://doi.org/10.1089/chi.2015.98999.tb

Dias, J. D., Mekaro, M. S., Cheng Lu, J. K., Otsuka, J. L., Fonseca, L. M. M., Zem-Mascarenhas, S. H., … Zem-Mascarenhas, S. H. (2016). Serious game development as a strategy for health promotion and tackling childhood obesity. *Revista Latino-Americana de Enfermagem*, *24*. https://doi.org/10.1590/1518-8345.1015.2759

Djaouti, D., Alvarez, J., Jessel, J.-P., & Rampnoux, O. (n.d.). Origins of Serious Games.

IPCA INSTITUTO POLITÉCNICO DO CÁVADO E DO AVE
ESCOLA SUPERIOR DE TECNOLOGIA IPCA
digarc Digital Games Research Center

**CONTACTS**
a11481@alunos.ipca.pt
vcarvalho@ipca.pt
dmatos@ipca.pt